

Fire dampers

Type KU-K30



KU-K30 with
diffuser of Type DLQ



With TROXNETCOM
as an option



Tested to VDI 6022

For diffusers in suspended F30 ceilings

Square fire damper for installation in suspended fire-resistant F30 ceilings. For the isolation of duct penetrations between fire compartments, available in five nominal nominal sizes

- Nominal sizes for diffusers sized 300 × 300 – 625 × 625 mm
- Satisfies high ventilation requirements when combined with a diffuser
- Coated construction meets high hygiene requirements
- Integration into the central BMS with TROXNETCOM

Optional equipment and accessories

- Ceiling diffusers/swirl diffusers
- External fusible link, 72 °C
- Electric actuator
- Release temperature 72/95 °C

Type		Page
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Variants

Product examples

KU-K30



L-KU-K30



Description



KU-K30

For detailed information on attachments see Chapter K4 – 1.2.

Application

- Fire dampers of Type KU-K30 for the isolation of air terminal devices in self supporting fire-resistant suspended ceilings in the event of a fire
- To prevent the propagation of fire and smoke through ductwork to adjacent designated fire compartments

Classification

- Fire resistance class K30-U to DIN 4102-6

Variants

- With fusible link
- With spring return actuator

Nominal sizes

- Fire damper: 300 × 300, 400 × 400, 500 × 500, 600 × 600, 625 × 625 mm
- Spigot Ø (depending on the nominal size): 160, 200, 250, 315 mm

Attachments

- Limit switch for damper blade position indication
- Spring return actuator for 24 V or 230 V supply voltage
- External fusible link

Useful additions

- Diffuser: FD, TDF-SilentAir, DLQ or ADLQ

Special characteristics

- Licence Z-41.3-320
- Tested to DIN 4102-6 for fire resistance properties
- Classification to DIN 4102, K30-U
- Low differential pressure and sound power level
- For use with supply air or extract air systems (for supply air systems with perforated sheet metal)
- Integration into the central BMS with TROXNETCOM

Parts and characteristics

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

Construction features

- Casing made of calcium silicate
- Damper blade made of special insulation material

Materials and surfaces

Plenum box:

- Special insulation material
- Special insulation material with RAL 7001 coating on the inside

Damper blade:

- Special insulation material
- Special insulation material with RAL 7001 coating
- Seal made of neoprene

Other components:

- Spigot and attachments made of galvanised sheet steel
- Fixing elements made of galvanised steel

Installation and commissioning

Installation is to be carried out according to the operating and installation manual

- In self supporting fire-resistant suspended ceilings that may be exposed to a fire from above or below
- Tile ceilings, screw-fixed and primed, with proven fire resistance properties
- Suspended ceilings which are self supporting Promat F30 metal ceilings, e.g. Promat construction 420.96 (in a screw-fixed and primed ceiling frieze)
- Lindner ceilings LMD F30 Types 1, 3, 4, 5 and 6 – 11

Standards and guidelines

- DIN 4102-6, standard fire resistance test
- 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 of the ventilation system.
- For details on maintenance and inspection, refer to the installation and operating manual

Technical data

Nominal sizes – fire damper	300, 400, 500, 600, 625 mm
Nominal sizes – spigot	160, 200, 250, 315 mm
Differential pressure range	Depends on the spigot and diffuser
Operating temperature	At least 0 – 50 °C **
Release temperature	72 °C or 95 °C (for warm air ventilation systems)
Upstream velocity	Depends on the spigot and diffuser, usually about 3 – 5 m/s

