

FDR-3G Circular fire damper

Fire dampers



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General characteristics



Description

Fire dampers provide passive fire protection, designed to facilitate compartmentation and prevent the spread of toxic gases, smoke, and fire. Standard fire dampers are designed and certified in accordance with standard EN 15650 and tested according to EIS criteria in compliance with standard EN 1366-2. Fire dampers, including their installation method, are essential to fire resistance classification. FDR-3G fire dampers are intended for use in the installations listed and described in the User Manual. All fire dampers are supplied by default with a manual or motorised operating mechanism. Optionally, the dampers can be supplied with a power supply and communication unit.

Main Features

- Lightweight construction
- Standard air tightness class ATC 33 (previous C3)
- Low pressure loss
- Removable mechanism
- Integrated inspection hatch (except ND < Ø160)
- Wide range of installations up to EI120S

Types of Products

• FDR-3G

Circular fire damper with a maximum fire resistance rating of 120 minutes and a unique casing design. Sizes range from Ø100 mm to Ø1000 mm.

• FDR-3G+KR

Circular fire damper with square kit up to Ø630mm.

• FDR-3G+KS

Circular fire damper with square kit up to Ø630mm.



Activation Types

Manually operated fire dampers

By default, all manually operated fire dampers are supplied with manual control and, optionally, with microswitches and an electromagnet. In the event of a fire, the fire damper closes automatically. Depending on the version, the damper closes either after the thermal fuse melts, or by remote activation using an electromagnet via pulse connection. Once the damper blade is closed, it is mechanically locked in this position and can only be opened manually. The activation mechanism is triggered when the air temperature in the duct reaches 74 °C (or 100 °C on request) and the damper closes within one second of the fuse melting.

AM-FD CE

• H0

Fire damper with an activation mechanism with cover, crank and spring return release mechanism activated by a thermal fuse set at 74 °C (or 100 °C on request).

• H2

Fire damper with H0 activation mechanism + open and closed position indication with 230 V AC or 24 V AC/DC contact switches.

• H5-2

Fire damper with H0 activation mechanism + 24 V AC/DC electromagnetic release mechanism in the pulse connection (release occurs when the electromagnet is activated) + open and closed position indication with 230 V AC or 24 V AC/DC contact switches.

• H6-2

Fire damper with H0 activation mechanism + 230 V AC electromagnetic release mechanism in the pulse connection (release occurs when the electromagnet is activated) + open and closed position indication with 230 V AC or 24 V AC/DC contact switches.

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• KH-0

Fire damper with an activation mechanism with cover, crank and spring return release mechanism activated by a thermal fuse set at 74 °C.

• KH2U

Fire damper with KH0 activation mechanism + open and closed position indication with 12/24/48 V AC/DC – 125 V AC contact switches. Manual reset.

• KH2B

Fire damper with KH0 activation mechanism + open and closed position indication with double 12/24/48 V AC/DC – 125 V AC contact switches. Manual reset.

• KH5-2U

Fire damper with KH0 activation mechanism + 24/48 V DC electromagnetic release mechanism in the pulse connection (release occurs when the electromagnet is activated) + open and closed position indication with 12/24/48 V AC/DC – 125 V AC contact switches. Manual reset.

• KH5-2B

KH0 activation mechanism + 24/48 V DC electromagnetic release mechanism in the pulse connection (release occurs when the electromagnet is activated) + open and closed position indication with double 12/24/48 V AC/DC - 125 V AC contact switches. Manual reset.

• KHM5-2U

Fire damper with KH0 activation mechanism + 24/48 V DC electromagnetic release mechanism in the pulse connection (release occurs when the electromagnet is activated) + open and closed position indication with 12/24/48 V AC/DC – 125 V AC contact switches + RMK4.0 motorised reset mechanism (24/48 V AC/DC).

• KHM5-2B

KH0 activation mechanism + 24/48 V DC electromagnetic release mechanism in the pulse connection (release occurs when the electromagnet is activated) + open and closed position indication with double 12/24/48 V AC/DC – 125 V AC contact switches + RMK4.0 motorised reset mechanism (24/48 V AC/DC).



AM-FD-K (on request)

• KH3U

Fire damper with KH0 activation mechanism + open and closed position indication with 230 V AC contact switches. Manual reset.

• KH3B

Fire damper with KH0 activation mechanism + open and closed position indication with double 230 V AC contact switches. Manual reset.

• KH6-2U

Fire damper with KH0 activation mechanism + 230 V AC electromagnetic release mechanism in the pulse connection (release occurs when the electromagnet is activated) + open and closed position indication with 230 V AC contact switches. Manual reset.

• KH6-2B

Fire damper with KH0 activation mechanism + 230 V AC electromagnetic release mechanism in the pulse connection (release occurs when the electromagnet is activated) + open and closed position indication with double 230 V AC contact switches. Manual reset.

• KHM6-2U

Fire damper with KH0 activation mechanism + 230 V AC electromagnetic release mechanism in the pulse connection (release occurs when the electromagnet is activated) + open and closed position indication with 230 V AC contact switches + RMK4.0 motorised reset mechanism (24/48 V AC/DC).

• KHM6-2B

Fire damper with KH0 activation mechanism + 230 V AC electromagnetic release mechanism in the pulse connection (release occurs when the electromagnet is activated) + open and closed position indication with double 230 V AC contact switches + RMK4.0 motorised reset mechanism (24/48 V AC/DC).

