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

CE compliant according
to European regulations

With TROXNETCOM
as an option

ATEX certification

Tested to VDI 6022

Fire dampers
Type 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
- Explosion-proof construction (ATEX) as an option
- 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

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Variants

Product examples

FKRS-EU with fusible link

FKRS-EU with spring return actuator

FKRS-EU with spring return actuator (explosion-proof)

FKRS-EU with fusible link and cover grille used as an air transfer unit

Description

FKRS-EU with
spring return actuator

For detailed information
on attachments
see Chapter K4 – 1.2.

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

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

Variants
– With fusible link
– With spring return actuator
– With spring return actuator
for use in potentially explosive atmospheres
– With cover grilles both ends as air transfer
unit with general building inspectorate licence:
Z-19.18-2128

Nominal sizes
– 100, 125, 150, 160, 180, 200,
224, 250, 280, 315
– L: 400 mm

Attachments
– Limit switch for damper blade
position indication*
– Spring return actuator for 24 V AC/DC
or 230 V AC supply voltage*
– Spring return actuator for 24 – 230 V
supply voltage, for use in potentially
explosive atmospheres
– Network module for the integration
with AS-i or LON networks*
*All attachments can be retrofitted

Accessories
– Installation block ER for dry mortarless
installation into solid walls and ceiling slabs
– Installation block TQ for dry mortarless
installation into lightweight partition walls or fire
walls with metal support structure and cladding on
both sides, into shaft walls with or without metal
support structure, and into timber
stud walls and half-timbered constructions
– Installation kit WA for dry mortarless installation
on the face of solid walls
– Installation kit GL for installation
into lightweight partition walls or fire walls with
flexible ceiling joint
– Installation kit WE for dry mortarless installation
remote from solid walls,
ceiling slabs and lightweight partition walls
– Cover grille
– Flexible connectors
– Extension piece

Special characteristics
– Declaration of performance according
to Construction Products Regulation
– Classification to EN 13501-3,
up to EI 120 (v_e, h_o, i ↔ 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 (02/2010), 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

Parts and characteristics
– Explosion-proof constructions
for zones 1, 2, 21, 22
– Release temperature 72 °C or 95 °C
(for use in warm air ventilation systems)
– Approved installation orientation
from 0° to 360°

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 in 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.

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Installation and commissioning
Installation is carried out according
to the installation and operating manual.

Mortar-based installation:
– In solid walls and ceiling slabs
– In non-load-bearing solid walls
  with flexible ceiling joint
– In lightweight partition walls and fire walls
  with metal support structure and cladding
  on both sides
– In shaft walls with or without metal support
  structure and with cladding on one side

Dry mortarless installation:
– In timber stud walls and half-timbered
  constructions with cladding on both sides
– In solid walls and ceiling slabs
  with installation block ER
– In solid walls and ceiling slabs using a fire batt
– In lightweight partition walls with metal support
  structure and cladding on both sides
  using a fire batt
– On the face of solid walls
  with wall face frame WA
– In lightweight partition walls and fire walls with
  metal support structure, cladding on both sides
  and flexible ceiling joint: with installation kit GL
– In lightweight partition walls with metal support
  structure or steel support structure and
  cladding on both sides: with installation kit TQ
– In fire walls with metal support structure and
  cladding on both sides with installation kit TQ
– In shaft walls with or without metal support
  structure and cladding on one side
  with installation kit ES
– Remote from solid walls and ceiling slabs
  (horizontal duct) and remote from lightweight
  partition walls: with installation kit WE
– In timber stud walls and half-timbered
  constructions with cladding on both sides:
  with installation kit TQ

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 functional tests, maintenance
  and inspection refer to the installation and
  operating manual

Technical data

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	-20 – 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; details for other applications
   are available on request
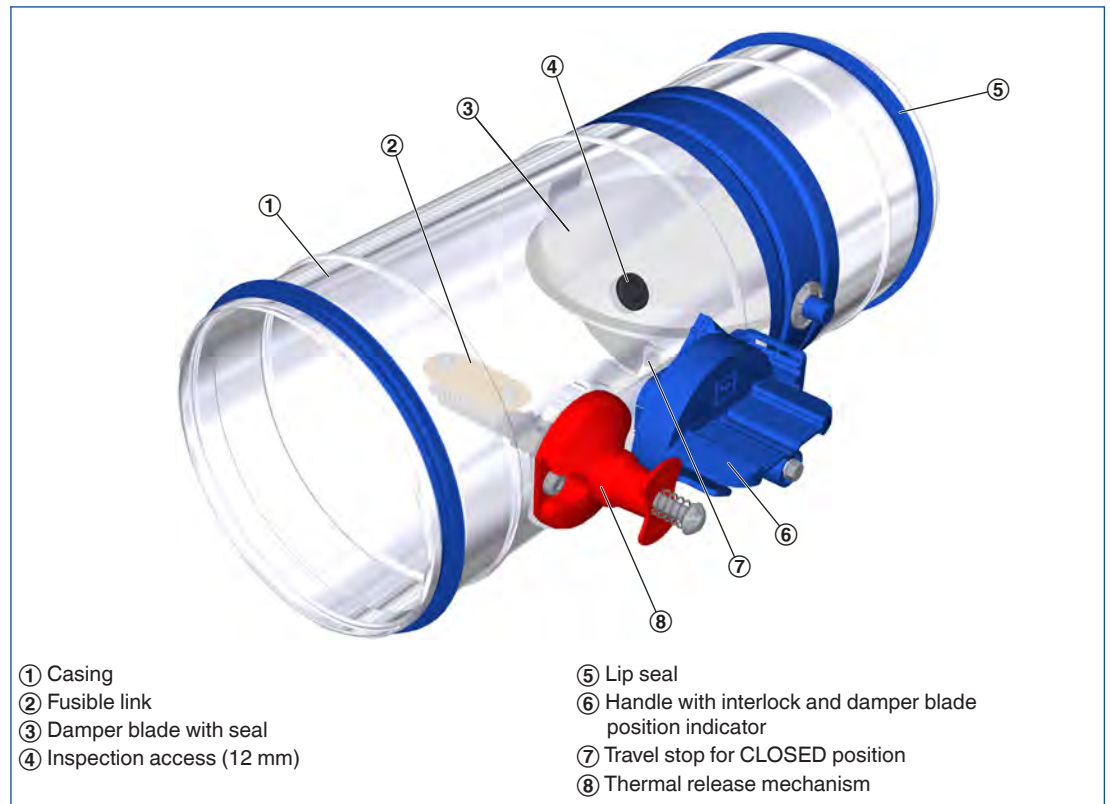
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Function

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.

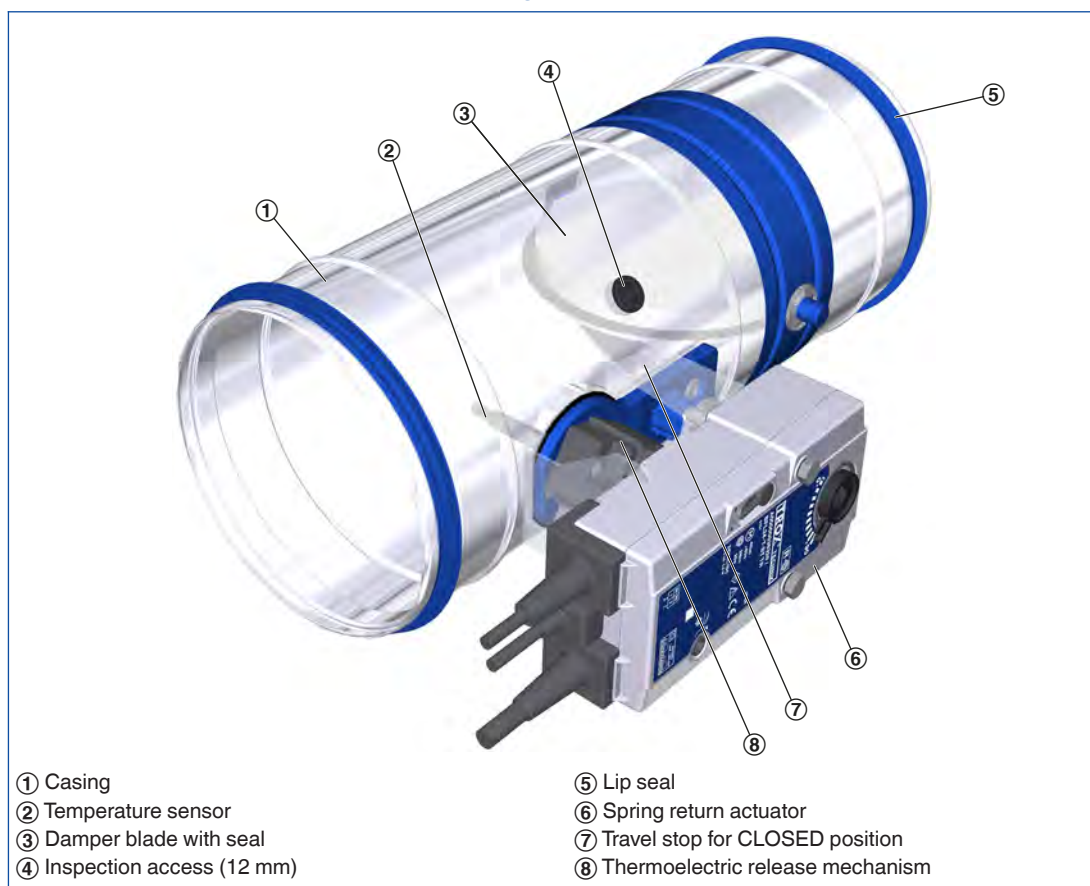**Schematic illustration of FKRS-EU with fusible link**

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 Travel stop for CLOSED position
⑧ Thermal release mechanism

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Function

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 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 Travel stop for CLOSED position
⑧ Thermoelectric release mechanism

Function

Construction
with spring return
actuator, explosion-proof

Functional description

The fire damper is used as a shut-off device to prevent fire and smoke from spreading through ducting in areas with potentially explosive atmospheres. The fire damper is suitable for supply air and extract air systems in potentially explosive atmospheres. For details on the operation of the fire damper refer to the operating and installation manual and the technical data in the supplementary operating manual (A00000042247).

Use in areas with potentially explosive atmospheres (ATEX)

According to declaration of conformity TÜV 14 ATEX 140574 X, the fire damper may be used in the following areas with potentially explosive atmospheres. The ambient temperatures and types of release and actuation specified in the technical data are binding.