** Temperatures may differ for units with attachments

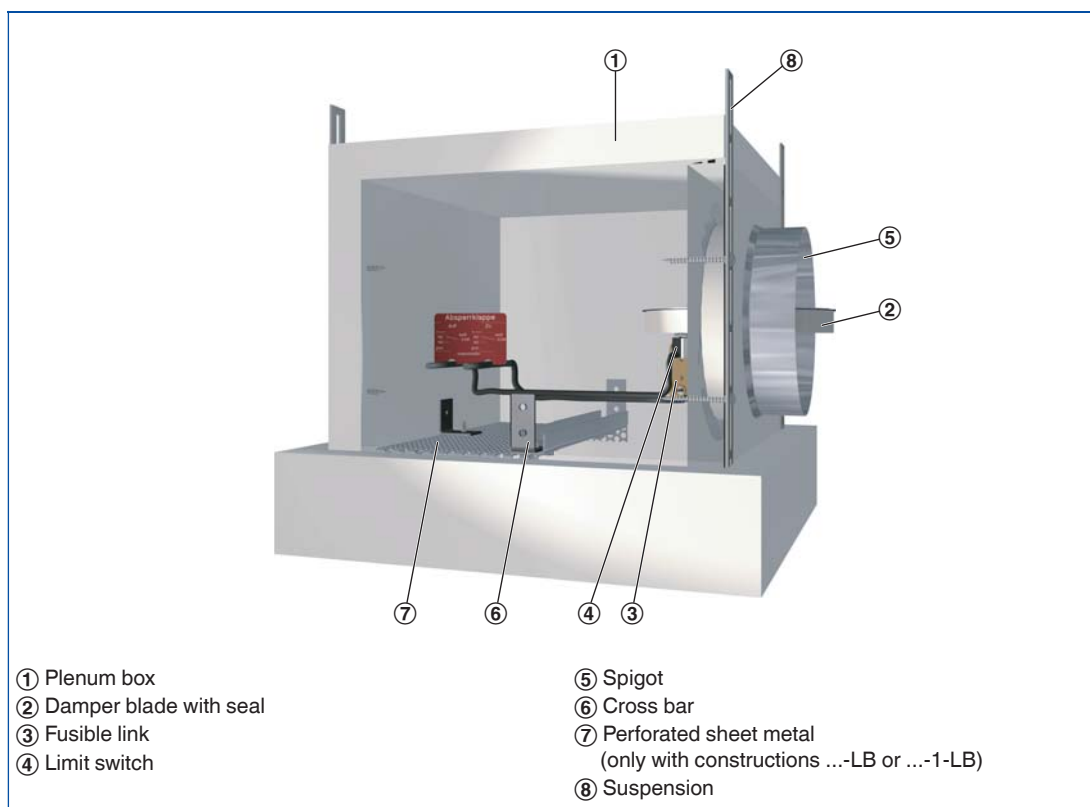
Function

Construction with fusible link

Functional description

Fire dampers for self supporting F30 suspended ceilings shut automatically in the event of a fire and 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 inside the damper. The release mechanism is accessible and can be tested from the outside (i.e. from the room).

Schematic illustration of KU-K30 with fusible link and limit switch



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.

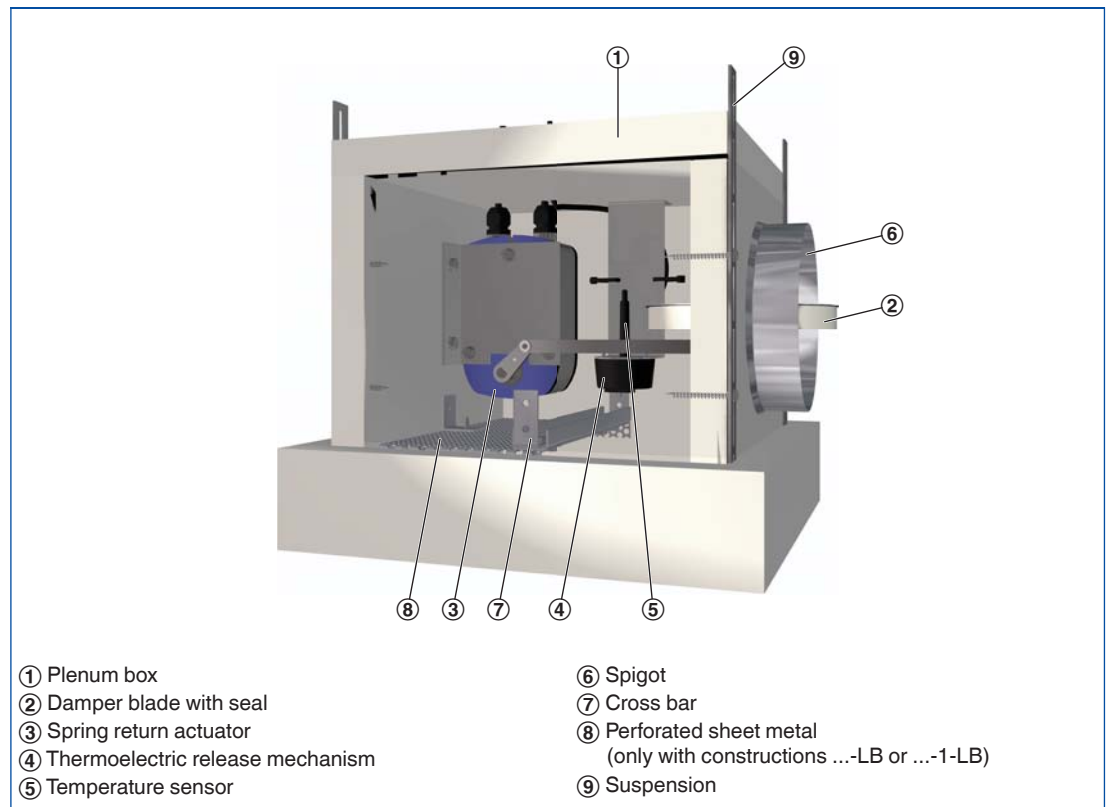
If the supply voltage fails, the damper closes (power off to close).