Servomotor-operated activation mechanism

By default, all servomotor-operated fire dampers are supplied with a servomotor equipped with microswitches and, optionally, with a power and communication unit. The fire damper is equipped with a servomotor including a return spring that can close the damper from the building management system or after the electrothermal fuse blows. Servomotor-operated fire dampers in their standard configuration are equipped with an electrothermal fuse, which activates the closing of the damper when ambient temperature reaches or exceeds 72 °C. The power circuit to the servomotor is disconnected and its spring closes the damper within 20 seconds.

Notes:



Belimo servomotor available with 95 °C or 120 °C fuse.

The Belimo servomotor must be equipped with a control unit for triggering BSIA pulses.

BELIMO SERVOMOTOR (E

• B230T

Fire damper with activation mechanism + Belimo return spring servomotor (230 V AC) + 72 °C electrothermal fuse and auxiliary switches.

• B24T

Fire damper with activation mechanism + Belimo return spring servomotor (24 V AC/DC) + 72 °C electrothermal fuse and auxiliary switches.

• B24T-W

Fire damper with an activation mechanism + Belimo return spring servomotor (24 V AC/DC) + 72 °C electrothermal fuse and auxiliary switches, supplied with cable connectors for the power and communication unit (communication unit not part of the mechanism) or control unit for triggering BSIA pulses.

BELIMO SERVOMOTOR + BSIA

• B24T-W+BSIA

Fire damper with B24T-W activation mechanism + Belimo control unit for triggering BSIA pulses.

Design

The fire damper features a galvanized sheet metal casing and asbestos-free insulation blades with a rubber seal for cold smoke and an intumescent seal that expands in the event of a fire.

Product Composition

The product is made of galvanised sheet steel, a calcium silicate panel, fire-resistant carbon glass fibres, polyurethane foam and ethylene-propylene rubber. The materials are processed in accordance with local regulations. The product does not contain any hazardous substances, except for the fusible link solder, which contains one milligram of lead.

List of Accessories

Detailed information on the accessories available for the FDR-3G is available in the fire damper catalogue and technical selection guide.



Technical Parameters

Durability Test

• 50 cycles of the AM-FD manual activation mechanism – no changes to required properties

• 300 cycles of the AM-FD-K manual activation mechanism – no changes to required properties (manual and motorised reset)

• 10,000 + 100 + 100 cycles of the BELIMO servomotor-operated activation mechanism – no changes to required properties **CE** / **CE**

Fire Test Pressure

Negative pressure between 300 and 500 Pa.

Safety Position

Closed. In the event of fire, the damper is closed either by the servomotor spring or by the manual mechanism spring.

Airflow Direction

In both directions.

Permissible Air Velocity

The damper can continue to function at a maximum velocity of 12 m/s. Air free of any mechanical or chemical contamination.

Fire Protection Side

Depending on the installation classification: both sides (i \leftrightarrow o)

Repeated Opening

Suitable for daily inspection procedures. It is not possible to operate the device once the activation temperature has been reached.

Activation Temperature

Manual operation:



74 °C in the standard configuration (100 °C on request), by means of a spring once the fusible link has melted



74 °C, by means of a spring once the fusible link has melted

· Servomotor operation:



72 °C in the standard configuration (95 °C or 120 °C on request with the Belimo servomotor) by means of a spring once the current in the electrothermal fuse has been disconnected



72 °C, by means of a spring once the current in the electrothermal fuse has been disconnected



Operating Temperature

- Minimum: 0 °C
- Maximum: 60 °C for the fusible link set at 74 °C and 72 °C.
- Maximum: 85 °C for the fusible link set at 95 °C and 100 °C.
- Maximum: 105 °C for the fusible link set at 120 °C.

Adaptation to Environmental Conditions

Weather protection, with temperatures above 0 °C, up to 95% RH (3K5 according to EN 60721-3-3).

Open/Closed Indicators

- Microswitches with manual control Activation types H2 to H6-2 and KH2 to KH6-2
- Microswitches incorporated in the servomotor Activation types B230T/B24T and B24T-W / B24T-W+BSIA
 Closing/Opening time

Manual activation < 1 s, servomotor activation < 20 s

Maintenance

Not required. If required by the laws of the country where the dampers are installed, clean with a dry cloth.



Inspections

According to the laws of the country in which the fire dampers are installed: at least every 12 months

Permissible Pressure

1200Pa

Blade Leakage (EN 1751)

Class 3 in the standard configuration

Housing Leakage (EN 1751)

Class C in the standard configuration

Compliance with CE Directives

Low voltage Directive 2014/35/EU Electromagnetic compatibility Directive 2014/30/EU

Transportation and Storage

Store in a dry place indoors, between -20 °C and +50 °C

Types of Servomotors

Belimo: BFL230-T, BFN230-T, BF230-T, BFL24-T, BFN24-T, BF-24-T BFL24-T-ST,BFN24-T-ST,BF24-T-ST,+ BSIA



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Key:

- P1. Blade P2. Housing
- P3. Manual activation mechanism (H0, H...) (KH0, KH..)
- P4. Servomotor activation mechanism (B...
- P4-B. Servomotor activation mechanism (BELIMO + BSIA)
- P5. Inspection hatch cover
- P6. Electrothermal fuse (BAT72, TA-72)
- P7. BSIA (mandatory with the B274T-W servomotor)
- P8. Folding hinge
- P9. Release and test button
- P10. Switch
- P11. Open position
- P12. Closed position
- P13. 10 mm Allen key (not included)