RedMax:
– Zone 2: Gases, mists and vapours
– Zone 22: Dusts

ExMax:
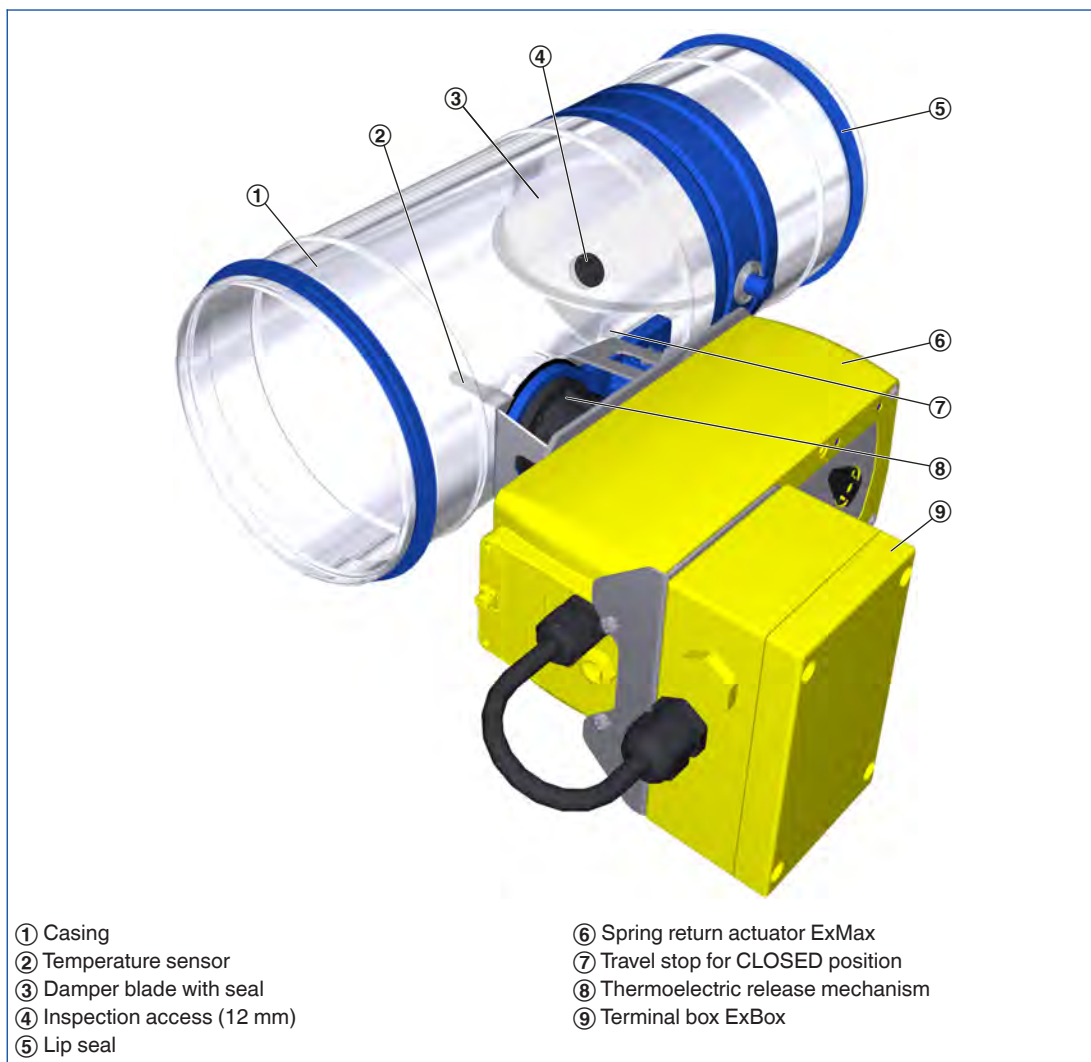– Zones 1, 2: Gases, mists and vapours
– Zones 21, 22: Dusts

ATEX certification

Type of actuation	Release mechanism	Marking	Ambient temperature	Maximum airflow velocity
ExMax-15-BF TR	ExPro-TT*	II 2D c T80 °C II 2G c IIC T6	–40 to 40 °C	10 m/s
RedMax-15-BF TR		II 3D c T80 °C II 3G c IIC T6		

* Release temperature: 72 °C

Schematic illustration of FKRS-EU with spring return actuator, explosion-proof construction (e.g. ExMax-15-BF TR)

① Casing
② Temperature sensor
③ Damper blade with seal
④ Inspection access (12 mm)
⑤ Lip seal
⑥ Spring return actuator ExMax
⑦ Travel stop for CLOSED position
⑧ Thermoelectric release mechanism
⑨ Terminal box ExBox

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Function

Use as an air transfer unit

Functional description

Air transfer units prevent fire and smoke from spreading in buildings. The thermal release mechanism closes the air transfer unit when the release temperature (72 °C) is reached. Smoke can, however, spread below this temperature. Air transfer units are installed (mortar-based installation) in places where the general building inspectorate sees no risk, for example:

– As an inlet for additional supply air in the walls of required corridors (escape routes) if the inlet is near the ground (centre line up to 500 mm above floor surface)
– In installation shafts as long as they have sufficient fire resistance where they penetrate compartment floors
– In installation ducts as long as they have sufficient fire resistance where they penetrate compartment floors or walls (except for necessary corridors or escape routes)

The air transfer unit is an FKRS-EU fire damper with 72 °C thermal release mechanism (construction with fusible link; limit switches as an option) and cover grilles both ends.
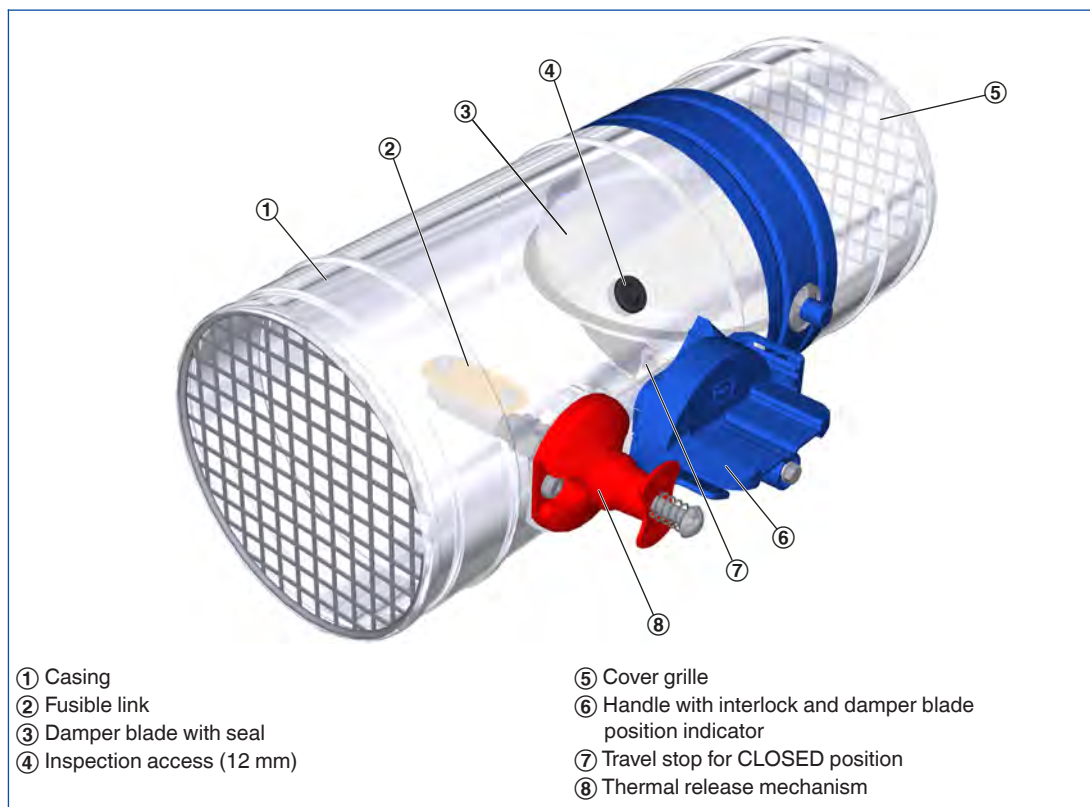
Special characteristics

– General building inspectorate licence Z-19.18-2128
– Air transfer unit without duct smoke detector

Note

– Approved only for internal walls
– Not to be connected to ducts in ventilation and air conditioning systems
– Not to be used with accessories ER, TQ, GL, WA or WE (Accessories 1)

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 Travel stop for CLOSED position
⑧ Thermal release mechanism

Design information
– Approved only for use in ventilation and air conditioning sytems
– If the fire damper is installed in a solid wall, solid ceiling slab, lightweight partition wall, timber stud wall or shaft wall with a lower fire resistance class than that of the fire damper, the fire resistance class of the wall or ceiling slab applies also to the FKRS-EU (details upon request)
– Loads imposed on the casing may impair the function of the fire damper. Install and connect the damper in such a way that no loads will be imposed on the installed damper.
– For particular applications it is recommended that flexible connectors are used to connect rigid ducting to the unit.
– For further information relevant to design, in particular information on installation situations, please refer to the operating and installation manual.

Incorrect use
Never use the fire damper

– without specially approved attachments in areas with potentially explosive atmospheres
– as a smoke control damper
– outdoors without sufficient protection against the effects of weather
– in atmospheres where chemical reactions, whether planned or unplanned, may cause damage to the fire damper or lead to corrosion
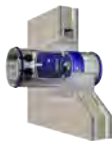
If this fire damper is used in Germany:
– Do not use it as an air transfer damper
– Use as an air transfer unit only in compliance with licence no. Z- 19.18-2128
– Do not use it in extract air systems in commercial kitchens
– A class of performance up to EI 120 (ve, ho, i ↔ o) S can only be achieved with ducts connected on both ends, or with a duct on one end and a cover grille on the other end.

Essential characteristic: fire resistance — size [mm]: Ø 100 to Ø 200				
Supporting construction	**Construction details**	**Installation location**	**Installation type**	**Performance class (EI TT) up to**
Solid wall	• d ≥ 100 mm • Coating or sleeve • Distance to load-bearing structural elements ≥ 40 mm	in the wall	Fire batt	EI 120 (v_e i↔o) S
Lightweight partition wall	• Metal stud wall • Gypsum bonded or cement bonded panel materials, fibre-reinforced gypsum or fire rated calcium silicate boards • d ≥ 98 mm • With mineral wool	in the wall	Mortar-based installation	EI 120 (v_e i↔o) S
	• Metal stud wall • Gypsum bonded or cement bonded panel materials, fibre-reinforced gypsum or fire rated calcium silicate boards • d ≥ 98 mm • With mineral wool • Installation block EQ	in the wall	Dry mortarless installation	EI 120 (v_e i↔o) S

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Essential characteristic: fire resistance — size [mm]: Ø 100 to Ø 200				
Supporting construction	**Construction details**	**Installation location**	**Installation type**	**Performance class (EI TT) up to**
 Lightweight partition wall	• Metal stud wall • Gypsum bonded or cement bonded panel materials, fibre-reinforced gypsum or fire rated calcium silicate boards • d ≥ 98 mm • With mineral wool • Coating or sleeve • Distance to load-bearing structural elements ≥ 40 mm	in the wall	Fire batt	EI 120 (v_e i↔o) S
	• Timber stud wall • Gypsum bonded or cement bonded panel materials, fibre-reinforced gypsum or fire rated calcium silicate boards • d ≥ 130 mm • Coating or sleeve	in the wall	Fire batt	EI 120 (v_e i↔o) S

Essential characteristic: fire resistance — size [mm]: Ø 100 to Ø 315				
Supporting construction	**Construction details**	**Installation location**	**Installation type**	**Performance class (EI TT) up to**
 Solid wall	• d ≥ 100 mm • Coating or sleeve • Distance between casings ≥ 40 mm • Distance to load-bearing structural elements ≥ 40 mm	in the wall	Fire batt	EI 90 (v_e i↔o) S
	• d ≥ 100 mm • Coating or two sleeves • Distance to load-bearing structural elements ≥ 40 mm	in the wall	Fire batt	EI 120 (v_e i↔o) S
	• d ≥ 100 mm • Installation block ER	in the wall	Dry mortarless installation	EI 90 (v_e i↔o) S
	• d ≥ 100 mm • Installation kit WA	on the face of the wall	Dry mortarless installation	EI 90 (v_e i↔o) S
	• d ≥ 100 mm • Installation kit WE • Cladding on 2, 3 or 4 sides	remote from the wall	Dry mortarless installation	EI 90 (v_e i↔o) S
	• d ≥ 100 mm • Distance between casings ≥ 40 mm • Distance to load-bearing structural elements ≥ 40 mm	in the wall	Mortar-based installation	EI 120 (v_e i↔o) S
 Lightweight partition wall	• Metal stud wall • Gypsum bonded or cement bonded panel materials, fibre-reinforced gypsum or fire rated calcium silicate boards • d ≥ 98 mm • Coating or two sleeves • Distance to load-bearing structural elements ≥ 40 mm	in the wall	Fire batt	EI 120 (v_e i↔o) S
	• Metal stud wall • Gypsum bonded or cement bonded panel materials, fibre-reinforced gypsum or fire rated calcium silicate boards • d ≥ 98 mm • Coating or sleeve • Distance between casings ≥ 40 mm • Distance to load-bearing structural elements ≥ 40 mm	in the wall	Fire batt	EI 90 (v_e i↔o) S