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 KU-K30 with spring return actuator BLF


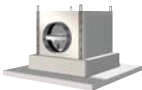
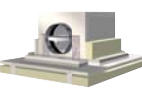


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Design information

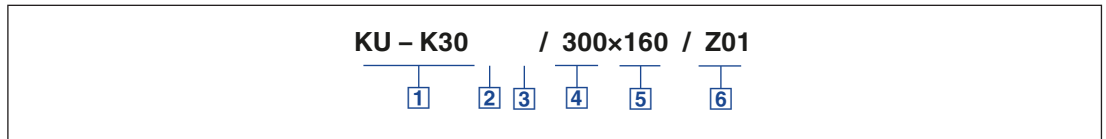
- Approved only for use in ventilation and air conditioning systems
- Fire resistance class K30-U can only be achieved with a duct connected on one end
- Ducting must be installed in such a manner that it does not impose any significant loads on the fire damper in the event of a fire.
- Connection to rigid ducts requires combustible flexible connectors or flexible aluminium ducts

Correct use when combined with suspended ceilings

Installation location		Construction	Type
Self supporting F30 fire-resistant false ceilings		Tile ceiling, screw-fixed and primed	KU-K30
Self supporting F30 fire-resistant false ceilings		Metal ceiling, Promat F30	KU-K30
Self supporting F30 fire-resistant false ceilings		Lindner metal ceiling LMD F30 Type 1, 3, 4, 5 and 6 – 11	L-KU-K30

Order code

KU-K30 / L-KU-K30



1 Type

KU-K30
L-KU-K30¹

2 Construction 1

No entry: standard construction
1 With RAL 7001 coating
LB With perforated sheet metal
1-LB With RAL 7001 coating and perforated sheet metal

3 Construction 2

W Release temperature 95 °C

4 Nominal size [mm] – fire damper²

300
400
500
600
625

5 Nominal size [mm] – spigot

160
200
250
315

6 Attachments

Z00 Standard construction
Z00 – ZL08

¹ Type L-KU-K30: For Lindner metal ceilings LMD F30 Type 1, 3, 4, 5 and 6 – 11, with building inspectorate licence

² Types DLQ · ADLQ can only be combined with selected nominal sizes

Diffuser types (to be ordered separately)

FD
TDF-SilentAir
DLQ
ADLQ

Order examples

KU-K30 with fusible link 72 °C and limit switch for damper blade position CLOSED

Make TROX
Type KU-K30 / 300 × 160 / Z01

L-KU-K30, coated RAL 7001, with spring return actuator 230 V AC

Make TROX
Type L-KU-K30-1 / 300 × 160 / Z08

Description



Limit switch

For detailed information on limit switches see Chapter 1.2

Application

- 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

/ Z01
/ Z02
/ Z03
6

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

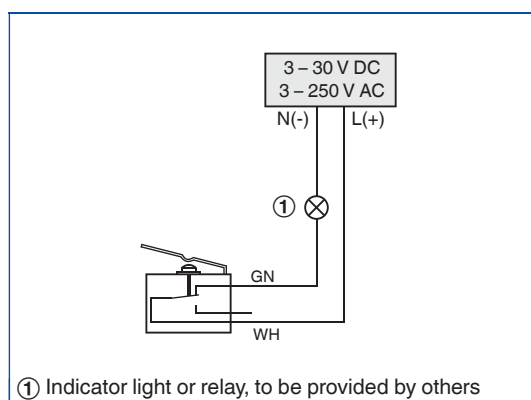
Technical data

Limit switch

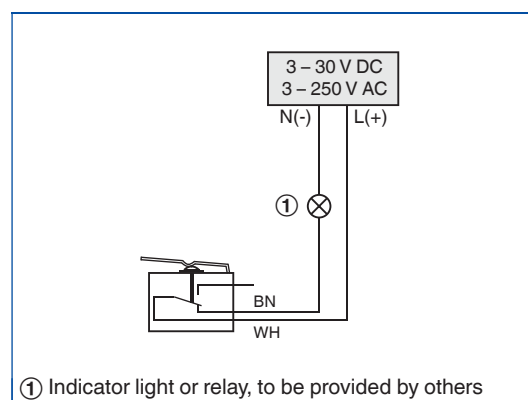
Connecting cable length/cross section	1 m/3 × 0.34 mm ²
Protection level	IP 66
Type of contact	1 changeover contact, gold-plated
Maximum switching current	0.5 A
Maximum switching voltage	30 V DC, 250 V AC
Minimum switch rating	5 mA, 3 V
Contact resistance	Aprox. 30 mΩ