Performance Evaluation – FDR-3G

22 CE 1396

Safeair, S.L. (Spain)

Avda. San Isidro, nave C-3, 45223 Seseña – TOLEDO 1396-CPR-0218 (valid for subgroups: KS and KR)

EN 15650:2010 Circular Fire Damper

Standard activation conditions/sensitivity - Satisfactory

- Sensor load capacity
- Sensor response temperature

Response time – Satisfactory

Closing time

Operational reliability – Satisfactory

- Motorised cycle = 10,200 cycles (Belimo servomotor)
- Manual cycle (manual/motorised) = 300 cycles (AM-FD-K)

Fire resistance:

- Resistivity depends on the installation method and location.
- Integrity E
- Maintenance of cross-sectional area (according to E)
- Mechanical stability (according to E)
- Cross-sectional area (according to E)
- Insulation I
- Smoke leakage S

Durability of response time – Satisfactory

• Temperature and sensor response capability

Durability of operational reliability - Satisfactory

Opening and closing cycle



Diagrams

The pressure drop and total A-weighted sound power level discharged depend on the nominal diameter of the damper and the volume of air flow at different duct pressures. The type of activation does not affect the airflow parameter, which is why only one activation type is shown in the diagrams.

FDR-3G-...-H0

Pressure drop and A-weighted sound power level in dB(A)



FDR-3G-...-H0

Pressure drop and A-weighted sound power level in $\mathsf{dB}(\mathsf{A})$



FDR-3G-...-H0

Pressure drop and A-weighted sound power level in dB(A)



FDR-3G-...-H0

Pressure drop and A-weighted sound power level in $\ensuremath{\mathsf{dB}}(A)$





FDR-3G-...-H0

Pressure drop and A-weighted sound power level in $\mathsf{dB}(\mathsf{A})$



FDR-3G-...-H0

Pressure drop and A-weighted sound power level in $\mathsf{dB}(\mathsf{A})$



FDR-3G-...-H0

Pressure drop and A-weighted sound power level in $\ensuremath{\mathsf{dB}}(A)$



Dimensions DN 100 to DN 630

Free area

S.L.
$$(dm^2) = \left(\pi \left(\frac{DN-2}{2} - H_{cg} - t\right)^2 - (DN-2-t)xA\right) \cdot 10^{-4}$$

FA = free area ND = nominal diameter B = blade thickness

 H_{cg} = cold gasket housing t = sheet metal thickness

	DN																
	100	125	140	150	160	180	200	225	250	280	315	355	400	450	500	560	630
S.L.(m²)	0,004	0,008	0,010	0,012	0,014	0,019	0,024	0,031	0,040	0,051	0,066	0,084	0,109	0,137	0,172	0,219	0,281
A (mm)	20	20	20	20	20	20	20	20	20	20	20	24	24	30	30	30	30
H _{cg} (mm)	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4
t (mm)	0,9	0,9	0,9	0,9	0,9	0,9	0,9	0,9	0,9	0,9	0,9	0,9	0,9	0,9	0,9	0,9	0,9



Dimensions ND 100 to ND 630

Blade protrusion

	DN (mm)																
	100	125	140	150	160	180	200	225	250	280	315	355	400	450	500	560	630
R ¹	-300	-287,5	-280	-275	-270	-260	-250	-237,5	-225	-210	-192,5	-172,5	-150	-125	-100	-70	-35
R ²	-67	-54,5	-47	-42	-37	-27	-17	-4,5	8	23	40,5	60,5	83	108	133	163	198

Weight

m	DN (mm)																
(kg ±5%)	100	125	140	150	160	180	200	225	250	280	315	355	400	450	500	560	630
КН0, Н	3,3	3,4	3,6	3,7	3,8	4,2	4,4	4,8	5,3	5,8	6,4	7,3	8,3	11,1	12,3	14,6	17,0
В	4,8	4,9	5,1	5,2	5,3	5,7	5,9	6,3	6,8	7,3	7,9	8,8	9,8	11,9	13,1	15,4	17,8



Dimensions ND 710 to ND 1000

Free area

S.L.
$$(dm^2) = \left(\pi \left(\frac{DN-2}{2} - H_{cg} - t\right)^2 - (DN-2-t)xA\right) \cdot 10^{-4}$$

FA = free area ND = nominal diameter B = blade thickness H_{cg}= cold gasket housing t = sheet metal thickness

		DN									
	710	710 800 900 1000									
S.L.(m2)	0,353	0,455	0,582	0,725							
A (mm)	40 40		40	40							
H _{cg} (mm)	4	4	4	4							
t (mm)	1,5	1,5	1,5	1,5							



ON

R2

(+KH0,KH...)