Essential characteristic: fire resistance — size [mm]: Ø 100 to Ø 315				
Supporting construction	**Construction details**	**Installation location**	**Installation type**	**Performance class (EI TT) up to**
  Lightweight partition wall	• Metal stud wall • Gypsum bonded or cement bonded panel materials, fibre-reinforced gypsum or fire rated calcium silicate boards • d ≥ 98 mm • With or without mineral wool • Distance between casings ≥ 40 mm • Distance to load-bearing structural elements ≥ 40 mm	in the wall	Mortar-based installation	EI 90 (v_e i↔o) S
	• Metal stud wall • Gypsum bonded or cement bonded panel materials, fibre-reinforced gypsum or fire rated calcium silicate boards • d ≥ 98 mm • Reinforcing board on both sides • With or without mineral wool	in the wall	Mortar-based installation	EI 120 (v_e i↔o) S
	• Metal stud wall • Gypsum bonded or cement bonded panel materials, fibre-reinforced gypsum or fire rated calcium silicate boards • d ≥ 98 mm • With or without mineral wool • Installation block EQ	in the wall	Dry mortarless installation	EI 90 (v_e i↔o) S
	• Metal stud wall • Gypsum bonded or cement bonded panel materials, fibre-reinforced gypsum or fire rated calcium silicate boards • d ≥ 98 mm • With mineral wool • Installation kit TQ • Distance to load-bearing structural elements ≥ 40 mm	in the wall	Dry mortarless installation	EI 90 (v_e i↔o) S
	• Metal stud wall with sheet steel insert, used as a fire wall, safety partition wall or to provide radiation protection • Gypsum bonded or cement bonded panel materials or fibre-reinforced gypsum • d ≥ 100 mm • With or without mineral wool • Distance to load-bearing structural elements ≥ 40 mm	in the wall	Mortar-based installation	EI 90 (v_e i↔o) S
	• Metal stud wall with sheet steel insert, used as a fire wall, safety partition wall or to provide radiation protection • Gypsum bonded or cement bonded panel materials or fibre-reinforced gypsum • d ≥ 100 mm • With mineral wool • Installation kit TQ • Distance to load-bearing structural elements ≥ 40 mm	in the wall	Dry mortarless installation	EI 90 (v_e i↔o) S
	• Metal stud wall with sheet steel as fire wall • Gypsum bonded or cement bonded panel materials or fibre-reinforced gypsum • d ≥ 100 mm • With or without mineral wool • Installation block EQ	in the wall	Dry mortarless installation	EI 90 (v_e i↔o) S
	• Metal stud wall • Gypsum bonded or cement bonded panel materials, fibre-reinforced gypsum or fire rated calcium silicate boards • d ≥ 80 mm • With or without mineral wool • Wall thickness increased to d ≥ 98 mm • Distance between casings ≥ 40 mm • Distance to load-bearing structural elements ≥ 40 mm	in the wall	Mortar-based installation	EI 30 (v_e i↔o) S

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Essential characteristic: fire resistance — size [mm]: Ø 100 to Ø 315				
Supporting construction	Construction details	Installation location	Installation type	Performance class (EI TT) up to
 Lightweight partition wall	• Metal stud wall • Gypsum bonded or cement bonded panel materials, fibre-reinforced gypsum or fire rated calcium silicate boards • d ≥ 75 mm • With or without mineral wool • Wall thickness increased to d ≥ 98 mm • Distance between casings ≥ 40 mm • Distance to load-bearing structural elements ≥ 40 mm	in the wall	Fire batt	EI 60 (v_e i↔o) S
	• Metal stud wall • Gypsum bonded or cement bonded panel materials, fibre-reinforced gypsum or fire rated calcium silicate boards • d ≥ 75 mm • With or without mineral wool • Wall thickness increased to d ≥ 98 mm • Installation kit TQ • Distance to load-bearing structural elements ≥ 40 mm	in the wall	Dry mortarless installation	EI 30 (v_e i↔o) S
	• Metal stud wall • Gypsum bonded or cement bonded panel materials, fibre-reinforced gypsum or fire rated calcium silicate boards • Flexible ceiling joint • d ≥ 100 mm • With or without mineral wool • Installation kit GL • Distance to load-bearing structural elements ≥ 50 mm	in the wall	Dry mortarless installation	EI 90 (v_e i↔o) S
	• Lightweight partition wall with metal support structure made of steel • Gypsum bonded or cement bonded panel materials or fibre-reinforced gypsum • d ≥ 98 mm • With or without mineral wool • Distance between casings ≥ 40 mm • Distance to load-bearing structural elements ≥ 40 mm	in the wall	Mortar-based installation	EI 90 (v_e i↔o) S
	• Lightweight partition wall with metal support structure made of steel • Gypsum bonded or cement bonded panel materials or fibre-reinforced gypsum • d ≥ 98 mm • With or without mineral wool • Installation kit TQ • Distance to load-bearing structural elements ≥ 40 mm	in the wall	Dry mortarless installation	EI 90 (v_e i↔o) S
	• Metal stud wall • Gypsum bonded or cement bonded panel materials, fibre-reinforced gypsum or fire rated calcium silicate boards • d ≥ 98 mm • With or without mineral wool • Cladding on 2, 3 or 4 sides • Installation kit WE	remote from the wall	Dry mortarless installation	EI 90 (v_e i↔o) S
	• Timber stud wall (also timber panel constructions and timber frames) • Gypsum bonded or cement bonded panel materials, fibre-reinforced gypsum or fire rated calcium silicate boards • d ≥ 130 mm • Distance to load-bearing structural elements ≥ 40 mm	in the wall	Mortar-based installation	EI 120 (v_e i↔o) S

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Essential characteristic: fire resistance — size [mm]: Ø 100 to Ø 315				
Supporting construction	Construction details	Installation location	Installation type	Performance class (EI TT) up to
 Lightweight partition wall	• Timber stud wall (also timber panel constructions and timber frames) • Gypsum bonded or cement bonded panel materials, fibre-reinforced gypsum or fire rated calcium silicate boards • d ≥ 130 mm • Distance between casings ≥ 40 mm • Distance to load-bearing structural elements ≥ 40 mm	in the wall	Mortar-based installation	EI 90 (v_e i↔o) S
	• Timber stud wall • Gypsum bonded or cement bonded panel materials, fibre-reinforced gypsum or fire rated calcium silicate boards • d ≥ 130 mm • Coating or two sleeves • Distance to load-bearing structural elements ≥ 40 mm	in the wall	Fire batt	EI 120 (v_e i↔o) S
	• Timber stud wall • Gypsum bonded or cement bonded panel materials, fibre-reinforced gypsum or fire rated calcium silicate boards • d ≥ 130 mm • Coating or sleeve • Distance between casings ≥ 40 mm • Distance to load-bearing structural elements ≥ 40 mm	in the wall	Fire batt	EI 90 (v_e i↔o) S
	• Timber stud wall (also timber panel constructions and timber frames) • Gypsum bonded or cement bonded panel materials, fibre-reinforced gypsum or fire rated calcium silicate boards • d ≥ 130 mm • Installation kit TQ • Distance to load-bearing structural elements ≥ 40 mm	in the wall	Dry mortarless installation	EI 120 (v_e i↔o) S
	• Timber stud wall (also timber panel constructions and timber frames) • Gypsum bonded or cement bonded panel materials, fibre-reinforced gypsum or fire rated calcium silicate boards • d ≥ 130 mm • Distance between casings ≥ 40 mm • Distance to load-bearing structural elements ≥ 40 mm	in the wall	Mortar-based installation	EI 30 (v_e i↔o) S
	• Timber stud wall (also timber panel constructions and timber frames) • Gypsum bonded or cement bonded panel materials, fibre-reinforced gypsum or fire rated calcium silicate boards • d ≥ 130 mm • Distance between casings ≥ 40 mm • Distance to load-bearing structural elements ≥ 40 mm	in the wall	Fire batt	EI 30 (v_e i↔o) S
	• Timber stud wall (also timber panel constructions and timber frames) • Gypsum bonded or cement bonded panel materials, fibre-reinforced gypsum or fire rated calcium silicate boards • d ≥ 130 mm • Installation kit TQ • Distance to load-bearing structural elements ≥ 40 mm	in the wall	Dry mortarless installation	EI 30 (v_e i↔o) S
	• Half-timbered wall • Gypsum bonded or cement bonded panel materials, fibre-reinforced gypsum or fire rated calcium silicate boards • d ≥ 140 mm • Distance between casings ≥ 40 mm • Distance to load-bearing structural elements ≥ 40 mm	in the wall	Mortar-based installation	EI 90 (v_e i↔o) S

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Essential characteristic: fire resistance — size [mm]: Ø 100 to Ø 315				
Supporting construction	**Construction details**	**Installation location**	**Installation type**	**Performance class (EI TT) up to**
Lightweight partition wall	• Half-timbered wall • Gypsum bonded or cement bonded panel materials, fibre-reinforced gypsum or fire rated calcium silicate boards • d ≥ 140 mm • Coating or sleeve • Distance between casings ≥ 40 mm • Distance to load-bearing structural elements ≥ 40 mm	in the wall	Fire batt	EI 90 (v_e i↔o) S
	• Half-timbered wall • Gypsum bonded or cement bonded panel materials, fibre-reinforced gypsum or fire rated calcium silicate boards • d ≥ 140 mm • Distance to load-bearing structural elements ≥ 40 mm • Installation kit TQ	in the wall	Dry mortarless installation	EI 90 (v_e i↔o) S
Shaft wall	• Metal support structure or steel support structure • Gypsum bonded or cement bonded panel materials, fibre-reinforced gypsum or fire rated calcium silicate boards • Cladding on one side • d ≥ 90 mm • Distance to load-bearing structural elements ≥ 40 mm	in the wall	Mortar-based installation	EI 90 (v_e i↔o) S
	• Metal support structure or additional safety board • Gypsum bonded or cement bonded panel materials, fibre-reinforced gypsum or fire rated calcium silicate boards • Cladding on one side • With reinforcing board • d ≥ 90 mm • Distance to load-bearing structural elements ≥ 40 mm	in the wall	Mortar-based installation	EI 30 (v_e i↔o) S
	• Metal support structure • Gypsum bonded or cement bonded panel materials, fibre-reinforced gypsum or fire rated calcium silicate boards • Cladding on one side • d ≥ 90 mm • Installation block EQ	in the wall	Dry mortarless installation	EI 90 (v_e i↔o) S
	• Metal support structure • Gypsum bonded or cement bonded panel materials, fibre-reinforced gypsum or fire rated calcium silicate boards • Cladding on one side • d ≥ 90 mm • Installation kit TQ	in the wall	Dry mortarless installation	EI 90 (v_e i↔o) S
	• Without metal support structure • Gypsum bonded or cement bonded panel materials, fibre-reinforced gypsum or fire rated calcium silicate boards • Cladding on one side • d ≥ 50 mm • Installation kit TQ	in the wall	Dry mortarless installation	EI 90 (v_e i↔o) S
Solid ceiling slab	• d ≥ 100 mm • Distance between casings ≥ 45 mm • Distance to load-bearing structural elements ≥ 40 mm	in the ceiling	Mortar-based installation	EI 120 (h_o i↔o) S
	• d ≥ 100 mm • Installation block ER	in the ceiling	Dry mortarless installation	EI 90 (h_o i↔o) S
	• d ≥ 100 mm • Coating or sleeve	in the ceiling	Fire batt	EI 90 (h_o i↔o) S