Wiring Examples

Limit switch not actuated



Limit switch actuated



Description

For detailed information on the spring return actuator see Chapter 1.2

KU-K30 with spring return actuator

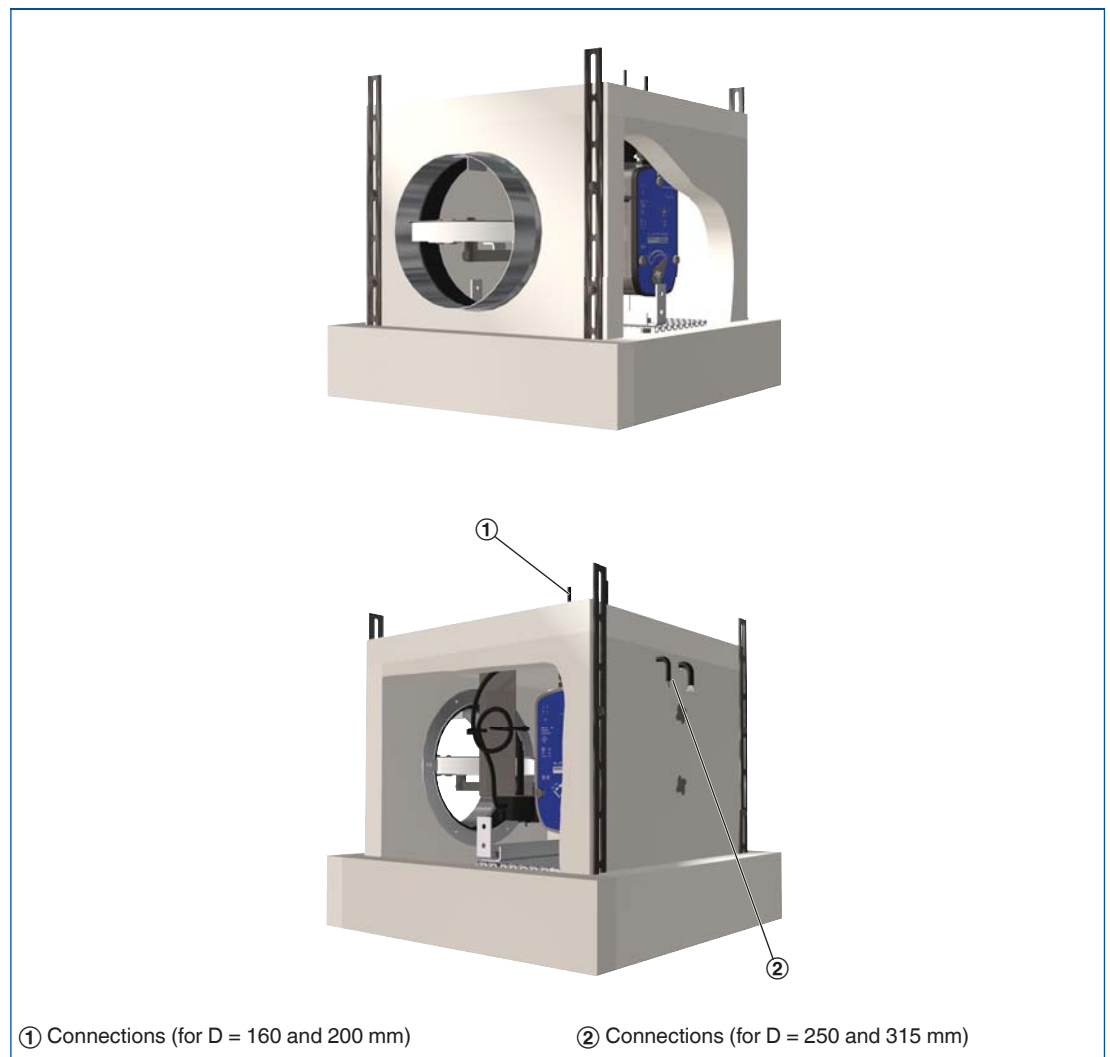
- An open/close actuator allows for the remote control of the fire damper and/or release by a suitable duct smoke detector
- If the supply voltage fails, or with thermoelectric release, the damper closes (power off to close)
- Fire dampers with spring return actuators can be functionally checked OPEN/CLOSED/OPEN
- Ambient temperature, normal operation -30 to 50 °C
- The actuator includes two limit switches
- BLF24-T-ST TR: The connecting cables of the spring return actuator are fitted with plugs, which ensure quick and easy connection to the TROX AS-i bus system

/ Z08
/ Z09
6

Order code detail

Attachments	Order code
BLF230-T TR	Z08
BLF24-T-ST TR	Z09

Spring return actuator BLF ...