Dimensiones DN 710 a DN 1000

Blade protrusion

	DN (mm)										
	710	800	900	1000							
R ¹	3	48	98	148							
R ²	191	236	286	336							

Weight

m		DN (mm)										
(kg ±5%)	710	800	900	1000								
KH0, H	33,5	39,4	46,5	54,2								
В	35,6	41,5	48,6	56,3								

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Order Code



ND

Dimensions, øND (100 mm to 1,000 mm)

B – Activation Type (H0 to B24T-W)

AM-FD CE

H0 (manual lever, no switches)

H2 (manual lever, 2 start of stroke and end of stroke limit switches)

H5-2 (manual lever, 24V AC/DC electromagnet, 2 start of stroke and end of stroke limit switches)

H6-2 (manual lever, 230V AC electromagnet, 2 start of stroke and end of stroke limit switches)

B230T (Belimo 230V AC servomotor)

B24T (Belimo 24V AC/DC servomotor)

B24T-W (Belimo 24V AC/DC servomotor and cable connector for communication unit)

ам-ғр-к СЕ

KH0 (manual lever, no switches)

KH2U (manual lever, 1 start of stroke limit switch and 1 end of stroke limit switch 12/24/48V AC/DC, 125V AC) *KH2B* (manual lever, 2 start of stroke limit switches and 2 end of stroke limit switches 12/24/48V AC/DC, 125V AC) *KH5-2U* (manual lever, 24/48V DC electromagnet, 1 start of stroke limit switch and 1 end of stroke limit switch 12/24/48V AC/DC, 125V AC

KH5-2B (manual lever, 24/48V DC electromagnet, 2 start of stroke limit switches and 2 end of stroke limit switches 12/24/48V AC/DC, 125V AC)

KHM5-2U (manual lever, 24/48V DC electromagnet, 1 start of stroke limit switch and 1 end of stroke limit switch 12/24/48V AC/DC, 125V AC), RMK4.0 (motorised reset at 24/48 AC/DC)

KHM5-2B (manual lever, 24/48V DC electromagnet, 2 start of stroke limit switches and 2 end of stroke limit switches 12/24/48V AC/DC, 125V AC), RMK4.0 (motorised reset at 24/48 AC/DC)

AM-FD-K (on request)

KH0 (manual lever, no switches)

KH3U (manual lever, 1 start of stroke limit switch and 1 end of stroke limit switch 230V AC)

KH3B (manual lever, 2 start of stroke limit switches and 2 end of stroke limit switches 230V AC)

KH6-2U (manual lever, 24/48V DC electromagnet, 1 start of stroke limit switch and 1 end of stroke limit switch 230V AC) *KH6-2B* (manual lever, 24/48V DC electromagnet, 2 start of stroke limit switches and 2 end of stroke limit switches 230V AC) AC)

KHM6-2U (manual lever, 24/48V DC electromagnet, 1 start of stroke limit switch and 1 end of stroke limit switch 230V AC), RMK4.0 (motorised reset at 24/48 AC/DC)

KHM6-2B (manual lever, 24/48V DC electromagnet, 2 start of stroke limit switches and 2 end of stroke limit switches 230V AC), RMK4.0 (motorised reset at 24/48 AC/DC)



Order Code

Examples of order codes for circular fire dampers

FDR-3G-1000-H2 (AM-FD)

Circular fire damper with a nominal diameter of 1,000 mm, manual actuator with open/closed position indicated by 2 start of stroke limit switches and 2 end of stroke limit switches.

FDR-3G-1000-KH2U (AM-FD-K)

Circular fire damper with a nominal diameter of 1,000 mm, manual actuator with open/closed position indicated by 1 start of stroke limit switch and 1 end of stroke limit switch.

FDR-3G-1000-KH2B (AM-FD-K)

Circular fire damper with a nominal diameter of 1,000 mm, manual actuator with open/closed position indicated by 2 start of stroke limit switches and 2 end of stroke limit switches. Note: Fire resistance depends on the installation method.

Access Areas

Location of inspection hatch (removable mechanism available for all sizes):

ND $\leq \emptyset$ 150: without inspection hatch: inspection is performed via a removable mechanism, or an inspection hatch must be added to the connecting duct.

- $ø160 \le ND \le ø225$: standard in position L; it is not possible to add an additional inspection hatch.
- $\emptyset 250 \le ND \le \emptyset 1,000$: standard in position B.



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Identification label

MOD M	E.A	LIM: 24	l/48Vcc	;						
FDR3G (100 <= 1	DN =	400 mm) n	ésistance	au feu sek	on mode d	*installatio	on			
Résistance au feu		wet	dry	soft	Hilti	On & Out 2	On & Out 1 layers			
	ve	• •	•	•	•	•	•			
	ho	• 0	•	•						
				-						

EI120 (ve ho i ↔ o)

Mécanisme de déclenchement Code: AM-FD-KHM5-2B-KS44	
Signalisation: FDCB: 12/24/48 V AC/DC ou 125 V AC	<u>d ≕ h</u> เ≣∰®
E.TELE 24/48 DC 3,5W	1 241/481 2
E.ALIM 24/48 DC	DOU FOU DOB FOR
Fabriqué: 07/11/2024 Code de compatibilité:	NINININI
IP42 K12345600010001 KS44	NC C NONC C NONC C NONC C NO 3 4 5 6 7 8 9 10 11 12 13 14



Key

- auto = automatic
- RC = remote-controlled
- Pa = pressure in Pascals
- ND = nominal dimensions (mm)
- FA = free area
- PI = power input
- RCI = remote control input
- E = emission
- VAC = Volts alternating current
- VDC = Volts direct current