Essential characteristic: fire resistance — size [mm]: Ø 100 to Ø 315				
Supporting construction	**Construction details**	**Installation location**	**Installation type**	**Performance class (EI TT) up to**
Solid ceiling slab	• d ≥ 100 mm • Coating or two sleeves	in the ceiling	Fire batt	EI 120 (h_o i↔o) S
	• Combined with wooden beam ceilings • Concrete bed, d ≥ 150 mm • Distance between casings ≥ 45 mm • Distance to load-bearing structural elements ≥ 40 mm	in the ceiling	Mortar-based installation	EI 90 (h_o i↔o) S
	• Combined with suspended ceiling systems (Cadolto system) • Concrete bed, d ≥ 150 mm • Distance between casings ≥ 45 mm • Distance to load-bearing structural elements ≥ 40 mm	in the ceiling	Mortar-based installation	EI 120 (h_o i↔o) S
	• d ≥ 100 mm • Below the ceiling, with horizontal duct • Perimeter gap filled with mortar or mineral wool • Cladding on 2, 3 or 4 sides • Installation kit WE	remote from the ceiling	Dry mortarless installation	EI 90 (h_o i↔o) S

Order code

FKRS-EU

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, RAL 7001
2   Stainless steel casing
7   Coated damper blade
1 – 7 Powder-coated casing, RAL 7001,
        and coated damper blade
2 – 7 Stainless steel casing
        and coated damper blade
W[1]   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
WE   Installation kit for installation remote
        from walls and ceilings

[6] **Accessories 2**
   No entry: none
A0 – AS

[7] **Attachments**
Z00 – ZEX4

[1] W can be combined with all constructions
  listed under [2], but not with attachments
  [7] ZEX1 - ZEX4

Order example

FKRS-EU-2-7/DE/200/TQ/SS/ZL09

Variant	Casing made of stainless steel, damper blade coated
Country of destination	Germany
Nominal size	200 mm
Installation kit	Square
Accessories	Flexible connector on operating and installation sides
Attachment	Spring return actuator 24 V AC/DC and LON module LON-WA1/B3

1

Order code

FKRS-EU as an air transfer unit

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, RAL 7001
7　　Coated damper blade
1 – 7　Powder-coated casing, RAL 7001,
　　　　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

Order example

FKRS-EU-1/DE/200/AA/Z03

Variant	Casing powder-coated, RAL 7001, silver grey
Country of destination	Germany
Nominal size	200 mm
Accessories 1	Without
Accessories 2	Cover grilles on both ends
Attachment	Limit switches for damper blade positions OPEN and CLOSED

1

Description

/ **ER** /
⎯⎯
[5]
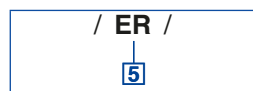
Order code detail

Application
– Circular installation block ER for dry mortarless installation into solid walls and ceiling slabs
– Installation openings can be created using a commercially available core drill
– The unit is installed without a mortar mix by simply inserting it into the prepared installation opening
– The installation block is factory mounted to the fire damper
– In the event of a fire the intumescent seal closes the remaining gap.
– A cover plate conceals any gaps and is used for screw fixing

Materials and surfaces
– The installation block is sheet steel with a special sealing compound
– Cover plate and casing of the installation block made of galvanised sheet steel (and powder-coated silver grey, RAL 7001, when used with powder-coated (1) and stainless steel (2) dampers)

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

Accessories 1	Order code
Circular installation block	ER

Technical data

Weight [kg] of FKRS-EU with fusible link and installation block

Nominal size	100	125	150	160	180	200	224	250	280	315
Installation block ER	5.7	8.6	7.6	7.3	11	9.8	13.5	12.1	16.0	15.0

FKRS-EU with spring return actuator: weight +1.2 kg.

Installation opening/cover plate dimensions [mm]

Nominal size	100	125	150	160	180	200	224	250	280	315
ØD1	200	250	250	250	300	300	350	350	400	400
□B	250	300	300	300	350	350	400	400	450	450

FKRS-EU with circular installation block ER

① Installation block
② Seal
③ Cover plate
④ Solid wall

Description

/ **TQ** /
|
5
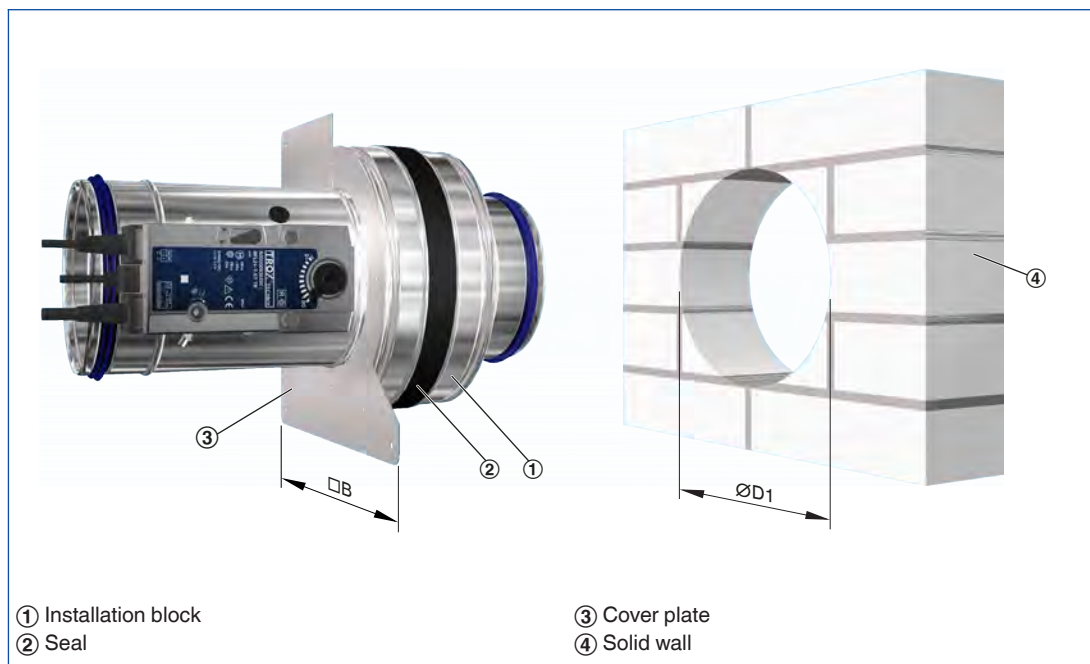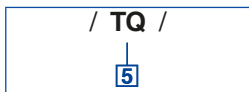
Order code detail

Application
– Square dry mortarless installation kit TQ for dry mortarless installation into lightweight partition walls and fire walls with metal support structure and cladding on both sides, into timber stud walls and half-timbered constructions, and into shaft walls with or without metal support structure
– The installation kit is factory mounted to the fire damper
– The unit is installed without a mortar mix by simply inserting it into the prepared installation opening
– In the event of a fire the intumescent seal closes the remaining gap.
– A cover plate conceals any gaps and is used for screw fixing

Materials and surfaces
– Installation kit made of calcium silicate
– Cover plate of the installation kit made of galvanised sheet steel (and powder-coated silver grey, RAL 7001, when used with powder-coated (1) and stainless steel (2) dampers)

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

Accessories 1	Order code
Square installation kit	TQ

Technical data

Weight [kg] of FKRS-EU with fusible link and installation kit

Nominal size	100	125	150	160	180	200	224	250	280	315
Installation kit TQ	5.4	6.1	7.0	7.9	8.8	9.7	10.6	12.0	13.7	15.8

FKRS-EU with spring return actuator: weight +1.2 kg.

Installation opening/cover plate dimensions [mm]

Nominal size	100	125	150	160	180	200	224	250	280	315
□A	210	235	260	270	290	310	334	360	390	425
□B1	300	325	350	360	380	400	424	450	480	515

FKRS-EU with square installation kit TQ

① Installation kit
② Seal
③ Cover plate
④ Lightweight partition wall or shaft wall

1

Description

/ **GL** /
|
5
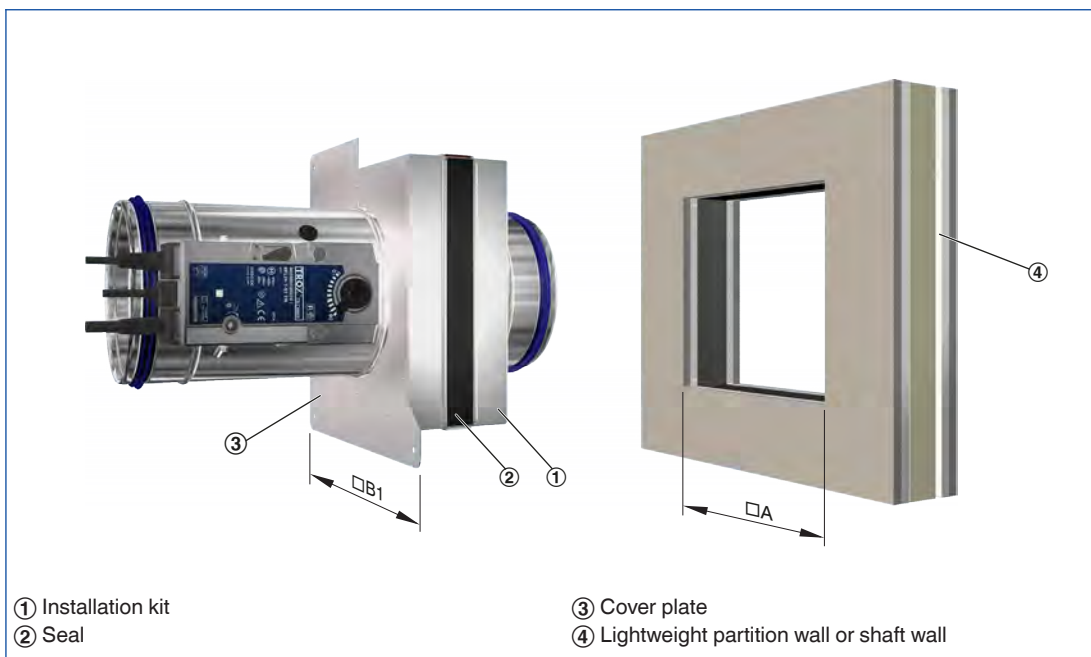
Order code detail

Application

– Dry mortarless installation in lightweight
  partition walls, fire walls and safety partition
  walls with metal support structure, cladding
  on both sides, and with flexible ceiling joint
  directly underneath solid ceiling slabs,
  requires an installation kit
– The installation kit allows for subsidence
  of the slab whilst maintaining sealing integrity
  around the fire damper
– Distance between ceiling and installation kit
  may be 0 – 180 mm
  (filler strips to be provided by others)
– The installation kit is factory mounted
  and can be fixed to the ceiling
  with the supplied fixing brackets
– The installation kit can be adapted to different
  wall thicknesses using cut-to-size fire-rated
  plasterboard panels

Materials and surfaces

– Installation kit made
  of special insulation material
– Fixing brackets made of galvanised sheet steel
– Threaded rods made of galvanised steel
– Fixing elements made of galvanised steel

Note

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

Installation kit for lightweight partition walls with flexible ceiling joint

Wall thickness [mm]	Order code
≥ 100[1]	GL

[1] The installation kit can be adapted to the wall thickness (by others)

Technical data

Weight [kg] of FKRS-EU with fusible link and installation kit

Nominal size	100	125	150	160	180	200	224	250	280	315
Installation kit GL	4.4	5.2	6.1	6.6	7.4	8.2	9.0	10.2	11.7	13.6

FKRS-EU with spring return actuator: weight +1.2 kg.