1 Description

For detailed information on TROXNETCOM see Chapter 1.2

KU-K30 · L-KU-K30 with spring return actuator and TROXNETCOM

- Fire dampers with spring return actuator BLF24-T-ST TR and the modules shown 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:

- Only the bus line and the supply voltage remain to be connected by others
- LON-WA1/B2: 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 AC supply voltage
- LON-WA1/B2-AD230: Connection box for connecting the second fire damper with 230 V AC supply voltage

AS-i:

- The AS interface is a global standard bus system according to EN 50295 and IEC 62026-2
- The module sends the control signals between the spring return actuator and the controller and power unit
- This allows for controlling the actuator and monitoring of its running time during functional testing
- The supply voltage (24 V DC) for the module and the actuator is transmitted using the AS-i flat cable
- Function display: operation, 4 inputs, 2 outputs

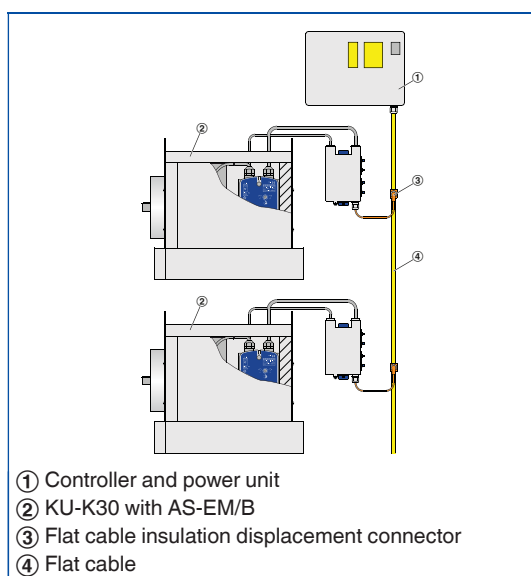
/ ZL06
/ ZL07
/ ZL08
/ ZA07

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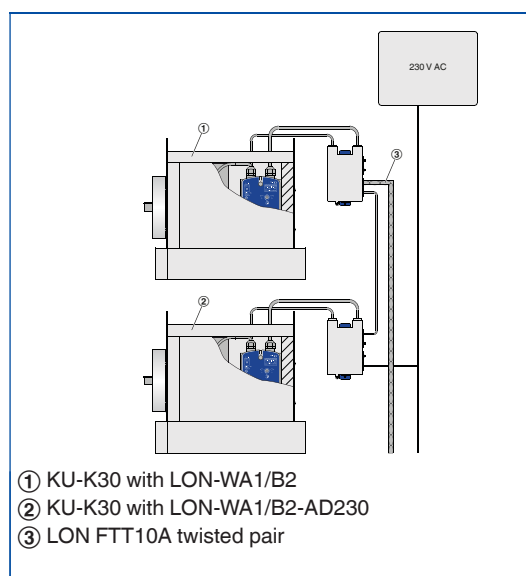
Order code detail

Attachments	Order code
LON-WA1/B2 and BLF24-T-ST TR	ZL06
LON-WA1/B2-AD and BLF24-T-ST TR	ZL07
LON-WA1/B2-AD230 and BLF24-T-ST TR	ZL08
AS-EM/B and BLF24-T-ST TR	ZA07

AS-EM/B module



Module LON-WA1/...

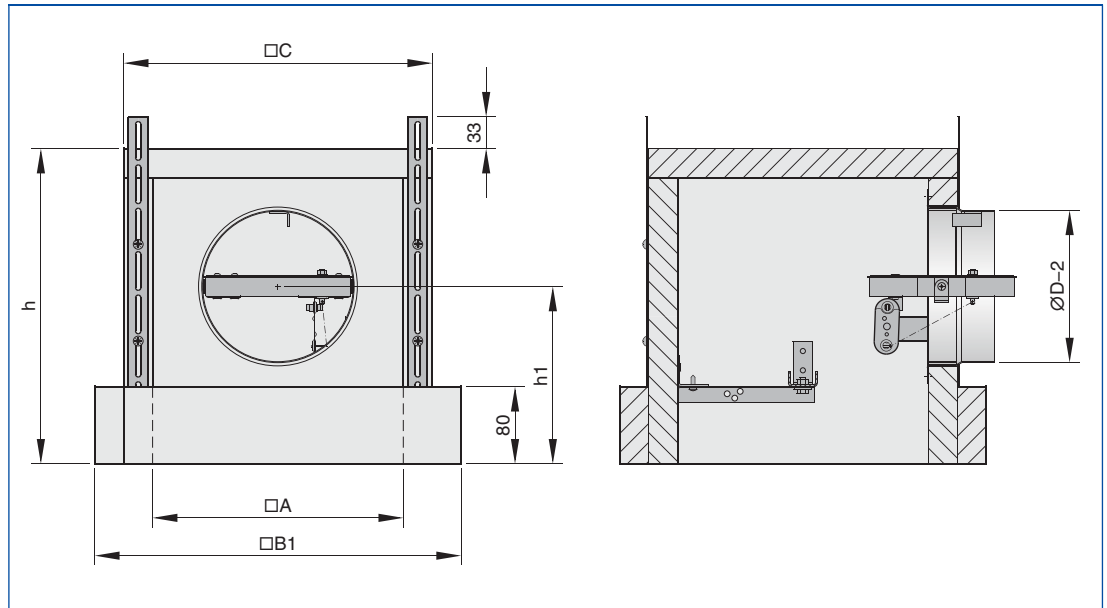


Dimensions

KU-K30 with fusible link



KU-K30 with fusible link



Dimensions [mm] and weight [kg]