Location of Labels



Installation

Wall thickness for installation type

			a)	b)*	c)*	
	CE	El 60 (v _e h _o i \leftrightarrow o) S	≥ 100 mm	. 110	. 110	
	FDR-3G DN100 DN1000	El 90 (v _e h _o i \leftrightarrow o) S	≥ 125 mm	≥ IIU mm	≥ 110 mm	\bigcirc
	Subpressure 300Pa	El 120 ($v_e h_o i \leftrightarrow o$) S	≥ 150 mm	≥ 150 mm	≥ 150 mm	360°
1 Wet	FDR-3G DN100 DN1000 Subpressure 500Pa	El 120 (v _e h _o i ↔ o) S	≥ 150 mm	≥ 150 mm	≥ 150 mm Except: DN710 - DN 1000	360° Except: DN450 - DN 630
	FDR-3G	El 60 (v _e h _o i \leftrightarrow o) S	≥ 100 mm			
	DN100 DN630 Subpressure 300Pa	El 90 ($v_e h_o i \leftrightarrow o$) S	≥ 125 mm	≥ 110 mm	≥ 110 mm	360°
2 Dry	FDR-3G	El 60 (v _e - i \leftrightarrow o) S	≥ 100 mm	> 110 mm		
	> DN630 DN1000 Subpressure 300Pa	El 90 (v _e - i \leftrightarrow o) S	≥ 125 mm	2 110 11111		360°
	FDR-3G	El 60 ($v_e h_o i \leftrightarrow o$) S	≥ 100 mm			
3 Soft	DN100 DN630 Subpressure 300Pa	El 90 (v _e h _o i \leftrightarrow o) S	≥ 125 mm	≥ IIU mm	≥ IIU mm	360°
	FDR-3G	El 60 (v _e - i ↔ o) S	≥ 100 mm	. 110		
3H Hilti	DN100 DN630 Subpressure 300Pa	El 90 (v _e - i ↔ o) S	≥ 125 mm	211011111		360°
	FDR-3G	El 60 (v _e - i ↔ o) S	≥ 100 mm	× 110 mm		Θ
5.1 ON & OUT	DN100 DN400 Subpressure 300Pa	El 90 (v _e - i ↔ o) S	≥ 125 mm	2 1 10 11111		
5.2 ON & OUT	FDR-3G CC DN100 DN500 Subpressure 300Pa	El 60 (v _e - i \leftrightarrow o) S	≥ 100 mm	≥ 110 mm		

* Tolerance = ± 10 mm

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Legend

- 1. Wet Installation in wet material, filled with plaster/mortar/concrete
- 2. Dry Dry installation, made good with board and mineral wool filler
- 3. Soft Soft installation using
- 4. Hilti Made good with Hilti foam only.
- 5.1. In & Out IN & OUT the wall installation with 2 layers of Mineral Wool rated EI90S
- 5.2. In & Out IN & OUT the wall installation with 1 layer of mineral wool rated EI60S

Types of wall:

- a) Flexible wall (plasterboard)
- b) Wall made of concrete/masonry/aerated concrete (rigid)
- c) Floor/ceiling made of concrete/aerated concrete (rigid)

Classification:

- (E) Integrity.
- (I) Isolation.
- (h_o) Installed in horizontal slab. Mounted in horizontal enclosure.
- (v) Installed in wall or stud wall. Mounted in vertical enclosure.
- $(i \leftrightarrow o)$ Mechanism position. Symmetric (independent of airflow direction).
- (S) Air tightness

Installation, maintenance and operation

Some parts of the damper may have sharp edges - gloves must be worn when handling the damper and during installation to prevent injury. To avoid electric shock, fire or any other damage that could result from the improper use or operation of the damper, it is important to:

- 1. Ensure that the installation is carried out by a qualified person.
- 2. Precisely follow the instructions written and represented in the manual.
- 3. Inspect the damper in accordance with the manual.
- 4. Check the fire damper functions according to the section "Checking the fire damper functions correctly" before installation. This procedure prevents a damper that has been damaged during transport or handling from being installed.

Information on installation, maintenance and operation can be found at www.koolair.com.

Rules for installation

- The duct connected to the fire damper must be supported or hung so that the damper does not support its weight. The damper must not support any part of the building or wall in a way that could damage the damper or cause a fault as a consequence. The installation of an expansion joint is recommended on either side of the damper.
- The damper actuator mechanism can be placed on either side of the wall, but should be positioned to ensure easy access during inspection.
- According to EN 1366-2, there must be at least 200 mm between fire dampers. This condition does not apply to the distances tested. As such, wet and soft installations are approved for smaller distances on condition that the resulting fire resistance is reduced to EI90S.
- The distance between the wall/ceiling and the fire damper must be at least 75 mm. This condition does not apply to the distances tested. Therefore, wet and soft installations are approved for smaller distances on condition that the resulting resistivity is reduced to EI90S.
- The fire damper must be installed in a fire compartmentation structure in such a way that in its closed position the damper blade is located inside this structure. A foldable hinge is provided on the damper body to indicate where the plane of the supporting structure must begin. This condition does not apply to In & Out installations.
- According to EN 1366-2, the minimum thickness of the supporting construction must be maintained at least 200 mm around the installation opening, regardless of fire resistance.
- The gap between the fire damper and the wall/ceiling may be increased by up to 50% of the area of the opening, or reduced to the smallest possible amount that still provides sufficient space for the filling material to be installed.

IN ACCORDANCE WITH EN 15650, ALL FIRE DAMPERS MUST BE INSTALLED IN ACCORDANCE WITH THE MANUFACTURER'S INSTALLATION INSTRUCTIONS!