FKRS-EU with installation kit GL (installation close to the ceiling)

Installation kit GL, consisting of:
① Installation kit

② Fixing bracket
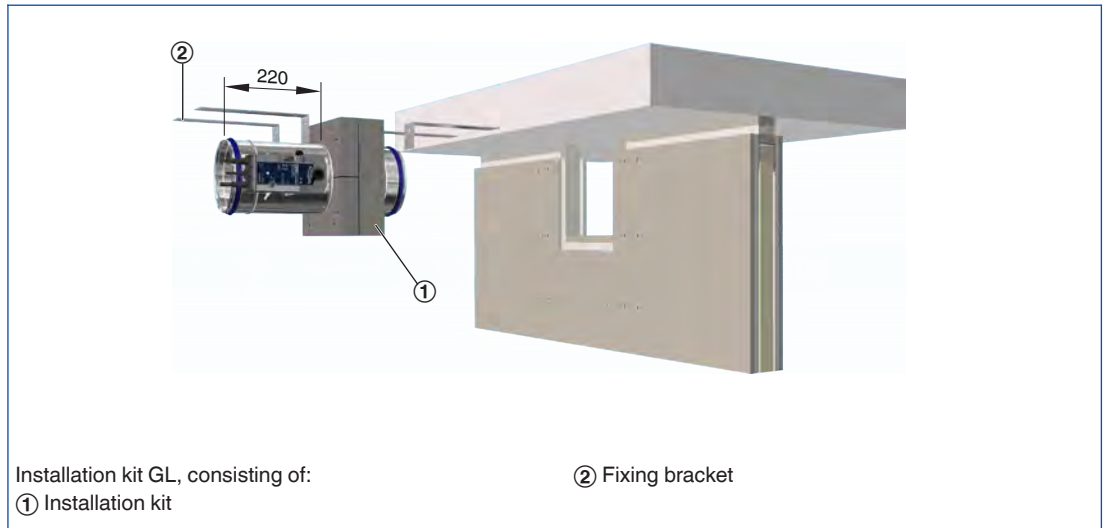
FKRS-EU with installation kit GL (installation close to the ceiling, 180 mm max. distance)

Installation kit GL, consisting of:
① Installation kit

② Fixing bracket

1

Description

/ **WA** /

5
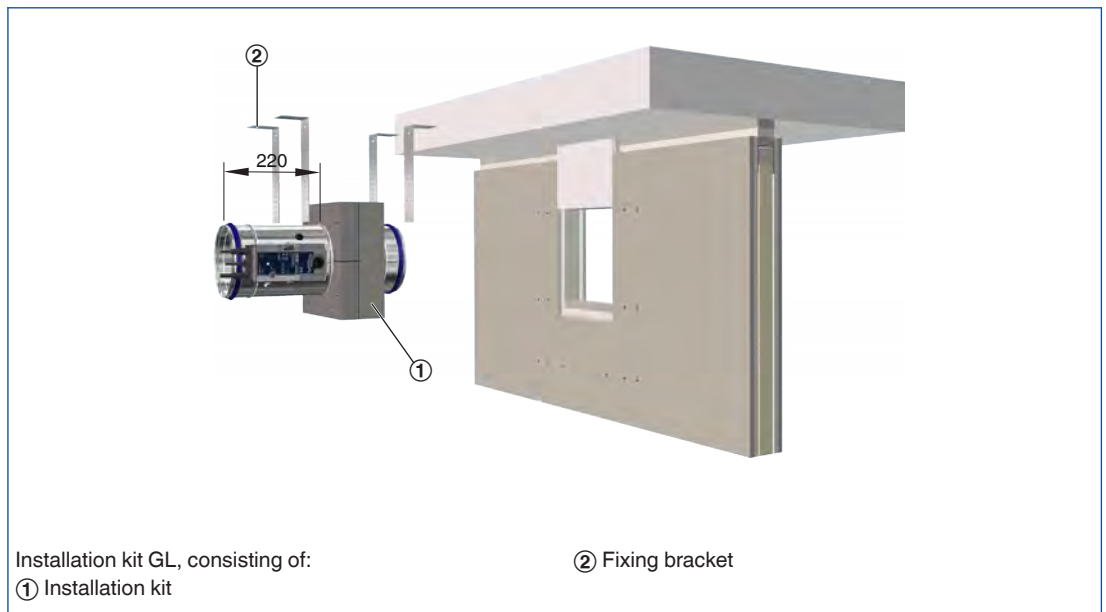
Order code detail

Application
– Dry mortarless installation of FKRS-EU
fire dampers on the face of solid walls
requires a wall face frame
– The wall face frame is factory
mounted to the fire damper
– The wall face frame is installed without a mortar
mix by fixing it either to the wall, in front of the
installation opening, or to a duct that has been
mortared in and provided with reinforcement
strips (by others) made of panel material
or mineral wool
– The wall face frame is fixed
with suitable screws and anchors
(with suitability certificate for fire resistance)
– Instead of anchors, threaded rods can be used
(push through installation).

Materials and surfaces
– Wall face frame made of calcium silicate

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

Accessories 1	Order code
Wall face frame	WA

Technical data

Weight [kg] of FKRS-EU with fusible link and wall face frame

Nominal size	100	125	150	160	180	200	224	250	280	315
Wall face frame WA	4.4	5.2	6.1	6.6	7.4	8.2	9.0	10.2	11.7	13.6

FKRS-EU with spring return actuator: weight +1.2 kg.

Dimensions [mm] of installation opening/wall face frame

Nominal size	100	125	150	160	180	200	224	250	280	315
ØD2[1]	130	155	180	190	210	230	254	280	310	345
□B2	200	225	250	260	280	300	324	350	380	415

[1] Tolerance limits: –20 mm/+2 mm

FKRS-EU with wall face frame WA
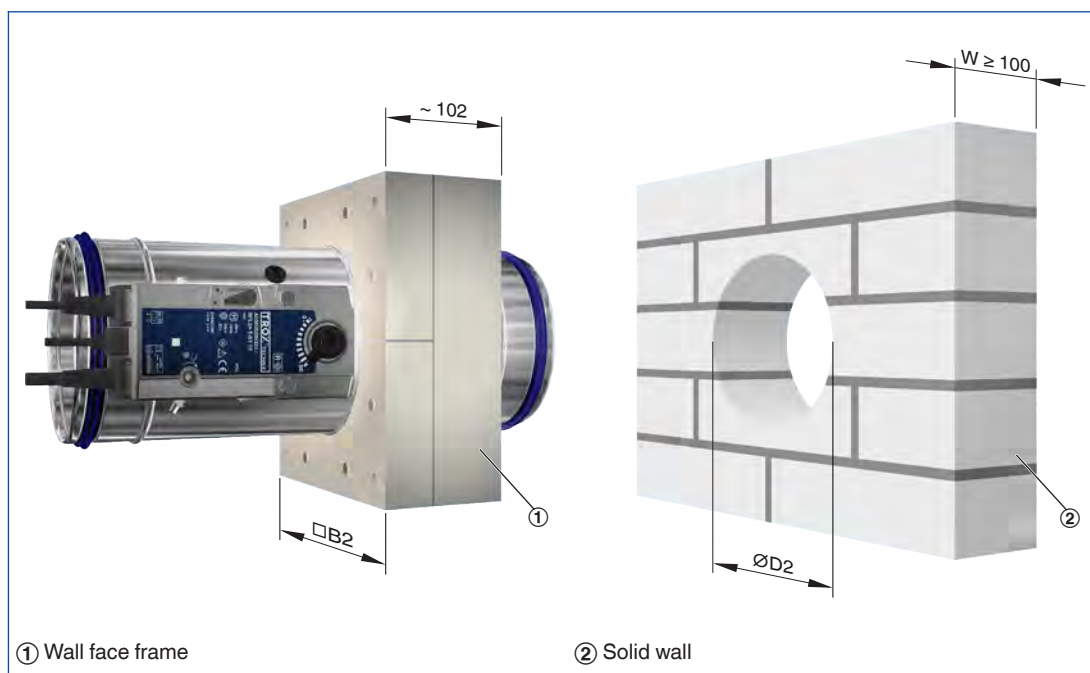
① Wall face frame   ② Solid wall

Description

/ WE /
5

Order code detail

Application

– Dry mortarless installation remote from solid walls or ceiling slabs (below the ceiling, with horizontal duct) or remote from lightweight partition walls with cladding on both sides requires an installation kit
– The installation kit is factory mounted to the fire damper
– Assembly and installation by others; required parts to be provided by others
– Installation and securing of the fire damper and the fire-resistant cladding of the sheet steel duct, the connection to the solid wall or ceiling slab, and the duct penetration through solid walls or lightweight partition walls with cladding on both sides have to be carried out according to the fire damper operating and installation manual and the WE installation manual

Materials and surfaces

– Installation kit made of calcium silicate

Note

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

Technical data

Weight [kg] of FKRS-EU with fusible link and installation kit

Nominal size	100	125	150	160	180	200	224	250	280	315
Installation kit WE	4.4	5.2	6.1	6.6	7.4	8.2	9.0	10.2	11.7	13.6

FKRS-EU with spring return actuator: weight +1.2 kg.

Installation kit dimensions [mm]

Nominal size	100	125	150	160	180	200	224	250	280	315
□B2	200	225	250	260	280	300	324	350	380	415

FKRS-EU with installation kit WE

① Installation kit WE (factory assembled)
② Fire-resistant cladding
③ Solid wall or lightweight partition wall

1
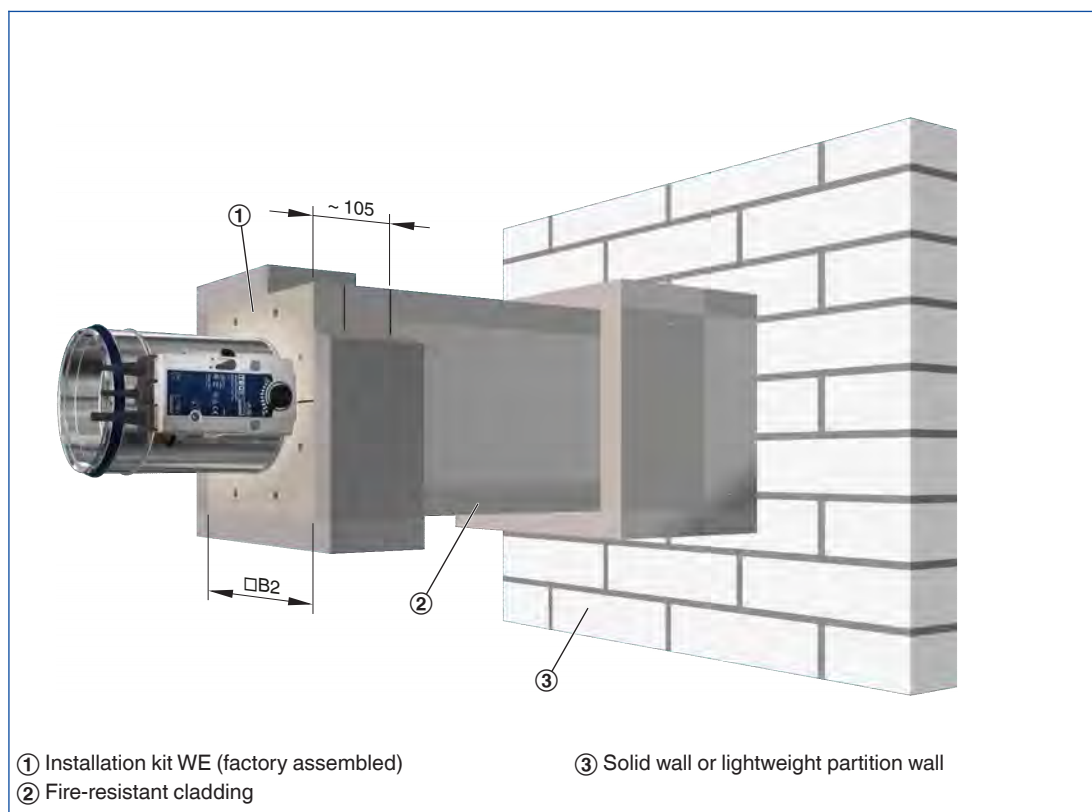
Description

FKRS-EU cover grille
with extension piece

Application
– If only one end is to be ducted on site,
  the other end must have a cover grille
– To ensure that the open damper blade
  is contained within the damper casing on the
  installation side, an extension piece is required
  for nominal size 224 and above
– 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%
– Fire dampers with cover grilles or flexible
  connectors are supplied without lip seals
– Cover grilles are also available separately
– Cover grilles both ends may be used in
  Germany only for air transfer dampers with
  general building inspectorate licence, or as an
  air transfer unit, e.g. FKRS-EU with general
  building inspectorate licence no. Z-19.18-2128