Nominal size	A	B1	B2	C	D	h	h1	Weight
300	260	380	360	320	160	327	184	10
400	360	480	460	420	160 ¹	327	184	14
400	360	480	460	420	200	367	204	15
500	460	580	560	520	160 ¹	327	184	18
500	460	580	560	520	200 ¹	367	204	20
500	460	580	560	520	250	417	229	21
600	560	680	660	620	160 ¹	327	184	24
600	560	680	660	620	200 ¹	367	204	25
600	560	680	660	620	250 ¹	417	229	26
600	560	680	660	620	315	782	261	28
625	585	705	685	645	160 ¹	327	184	25
625	585	705	685	645	200 ¹	367	204	26
625	585	705	685	645	250 ¹	417	229	28
625	585	705	685	645	315	482	261	30

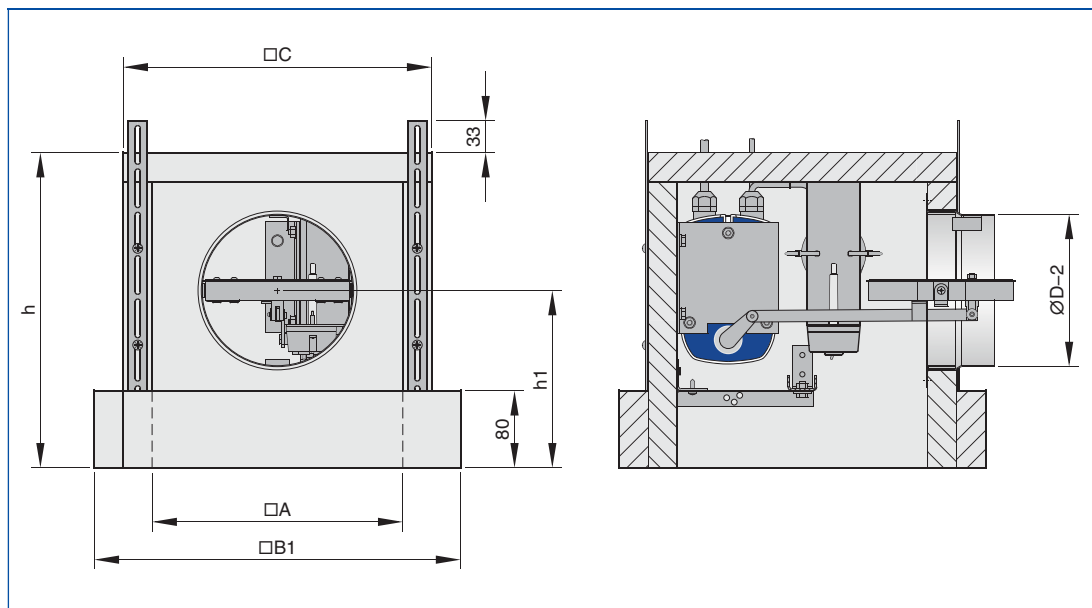
Dimensions

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KU-K30 with spring return actuator

KU-K30 with spring return actuator



Dimensions [mm] and weight [kg]

Nominal size	A	B1	B2	C	D	h	h1	Weight
300	260	380	360	320	160	327	184	12
400	360	480	460	420	160 ¹	327	184	16
400	360	480	460	420	200	367	204	17
500	460	580	560	520	160 ¹	327	184	20
500	460	580	560	520	200 ¹	367	204	22
500	460	580	560	520	250	417	229	23
600	560	680	660	620	160 ¹	327	184	26
600	560	680	660	620	200 ¹	367	204	27
600	560	680	660	620	250 ¹	417	229	28
600	560	680	660	620	315	782	261	30
625	585	705	685	645	160 ¹	327	184	27
625	585	705	685	645	200 ¹	367	204	28
625	585	705	685	645	250 ¹	417	229	30
625	585	705	685	645	315	482	261	32

Description

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

Square fire damper for the isolation of ducts in self supporting fire-resistant suspended ceilings. Satisfies high ventilation requirements when combined with a non-combustible ceiling diffuser or swirl diffuser. Suitable for supply and extract air. Ready-for-operation unit, which includes a fire-resistant damper blade and a release mechanism.
 Fire resistance class: K30-U
 For installation in self supporting F30 fire-resistant suspended ceilings: tile ceilings (screw-fixed or primed), metal ceilings, and gypsum friezes of metal ceilings.
 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.