Wet installation



Using plaster/mortar/concrete filler

- 1. The opening in the supporting construction must be prepared as shown below. The surfaces of the opening must be clean and even.
- 2. Openings in flexible walls must be reinforced in line with the standards for plasterboard walls. The dimensions of the opening should be the nominal dimensions of the damper plus an additional clearance. For circular dampers, an opening with diameter D1 should be made.
- Insert the closed damper in the centre of the opening so that the damper blade is in the wall. Use the foldable bracket (2; units) to secure the damper against the wall with a suitable screw (F1; recommended screw diameter 5.5 mm; e.g. DIN7981).
- 4. For damper diameters above 800 mm, it is recommended to use a duct support inside the damper to ensure the weight of the filling material does not damage or deform the damper casing.
- 5. Fill the area between the wall and the damper with plaster, mortar or concrete filler (2). Take care to avoid soiling the working parts of the damper, which could prevent it from functioning properly. It is recommended that the working parts are covered during installation. Boards can be used to avoid seepage of the filling material although they are not necessary for wet installation.
- 6. First allow the plaster, mortar or concrete filler to harden and then carry out the following steps.
- 7. Once the filling material has hardened, remove the duct support from inside the damper.
- 8. If necessary, uncover or clean the damper after installation.
- 9. Check damper operation

Standard Distances

According to EN 1366-2, there must be a minimum distance of 75 mm between the wall or ceiling and the damper body. Where multiple ducts cross through a fire wall, there must be a minimum distance of 200 mm between two damper bodies. This also applies to the distance between a damper and any foreign object passing through the fire wall nearby.

Smaller distances - Maximum fire resistance reduced to El90S

The distance between 2 individual fire dampers may be reduced to 60 mm, measured from casing surface to casing surface, and the distance between the surface of the damper installed in the duct and the adjacent supporting construction (wall/floor) may be reduced to 40 mm, provided that the fire resistance classification is reduced as follows El90 (v_e i \leftrightarrow o) S.

Installation in a thinner wall than tested

It is possible to install the damper in a thinner wall provided that an additional layer(s) of fire board is fixed to the wall's surface so the damper penetration is sealed to the same length as that tested. The minimum width of the boards added around the damper should be 200 mm. What is more, any thinner walls must be classified according to EN 13501-2:2007 + A1: 2009 for the fire resistance required for the intended use of the product. In the case of an overhanging wall, the additional layers of fire board must be fixed to the steel supporting structure.



Wet installation





Wet installation





Legend:

- F1. Screw \geq 5.5 mm DIN7981 or suitable plug and 6 mm screw.
- F2. Plaster/mortar/concrete filler.
- 1. Fire damper (actuator side)
- 2. Foldable bracket
- 3. Concrete/masonry/aerated concrete wall or ceiling.
- 4. Flexible wall (plasterboard)
- 4a. 2 layers of fire resistant plasterboard type F, EN 520 4b Vertical profiles CW
- 4c. Horizontal profiles CW
- 4d. Mineral wool; thickness/cubic density see picture.
- 5. Flexible wall (timber trusses)
- 5a. Vertical spruce timber truss ≥ 60 × 100 mm 5b Horizontal spruce timber truss ≥ 80 × 100 mm
- 6. Alternative thinner wall (classified according to EN 13501-2:2007 + A1: 2009 for the fire resistance required for the intended use of the product.)
- 7. The 200 mm section from the opening around the damper must have the same composition and be created in the same way as the flexible (plasterboard) wall.

Notes:

- v_e Vertical (wall)
- h_o Horizontal (floor/ceiling)
- 1) Smaller distances fire resistance must be reduced to EI90 (ve i<->o) S

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Dry installation

	FDR-3G	El 60 ($v_e h_o i \leftrightarrow o$) S	a)	b)	c)	
	DN100 DN630 Subpressure 300Pa	El 90 ($v_e h_o i \leftrightarrow o$) S				360°
2 Dry	FDR-3G	El 60 (v _e - i \leftrightarrow o) S	a)	b)	$\overline{(1)}$	
	> DN630 DN1000 Subpressure 300Pa	El 90 (v _e - i \leftrightarrow o) S	B		360°	

Use of mineral wool and covered with boards

- The opening of the supporting construction must be prepared as described below. The surfaces of the opening must be clean and even. Openings in flexible walls must be reinforced in line with the standards for plasterboard walls. The dimensions of the opening should be the nominal dimensions of the damper plus an additional clearance. For circular dampers, an opening with diameter D1 should be made.
- 2. These dampers require the foldable brackets (2) to be fitted to the covering boards using suitable screws or screws and plugs (F1). As such, the lower part(s) of the CBR-FD covering boards should be installed first. Insert the damper from the mechanism side and fix the foldable damper brackets to the covering board using appropriate screws (F1). Then install the remaining covering boards from the mechanism side.
- 3. Fill the area between the wall and the damper with mineral wool with a density of at least 50 kg/m3 (F3). This should be done thoroughly but in such a way that the damper casing is not deformed and care must be taken to avoid soiling the functional parts of the damper, which could prevent it from functioning properly.
- 4. Fill the gap between the damper and the mounting opening; for circular dampers use CBR-FD covering boards with pre- drilled holes.
- 5. All gaps between the covering boards and the wall or between the covering boards and the fire damper must be filled with a fire resistant coating (F4).
- 6. If necessary, uncover or clean the damper after installation.
- 7. Check damper operation

Installation - Standard Distances

For dry installation, there should be a minimum distance of 100 mm from the wall or ceiling to the damper body and for DN>560 the distance should be 150 mm. Where multiple ducts cross through a fire wall, there must be a minimum distance of 200 mm between two damper bodies, or 300 mm for DN>560. This applies to the distances between the damper and any other objects passing through the fire-resistant wall nearby.