Materials and surfaces
– Cover grilles made of galvanised sheet steel
  (and powder-coated silver grey, RAL 7001,
  when used with powder-coated (1)
  and stainless steel (2) dampers)
– Extension piece same as casing

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

```
/ A0 /
/ 0A /
/ AS /
/ SA /
/ AA /
  |
 6
```

Order code detail

Cover grille for FKRS-EU

Operating side	Installation side	Order code
Cover grille	–	A0
–	Cover grille	0A
Cover grille	Flexible connector	AS
Flexible connector	Cover grille	SA
Cover grille	Cover grille	AA

Note: AA for FKRS-EU as air transfer unit

The distance »a«
between the open damper
blade and the spigot
should be approx. 50 mm.

Cover grille
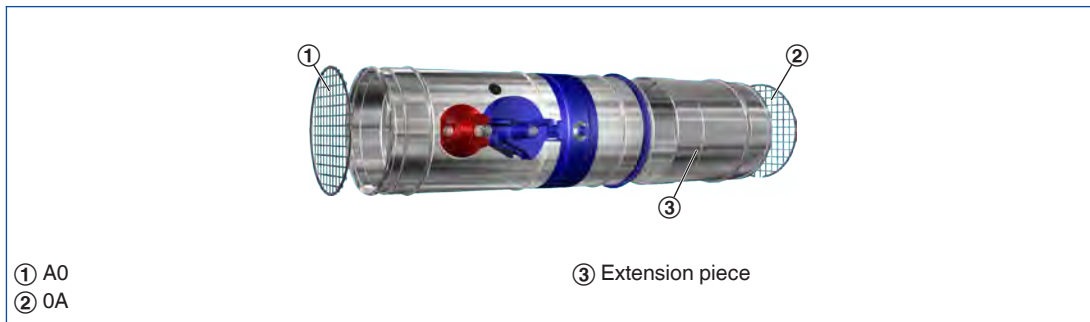
① A0
② 0A

③ Extension piece

Cover grille
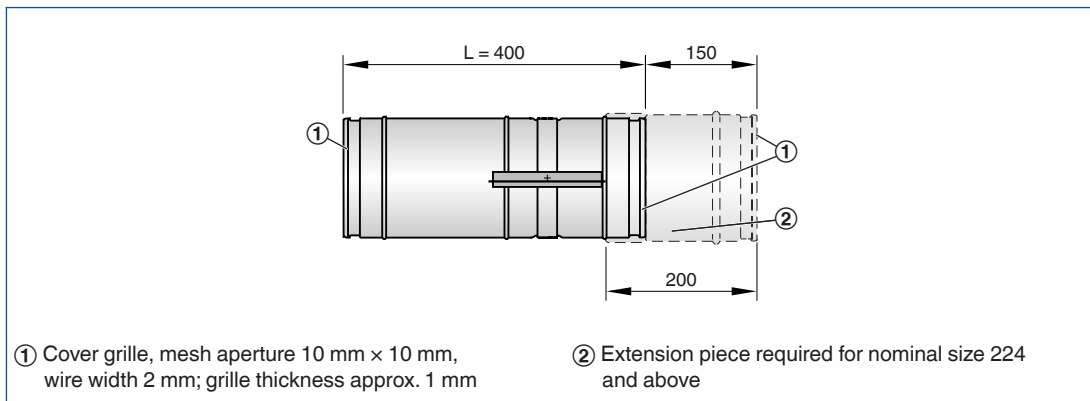
① Cover grille, mesh aperture 10 mm × 10 mm,
  wire width 2 mm; grille thickness approx. 1 mm

② Extension piece required for nominal size 224
  and above

Description
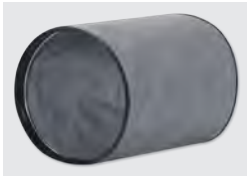
Flexible connector
for FKRS-EU

Application

– For information on how to limit such loads please refer to the guideline regarding fire protection requirements on ventilation systems (Lüftungsanlagen-Richtlinie, LüAR)
– As ducts may expand and walls may become deformed in the event of a fire, we recommend for the following applications using flexible connectors when connecting the fire damper to rigid ducts: installation into lightweight partition walls, into lightweight shaft walls, installation with a fire batt, and installation into lightweight fire walls.
– Flexible connectors should be installed in such a way that both ends can compensate both tension and compression
– Flexible ducts can be used as an alternative
– To ensure that the open damper blade is contained within the damper casing on the installation side, an extension piece is required for nominal size 224 and above
– Flexible connectors are supplied separately and can be fixed with clamps, for example (by others)
– Flexible connectors are also available separately

Materials and surfaces

– Flexible connectors made of fibre-reinforced plastic
– Fire resistance properties to 4102; B2

Note

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

```
/ S0 /
/ 0S /
/ SS /
/ SA /
/ AS /
   6
```
Order code detail

Flexible connector for FKRS-EU

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

① Flexible connector   ② Extension piece

1

The distance »a« between the open damper blade and the flexible connector should be approx. 50 mm.

Up to nominal size 200/from nominal size 224

~ 190*   L = 400   ~ 190*

215   215

~ 190   L = 400   ~ 340

215   ~ 390

① Flexible connector
② Extension piece

* flexible length ≥ 100 mm when installed

Flexible connector

215

ØD   ØD

~ 200*

* flexible length ≥ 100 mm when installed
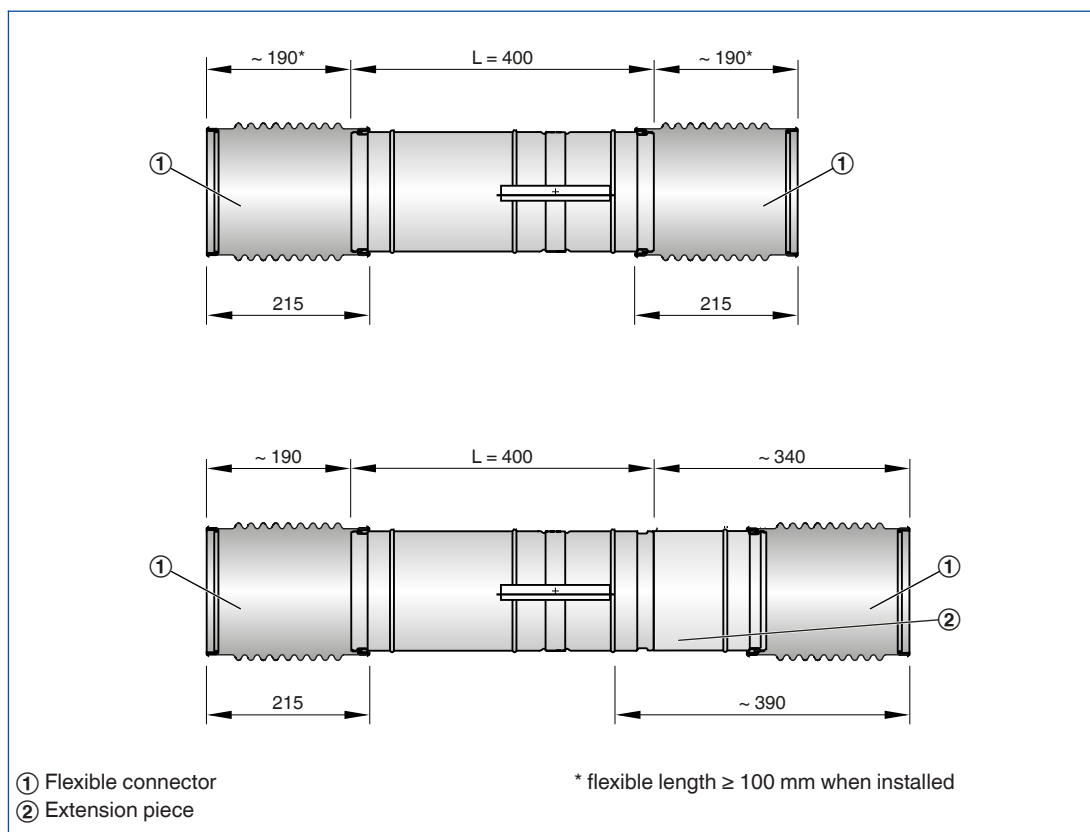
Description

FKRS-EU extension piece, circular

Application
– Fire dampers from nominal size 224 ordered with flexible connector or cover grille are supplied including extension piece on the installation side
– Extension pieces are also available separately

Materials and surfaces
– Extension piece made of galvanised sheet steel (and powder-coated silver grey, RAL 7001, when used with powder-coated (1) and stainless steel (2) dampers)
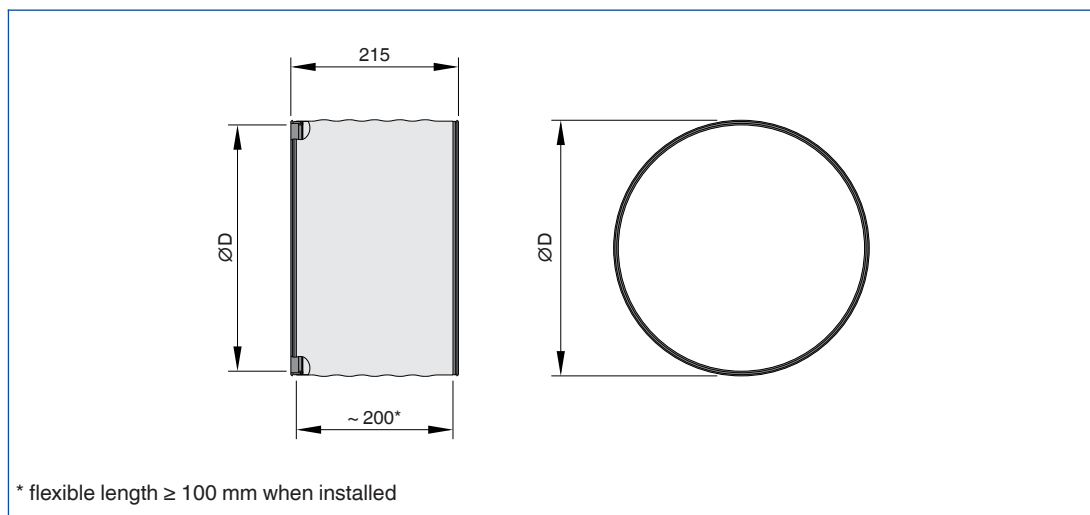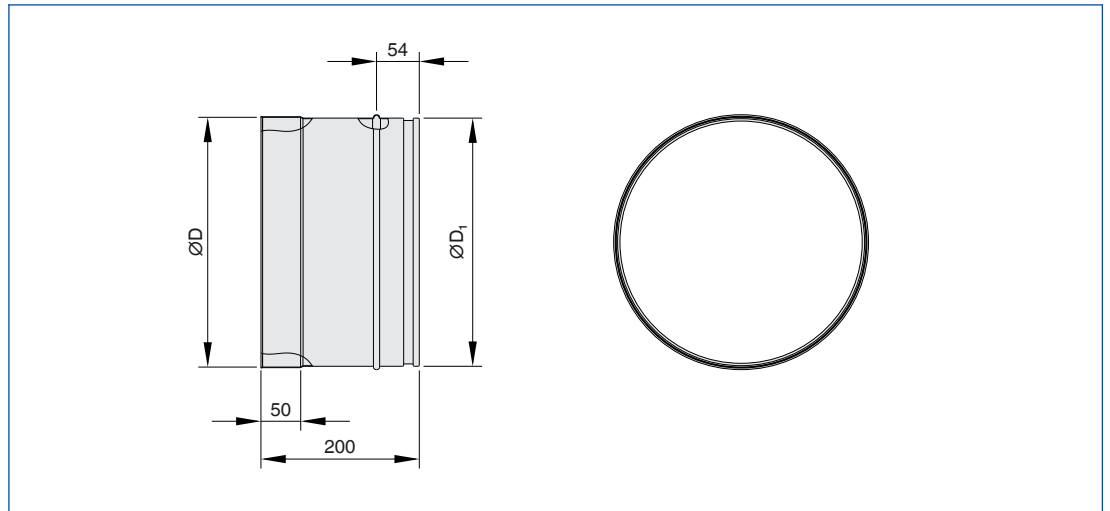
Installation and commissioning
– The distance »a« between the open damper blade and the cover grille or circular spigot should be approx. 50 mm