Special characteristics

- Licence Z-41.3-320
- Tested to DIN 4102-6 for fire resistance properties
- Classification to DIN 4102, K30-U
- Low differential pressure and sound power level
- For use with supply air or extract air systems (for supply air systems with perforated sheet metal)
- Integration into the central BMS with TROXNETCOM

Materials and surfaces

Plenum box:

- Special insulation material
- Special insulation material with RAL 7001 coating on the inside

Damper blade:

- Special insulation material
- Special insulation material with RAL 7001 coating
- Seal made of neoprene

Other components:

- Spigot and attachments made of galvanised sheet steel
- Fixing elements made of galvanised steel

Technical data

- Nominal sizes – fire damper: 300, 400, 500, 600, 625 mm
- Nominal sizes – spigot: 160, 200, 250, 315 mm
- Differential pressure range: Depends on the spigot and diffuser
- Operating temperature: at least 0 – 50 °C **
- Release temperature 72 °C or 95 °C (for use in warm air ventilation systems)
- Upstream velocity: Depends on the spigot and diffuser, usually about 3 – 5 m/s

** Temperatures may differ for units with attachments

Sizing data

- \dot{V} _____ [m³/h]
- Δp_{st} _____ [Pa]
- L_{WA} Air-regenerated noise _____ [dB(A)]

Order options

1 Type

- KU-K30
- L-KU-K30¹

2 Construction 1

No entry: standard construction

- 1 With RAL 7001 coating
- LB With perforated sheet metal
- 1-LB With RAL 7001 coating and perforated sheet metal

3 Construction 2

- W Release temperature 95 °C

4 Nominal size [mm] – fire damper²

- 300
- 400
- 500
- 600
- 625

5 Nominal size [mm] – spigot

- 160
- 200
- 250
- 315

6 Attachments

- Z00 Standard construction
- Z00 – ZL08

¹ Type L-KU-K30: For Lindner metal ceilings LMD F30 Type 1, 3, 4, 5 and 6 – 11, with building inspectorate licence

² Types DLQ · ADLQ can only be combined with selected nominal sizes

Diffuser types (to be ordered separately)

- FD
- TDF-SilentAir
- DLQ
- ADLQ

Fire dampers

Basic information and nomenclature



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

Fire dampers

Basic information and nomenclature

Product selection

Fire dampers

Usage			Type							
Installation location	Construction/ building material	Minimum thickness	FK-EU				FKS-EU		FKR-EU	
			Mortar-based installation		Dry mortarless installation		Mortar-based installation	Dry mortarless installation	Mortar-based installation	Dry mortarless installation
		perimeter	partially ⁵	Fire batt	Installation kit ²	perimeter	Installation kit ²	perimeter	Installation kit ²	
		mm	Fire resistance class							
In solid walls	Walls/gross density $\geq 500 \text{ kg/m}^3$	100	EI 90 S	EI 90 S	EI 120 S	EI 90 S	EI 120 S	EI 90 S	EI 120 S	-
In solid walls with movement joint	Walls/gross density $\geq 500 \text{ kg/m}^3$	100	EI 90 S	-	-	-	-	-	-	-
On the face of solid walls	Walls/gross density $\geq 500 \text{ kg/m}^3$	100	-	-	-	EI 90 S	-	-	-	-
Adjacent to solid walls ¹	Walls/gross density $\geq 500 \text{ kg/m}^3$	100	-	-	-	EI 90 S	-	-	-	-
Remote from solid walls ¹	Walls/gross density $\geq 500 \text{ kg/m}^3$	100	-	-	-	EI 90 S	-	-	-	-
In solid ceiling slabs	Ceiling slabs/gross density $\geq 600 \text{ kg/m}^3$	125	EI 90 S	-	-	-	-	-	-	-
	Ceiling slabs/gross density $\geq 600 \text{ kg/m}^3$	150	EI 90 S	-	EI 120 S	-	EI 120 S	EI 90 S	EI 120 S	-
In solid ceiling slabs, with concrete base	Ceiling slabs/gross density $\geq 600 \text{ kg/m}^3$	125	EI 90 S	-	-	-	EI 90 S	-	EI 90 S	-
Lightweight partition walls with metal support structure and cladding on both sides	Lightweight partition walls	100	EI 90 S	-	EI 120 S	EI 90 S	EI 90 S	EI 90 S	EI 90 S	EI 90 S
Lightweight partition walls with metal support structure and cladding on both sides, flexible ceiling joint ¹	Lightweight partition walls	100	-	-	-	EI 90 S	-	-	-	-
Fire walls with metal support structure and cladding on both sides	Fire walls	115	EI 90 S	-	-	EI 90 S	EI 90 S	EI 90 S	EI 90 S	EI 90 S
Lightweight partition walls with metal support structure and cladding on one side	Shaft walls	90	-	-	-	EI 90 S	EI 90 S	EI 90 S	EI 90 S	EI 90 S
Lightweight partition walls without metal support structure but with cladding on one side	Shaft walls	40 or 50 ⁴	-	-	-	EI 90 S	-	-	EI 90 S	EI 90 S
In self supporting fire-resistant suspended ceilings	Tile ceilings, screw-fixed and primed	-	-	-	-	-	-	-	-	-
	Lay-in ceiling tiles made of panel materials	-	-	-	-	-	-	-	-	-
	Metal ceilings	-	-	-	-	-	-	-	-	-