Installation in a thinner wall than tested

It is possible to install the damper in a thinner wall provided that an additional layer(s) of fire board is fixed to the wall surface so the damper penetration is sealed to the same length as that tested. The minimum width of the boards added around the damper should be 200 mm. What is more, any thinner walls must be classified according to EN 13501- 2:2007 + A1: 2009 for the fire resistance required for the intended use of the product. In the case of an overhanging wall, the additional layers of fire board must be fixed to the steel supporting structure.



Dry installation



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Dry installation





Soft installation



Soft installation with fire resistant coating

For this type of installation the use of flexible connections is recommended (see accessory FCR) due to thermal expansion of the connected ducts in the event of a fire. Install flexible connections so that there is a minimum distance of 50 mm from the flexible part to the edge of the damper blade in the open position.

- 1. The opening in the supporting construction must be prepared as shown below. The surfaces of the opening must be clean and even. Openings in flexible walls must be reinforced in line with the standards for plasterboard walls. The dimensions of the opening should be the nominal dimensions of the damper plus an additional clearance. For circular dampers, an opening with diameter D1 should be made.
- 2. Prepare mineral wool segments with a thickness equal to the height of the opening (F5).
- 3. First apply a suitable fireproof coating (F6) on the damper at the place of its future installation: use the same fireproof coating to assemble and fix the filling material of the future installation. Once the fireproof coating has dried, the damper and the filling are ready for installation.
- 4. Apply the same fireproof coating (F6) on the internal surface of the wall cavity. Likewise, apply the fireproof coating on the external surface of the filler that is fixed to the surface of the damper. Immediately after applying the fireproof coating, insert the damper in the wall cavity. The damper blade must be located within the supporting structure.
- 5. After inserting the damper into the opening and securing it with the foldable brackets and the corresponding screws (F1), apply the same fireproof coating (F6). The coating should be at least 2 mm thick and 100 mm wide on the exposed filling material and applied evenly on the edges of the wall from both sides. Do not apply the coating where the mechanism, inspection access doors and manufacturer's labels are located.
- 6. If necessary, uncover or clean the damper after installation.
- 7. Check damper operation

Standard Distances

According to EN 1366-2, there must be a minimum distance of 75 mm between the wall or ceiling and the damper body. Where multiple ducts cross through a fire wall, there must be a minimum distance of 200 mm between two damper bodies. This also applies to the distance between a damper and any foreign object passing through the fire wall nearby.

Smaller distances

The distance between 2 individual fire dampers may be reduced to 60 mm, measured from casing surface to casing surface, and the distance between the surface of the damper installed in the duct and the adjacent supporting construction (wall/floor) may be reduced to 40 mm.

Installation in a thinner wall than tested

It is possible to install the damper in a thinner wall provided that an additional layer(s) of fire board is fixed to the wall surface so the damper penetration is sealed to the same length as that tested. The minimum width of the boards added around the damper should be 200 mm. What is more, any alternative thinner walls must be classified according to EN 13501-2:2007 + A1: 2009 for the fire resistance required for the intended use of the product. In the case of an overhanging wall, the additional layers of fire board must be fixed to the steel supporting structure.



Soft installation





Soft installation





Legend:

- F1. Screw ≥ 5.5 mm DIN7981 or suitable wall plug and 6 mm screw.
- F5. Mineral wool segment (minimum 150 kg/m3).
- F6. Fireproof coating (Promastop-CC/Promat) at least 2 mm thick for exposed surfaces.
- 1. Fire damper (actuator side)
- 2. Foldable bracket
- 3. Concrete/masonry/aerated concrete wall or ceiling
- 4. Flexible wall (plasterboard)
- 4a. 2 layers of fire resistant plasterboard type F, EN 520
- 4b Vertical profiles CW
- 4c. Horizontal profiles CW
- 4d. Mineral wool; thickness/cubic density see picture.
- 5. Flexible wall (timber trusses)
- 5a. Vertical spruce timber truss ≥ 60 × 100 mm 5b Horizontal spruce timber truss ≥ 80 × 100 mm
- 6. Alternative thinner wall (classified according to EN 13501-2:2007 + A1: 2009 for the fire resistance required for the intended use of the product.)
- 7. The 200 mm section from the opening around the damper must have the same composition and be created in the same way as the flexible (plasterboard) wall.

Notes:

- v_e Vertical (wall)
- h_o Horizontal (floor/ceiling)

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Hilti installation



Filled only with Hilti foam

For this type of installation the use of flexible connections is recommended (see accessory FCR) due to thermal expansion of the connected ducts in the event of a fire. Install flexible connections so that there is a minimum distance of 50 mm from the flexible part to the edge of the damper blade in the open position. Recommendation: surplus material can be reused as filler for this type of installation. It can be inserted into the cavity before adding foam using the pistol.