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

Extension piece

1

Description

Limit switch

For detailed information on limit switches see Chapter 1.2

FKRS-EU with limit switch
– Limit switches with volt-free contacts enable the damper blade position indication.
– 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 with one or two limit switches; the switches can also be fitted later
– For technical data and wiring examples refer to the additional technical leaflet 'Attachments for fire dampers'

```
/ Z01
/ Z02
/ Z03
    7
```

Order code detail

Attachments	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

Description

FKRS-EU with spring return actuator

For detailed information on the spring return actuator see Chapter 1.2

FKRS-EU with spring return actuator
– An open/close 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)
– Fire dampers with spring return actuators can be functionally checked OPEN/CLOSED/OPEN
– Ambient temperature of the actuator, normal operation –30 to 50 °C
– Two integral limit switches with volt-free contacts enable the damper blade position indication (OPEN and CLOSED)
– The connecting cables of the 24 V spring return actuator are fitted with plugs, which ensure quick and easy connection to the TROX AS-i bus system
– A conversion kit is available for adding an actuator to the standard construction
– In case of conventional wiring (Z45) the voltage must be supplied by a safety transformer
– For technical data and wiring examples refer to the additional technical leaflet 'Attachments for fire dampers'

/ **Z43**
/ **Z45**
|
7

Order code detail

Attachments	Order code
Spring return actuator BFL230-T TR, 230 V	Z43
Spring return actuator BFL24-T-ST TR, 24 V	Z45

Description

FKRS-EU with spring return actuator (explosion-proof)

For detailed information on the spring return actuator see Chapter 1.2

FKRS-EU with explosion-proof spring return actuator
– An open/close actuator allows for the remote control of the fire damper and/or release by a suitable duct smoke detector
– The fire damper can be used in supply and extract air systems in areas with potentially explosive atmospheres
– If the supply voltage fails, or with thermoelectric release, the damper closes (power off to close)
– Fire dampers with spring return actuators can be functionally checked OPEN/CLOSED/OPEN
– Two integral limit switches with volt-free contacts enable the damper blade position indication (OPEN and CLOSED)
– The electrical connection is made in the explosion-proof terminal box
– Release temperature of the spring return actuator is 72 °C
– Declaration of conformity: TÜV 14 ATEX 140574 X
– For technical data and wiring examples refer to the supplementary technical leaflet 'Attachments for fire dampers' and to the supplementary operating manual 'Explosion-proof fire dampers, Type FKRS-EU'.

/ **ZEX1**
/ **ZEX3**
|
7

Order code detail

Attachments	Order code
ExMax-15-BF TR	ZEX1
RedMax-15-BF TR	ZEX3

ATEX certification

ATEX areas of application

Attachments	Release mechanism	Marking	Ambient temperature
ExMax-15-BF TR	ExPro-TT	II 2D c T80 °C II 2G c IIC T6	–40 to 40 °C
RedMax-15-BF TR		II 3D c T80 °C II 3G c IIC T6	

1

Description

FKRS-EU with TROXNETCOM module

For detailed information on TROXNETCOM see Chapter 6

FKRS-EU with spring return actuator and TROXNETCOM
– Fire dampers with a 24 V spring return actuator 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 different components (modules) into a network regardless of the manufacturer
– The modules control actuators and/or receive signals from sensors

Application
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 two fire dampers
– LON-WA1/B2-AD: Connection box for connecting the second fire damper with 24 V DC supply voltage to LON-WA1/B2-AD

– LON-WA1/B2-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/B2

AS-i:
– The 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 voltage (24 V DC) for the module and the actuator is supplied via the two-wire AS-i flat cable
– Function display: operation, 4 inputs, 2 outputs

/ **ZL07**
/ **ZL08**
/ **ZL09**
/ **ZA07**

7

Order code detail

Attachments	Order code
LON-WA1/B2-AD and 24 V spring return actuator BFL24-T-ST TR	ZL07
LON-WA1/B2-AD230 and 24 V spring return actuator BFL24-T-ST TR	ZL08
LON-WA1/B3 and 24 V spring return actuator BFL24-T-ST TR	ZL09
AS-EM and 24 V spring return actuator BFL24-T-ST TR	ZA07

Description

ATEX certification

FKRS-EU with spring return actuator (explosion-proof) and TROXNETCOM
– The AS interface is a global standard bus system according to EN 50295 and IEC 62026-2
– It enables the integration of different components (modules) into a network regardless of the manufacturer
– The fire dampers with spring return actuator ExMax/RedMax-15-BF-TR and module AS-EM/C form a functional unit ready for automatic operation.
– The modules control actuators and/or receive signals from sensors
– The module is to be installed and wired outside of the potentially explosive atmosphere by others

Application
– 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 voltage (24 V DC) for the module is supplied via the two-wire AS-i flat cable; the voltage for the actuator comes from an external power source
– Function display: operation, 4 inputs, 2 outputs

/ **ZEX2**
/ **ZEX4**

7

Order code detail

Attachments	Order code
AS-Interface module and ExMax-15-BF TR	ZEX2
AS-Interface module and RedMax-15-BF TR	ZEX4

1

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

L_{WA} [dB(A)]	25	35	45	25	35	45
Nominal size	$\dot{V}$					
mm	l/s			m³/h		
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.
The Easy Product Finder is available on our website

1

Nominal size	A [m²]	ζ
100	0.005	1.71
125	0.009	1.08
150	0.013	0.76
160	0.016	0.67
200	0.025	0.44
224	0.032	0.56
250	0.040	0.45
280	0.052	0.36
315	0.067	0.28

Maximum upstream velocity: ≤ 8 m/s for standard construction, ≤ 10 m/s for construction with spring return actuator.

1

Dimensions

FKRS-EU with fusible link

FKRS-EU with fusible link
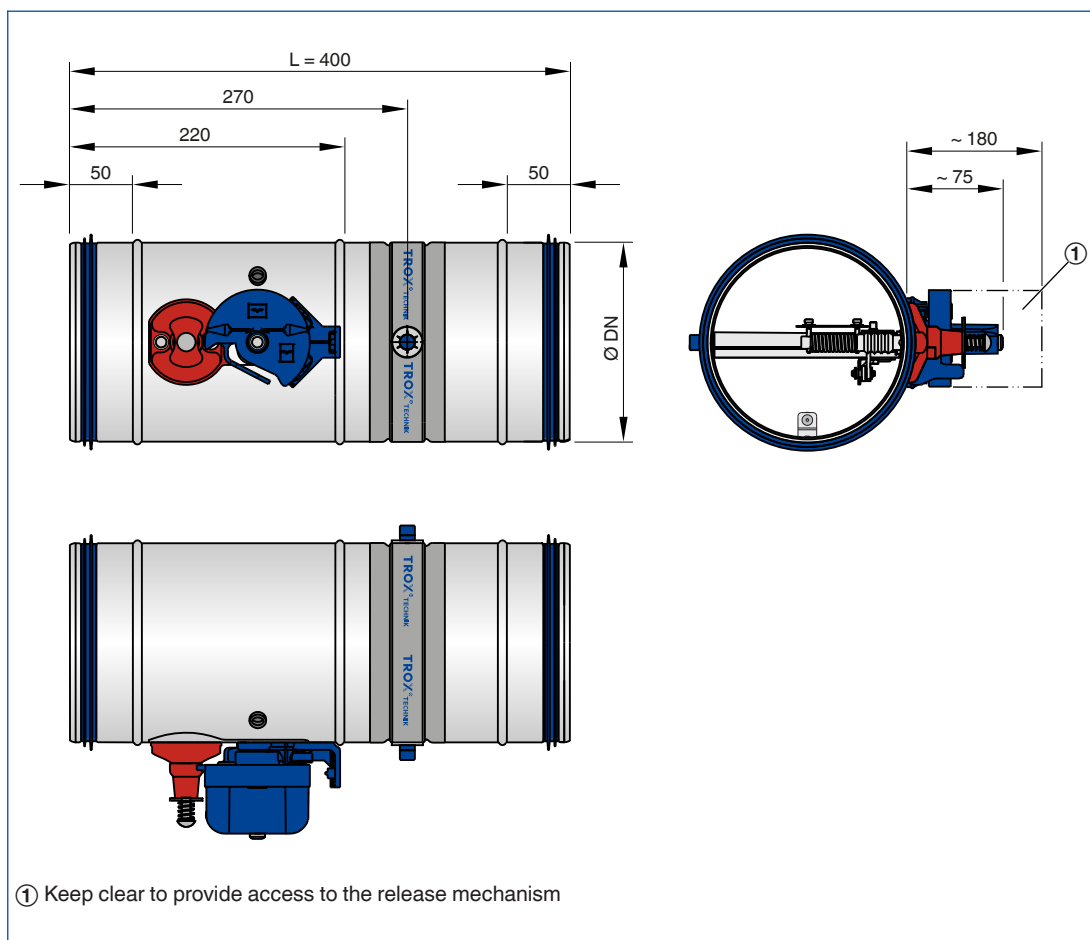
① Keep clear to provide access to the release mechanism

Dimensions [mm] / Weight [kg]

Nominal size	100	125	150	160	180	200	224	250	280	315
ØD	99	124	149	159	179	199	223	249	279	314
Weight	1.3	1.6	1.8	2	2.3	2.5	2.7	3.3	3.8	4.4