¹ Not for FK-EU as air transfer damper

² Installation kit for the selected installation situation

³ For ØDN 100 to 200 in lightweight partition wall with metal support structure and mineral wool

⁴ 50 only for FKR-EU

⁵ Additional mineral wool

Fire dampers

Basic information and nomenclature

Product selection Fire dampers

1

Usage			Type						
Installation location	Construction/building material	Minimum thickness	FKRS-EU			FV-EU	KA-EU	FVZ-K30	KU-K30
			Mortar-based installation	Dry mortarless installation		Mortar-based installation			Dry mortarless installation
			perimeter	Fire batt	Installation kit ²	perimeter	Mortar-based installation	Installation kit	
		mm	Fire resistance class						
In solid walls	Walls/gross density $\geq 500 \text{ kg/m}^3$	100	EI 120 S	EI 120 S ³ , EI 90 S	EI 90 S	EI 120 S	K90	-	-
In solid walls with movement joint	Walls/gross density $\geq 500 \text{ kg/m}^3$	100	-	-	-	-	-	-	-
On the face of solid walls	Walls/gross density $\geq 500 \text{ kg/m}^3$	100	EI 90 S	-	EI 90 S	-	-	-	-
Adjacent to solid walls ¹	Walls/gross density $\geq 500 \text{ kg/m}^3$	100	-	-	-	-	-	-	-
Remote from solid walls ¹	Walls/gross density $\geq 500 \text{ kg/m}^3$	100	-	-	-	-	-	-	-
In solid ceiling slabs	Ceiling slabs/gross density $\geq 600 \text{ kg/m}^3$	125	-	-	-	-	-	-	-
	Ceiling slabs/gross density $\geq 600 \text{ kg/m}^3$	150	EI 120 S	EI 120 S ³ , EI 90 S	EI 90 S	EI 120 S	K90	-	-
In solid ceiling slabs, with concrete base	Ceiling slabs/gross density $\geq 600 \text{ kg/m}^3$	125	-	-	-	-	-	-	-
Lightweight partition walls with metal support structure and cladding on both sides	Lightweight partition walls	100	EI 120 S ³ , EI 90 S	EI 120 S ³ , EI 90 S	EI 120 S ³ , EI 90 S	EI 120 S	K90	-	-
Lightweight partition walls with metal support structure and cladding on both sides, flexible ceiling joint ¹	Lightweight partition walls	100	-	-	EI 90 S	-	-	-	-
Fire walls with metal support structure and cladding on both sides	Fire walls	115	EI 90 S	-	EI 90 S	-	K90	-	-
Lightweight partition walls with metal support structure and cladding on one side	Shaft walls	90	EI 90 S	-	EI 90 S	-	-	-	-
Lightweight partition walls without metal support structure but with cladding on one side	Shaft walls	40 or 50 ⁴	-	-	-	-	-	-	-
In self supporting fire-resistant suspended ceilings	Tile ceilings, screw-fixed and primed	-	-	-	-	-	-	K30-U	K30-U
	Lay-in ceiling tiles made of panel materials	-	-	-	-	-	-	K30-U	K30-U
	Metal ceilings	-	-	-	-	-	-	K30-U	K30-U

¹ Not for FK-EU as air transfer damper

² Installation kit for the selected installation situation

³ For ØDN 100 to 200 in lightweight partition wall with metal support structure and mineral wool

⁴ 50 only for FKR-EU

⁵ Additional mineral wool

Fire dampers

Basic information and nomenclature

Principal dimensions

Rectangular fire dampers

Circular fire dampers

B [mm]
Width of the fire damper

H [mm]
Height of the fire damper

Nominal size [mm]
Diameter of the fire damper

L [mm]
Length of the fire damper

Nomenclature

\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)

K
Correction value

Wiring

Colour codes according to IEC 60757

Code	Colour
BK	black
BN	brown
RD	red
OG	orange
YE	yellow
GN	green
BU	blue

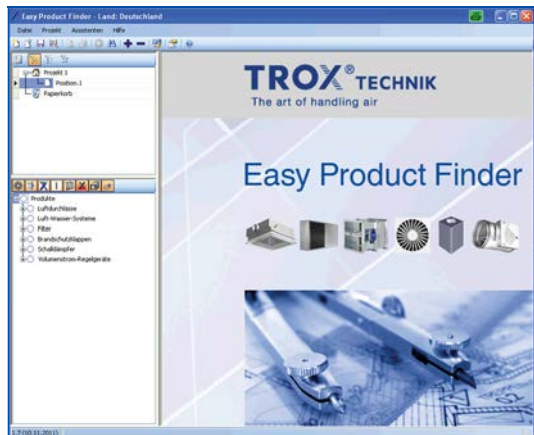
Colour codes according to IEC 60757

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. 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.