Dimensions

FKRS-EU with spring
return actuator
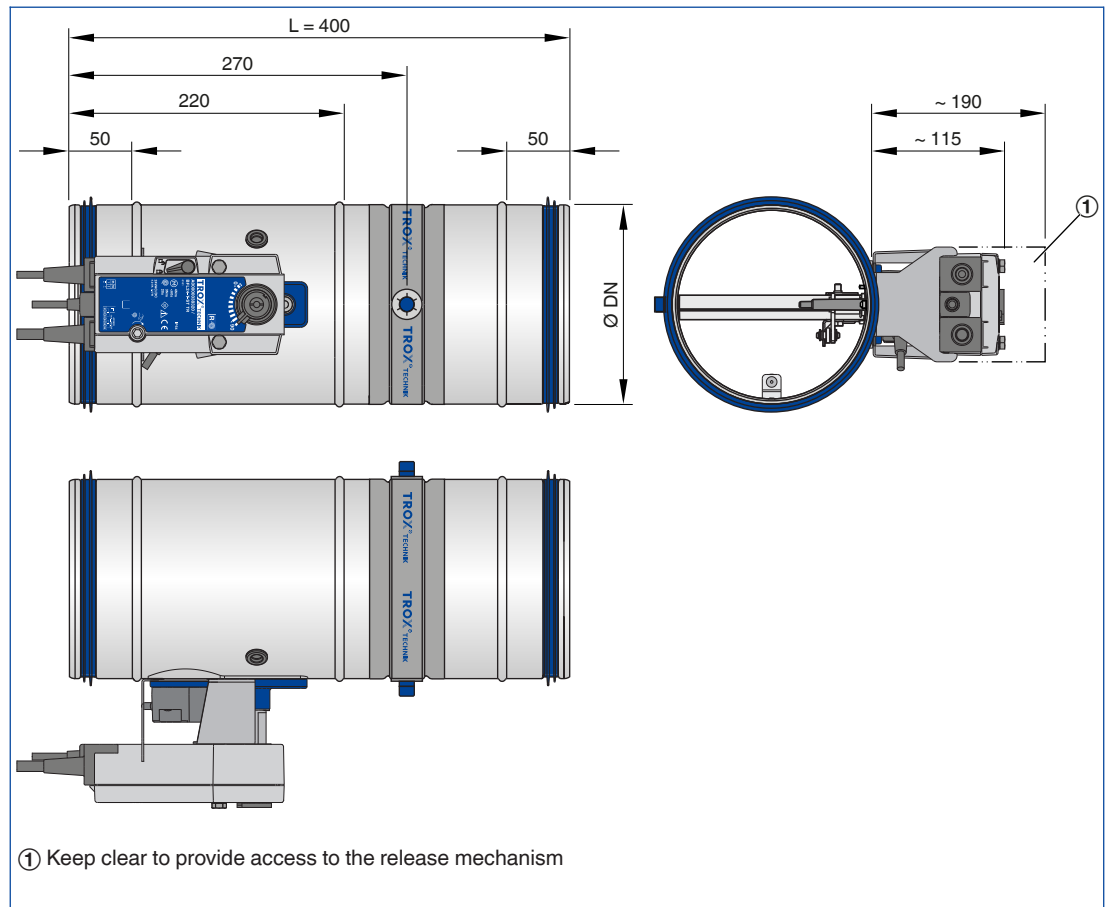
FKRS-EU with spring return actuator

① Keep clear to provide access to the release mechanism

Dimensions [mm] / Weight [kg]

Nominal size	100	125	150	160	180	200	224	250	280	315
ØD	99	124	149	159	179	199	223	249	279	314
Weight	2.5	2.8	3.0	3.1	3.4	3.6	3.9	4.4	4.9	5.6
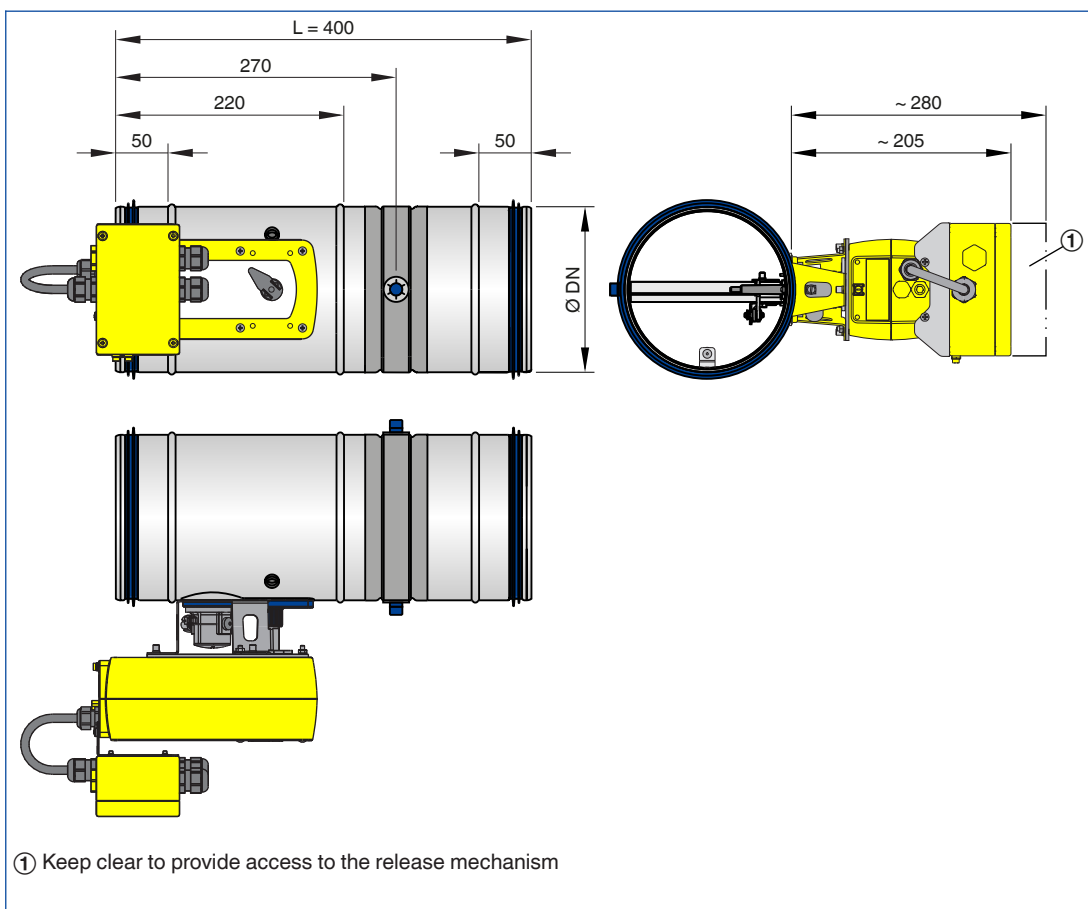
1

Dimensions

FKRS-EU with spring
return actuator
(explosion-proof)

L = 400
270
220
50
50
~ 280
~ 205
Ø DN

① Keep clear to provide access to the release mechanism

Dimensions [mm] / Weight [kg]

Nominal size	100	125	150	160	180	200	224	250	280	315
ØD	99	124	149	159	179	199	223	249	279	314
Weight	5	5.3	5.5	5.6	5.9	6.1	6.4	6.9	7.4	8.1

Description

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

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 and dry mortarless installation into solid walls and ceiling slabs, lightweight partition walls with metal support structure, including fire walls, safety partition walls and walls to provide radiation protection; also for installation into timber stud walls and half-timbered constructions with cladding on both sides; for installation into lightweight partition walls with cladding on one side (shaft walls), with or without metal support structure. For dry mortarless installation on the face of solid walls and ceiling slabs, remote from solid walls and ceiling slabs, and remote from lightweight partition walls. For installation with flexible ceiling joint into lightweight partition walls with metal support structure and into fire walls; for dry mortarless installation with a fire batt into solid walls and ceiling slabs, and into lightweight partition walls with metal support structure, including safety partition walls and walls to provide radiation protection; also for dry mortarless installation with a fire batt into timber stud walls and half-timbered constructions with cladding on both sides. For mortar-based installation into wooden beam ceilings and modular ceilings (Cadolto system), and for installation with flexible ceiling joint into non-load-bearing solid walls and solid ceiling slabs. 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. Explosion-proof constructions for zones 1, 2, 21 and 22 with spring return actuator. Use as an air transfer unit in compliance with general building inspectorate licence no. Z- 19.18-2128 and with cover grilles both ends. Simple construction for dry mortarless installation with installation kit: ER, TQ, GL, WA, WE

Special characteristics
– Declaration of performance according to Construction Products Regulation
– Classification to EN 13501-3, up to EI 120 (v_e, h_o, i ↔ 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 (02/2010), 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

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 in 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^3/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

Sizing data
– $\dot{V}$ _____ [m^3/h]
– Δp_{st} _____ [Pa]
– L_{WA} Air-regenerated noise _____ [dB(A)]

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

1 **Order options**

1 Type
FKRS-EU Fire damper

2 Construction

    No entry: standard construction
- **1**   Powder-coated casing, RAL 7001
- **2**   Stainless steel casing
- **7**   Coated damper blade
- **1 – 7**   Powder-coated casing, RAL 7001, and coated damper blade
- **2 – 7**   Stainless steel casing and coated damper blade
- **W**[1]   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
- **WE**   Installation kit for installation remote from walls and ceilings

6 Accessories 2

    No entry: none
- **A0 – AS**

7 Attachments
- **Z00 – ZEX4**

[1] W can be combined with all constructions listed under **2**, but not with attachments **7** ZEX1 - ZEX4

Description

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

Circular fire dampers used as air transfer units for the following applications:

– As an inlet for additional supply air in the walls of required corridors (escape routes) if the inlet is near the ground (centre line up to 500 mm above floor surface)
– In installation shafts as long as they have sufficient fire resistance where they penetrate compartment floors
– In installation ducts as long as they have sufficient fire resistance where they penetrate compartment floors or walls (except for necessary corridors or escape routes)

Tested for fire resistance properties to EN 1366-2, with CE marking and general building inspectorate licence.
Ready-for-operation unit, which includes a fire-resistant damper blade and a release mechanism.
Casing length 400 mm, with cover grilles both ends, for installation without duct connection. Thermal release at 72 °C.
For mortar-based installation in internal solid walls, in lightweight partition walls with cladding on both sides, in fire walls and shaft walls, and in the walls of installation shafts and ducts.

Special characteristics
– General building inspectorate licence Z-19.18-2128
– Air transfer unit without duct smoke detector

Note
– Approved only for internal walls
– Not to be connected to ducts in ventilation and air conditioning systems
– Not to be used with accessories ER, TQ, GL, WA or WE (Accessories 1)

Order options

1 Type
FKRS-EU Fire damper

2 Construction

        No entry: standard construction
☐ **1**   Powder-coated casing, RAL 7001
☐ **7**   Coated damper blade
☐ **1 – 7**   Powder-coated casing, RAL 7001, 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**

Fire dampers
Basic information and nomenclature

- Principal dimensions
- Nomenclature
- Colour codes according to IEC 60757
- Sizing
- Easy Product Finder

1

Principal dimensions

Rectangular fire dampers

B [mm]
Width of the fire damper

H [mm]
Height of the fire damper

Circular fire dampers

Nominal size [mm]
Diameter of the fire damper

L [mm]
Length of the fire damper

Nomenclature

L [mm]
Length of the fire damper

$\dot{V}$ [m³/h] and [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)

Δp_{st} [Pa]
Static differential pressure

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

Wiring

Colour codes according to IEC 60757

Code	Colour
BK	black
BN	brown
RD	red
Upper floor	orange
YE	yellow
GN	green
BU	blau

Colour codes according to IEC 60757

Code	Colour
VT	violet
GY	grey
WH	white
PK	pink
TQ	turquoise
GNYE	green-yellow

Sizing with the help of this catalogue

This catalogue provides convenient quick sizing tables for fire dampers.
The volume flow rates for all available dimensions and nominal sizes are provided based on a particular differential pressure and a given sound power level (35 or 45 dB(A)).
Sizing data for other volume flow rates and differential pressures can be determined quickly and precisely using the Easy Product Finder design programme.

Easy Product Finder

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

You will find the Easy Product Finder on our website.