- The opening of the supporting construction must be prepared as described. The surfaces of the opening must be clean and even. Openings in flexible walls must be reinforced in line with the standards for plasterboard walls. The dimensions of the opening should be the nominal dimensions of the damper plus an additional clearance. For circular dampers, an opening with diameter D1 should be made.
- 2. Insert the damper concentrically into the opening and fix it using the foldable brackets and suitable screws (F1).
- 3. Wear protective gloves when handling the foam. Insert the barrel of the foam pistol into the centre of the cavity between the damper and the opening and fill completely with foam (F17): any excess foam can be quickly inserted back into the cavity by hand.
- 4. Once the filler (F17) has solidified it will always remain partially flexible and any excess foam protruding from the wall can be cut off.
- 5. If necessary, uncover or clean the damper after installation.
- 6. Check damper operation

Standard Distances

According to EN 1366-2, there must be a minimum distance of 75 mm between the wall or ceiling and the damper body. Where multiple ducts cross through a fire wall, there must be a minimum distance of 200 mm between two damper bodies.

This also applies to the distance between a damper and any foreign object passing through the fire wall nearby.

Smaller distances

The distance between 2 individual fire dampers may be reduced to 60 mm, measured from casing surface to casing surface, and the distance between the surface of the damper installed in the duct and the adjacent supporting construction (wall/floor) may be reduced to 40 mm.

Installation in a thinner wall than tested

It is possible to install the damper in a thinner wall provided that an additional layer(s) of fire board is fixed to the wall surface so the damper penetration is sealed to the same length as that tested. The minimum width of the boards added around the damper should be 200 mm. What is more, any alternative thinner walls must be classified according to EN 13501-2:2007 + A1: 2009 for the fire resistance required for the intended use of the product. In the case of an overhanging wall, the additional layers of fire board must be fixed to the steel supporting structure.

FDR-3G Circular fire damper



Hilti installation



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Hilti installation





Legend:

- F1. Screw ≥ 5.5 mm e.g. DIN7981 or suitable wall plug and 6 mm screw.
- F17. Foam CFS-F FX/HILTI.
- 1. Fire damper (actuator side).
- 2. Foldable bracket
- 3. Concrete/masonry/aerated concrete wall or ceiling
- 4. Flexible wall (plasterboard)
- 4a. 2 layers of fire resistant plasterboard type F, EN 520 4b Vertical profiles CW
- 4c. Horizontal profiles CW
- 4d. Mineral wool; thickness/cubic density see picture. 5 Flexible wall (timber trusses)
- 5a. Vertical spruce timber truss ≥ 60 × 100 mm 5b Horizontal spruce timber truss ≥ 80 × 100 mm
- 6. Alternative thinner wall (classified according to EN 13501-2:2007 + A1: 2009 for the fire resistance required for the intended use of the product.)
- 7. The 200 mm section from the opening around the damper must have the same composition and be created in the same way as the flexible (plasterboard) wall.

Notes:

- v_e Vertical (wall)
- 1) Smaller distances maximum resistance El90 ($v_e i \leftrightarrow o$) S

ON & OUT wall installation, El90S



Using 2 layers of mineral wool

SUGGESTION: Plaster/mortar/concrete (F2) can be used as an alternative filling material instead of the filler (F9) in the cavity between the wall and the duct, in which case the coating (F10) is not necessary. There are two possible ways to fix the damper: using the MP-MX ring or using the UVH30 ring, see point 3 of the instructions. Prepare the damper for installation by holding it in the opening using ceramic adhesive tape (12) and fix it with a suitable metal ring (13 or 14).

- The opening in the supporting construction must be prepared as shown in the figure. The surfaces of the opening clean and even. Openings in flexible walls must be reinforced in line with the standards for plasterboard walls. The dimensions of the opening should be the nominal dimensions of the damper plus an additional clearance. For circular dampers, an opening with diameter D1 should be made.
- 2. Insert the duct into the load-bearing structure together with the damper so that the duct protrudes from the wall by the required distance. Push the insulation around the duct (F9) and trim the edges so that it is flush with the wall. Paint the surface of the insulation in line with the wall with a suitable coat of paint (F10) up to 100 mm from the duct so that it covers the insulation and part of the wall. Alternatively, plaster/mortar/concrete can be used as filling material (F2).
- 3. Fix the circular damper with L-shaped sheet metal brackets (F11) evenly all around the perimeter at 4 points.
- 4. Depending on the type of ring that is embedded in the blade location, the damper should be suspended with
 - M12 threaded rod (11) when using the MP-MX ring (13).
 - 2 × M10 threaded rod (15) when using the UVH30 ring (14).
- 5. Insulate the parts of the damper and duct between the damper and the wall. Fix the insulation to the wall using a suitable fireproof coating (BSF, ISOVER). The circular part of the damper should be joined to the duct insulation with an access wire (9) for both insulation layers, as is normally applied when insulating circular ducts.
- Cover the face of the insulation and the perimeter with galvanised sheet metal cladding (accessory A2) up to 150 mm from the edge of the insulation, fix the sheet metal against the damper casing via the holes in the accessories (10). Any protruding screws could obstruct the blade during opening and must be cut back so that they do not impede the movement of the blade.
- 7. If necessary, uncover or clean the damper after installation.
- 8. Ensure that the fixing screws do not interfere with the movement of the blade and check that the damper operates correctly.

Installation distances

For installation 5.1 ON & OUT, the minimum distance from the wall or ceiling to the damper body is 200 mm. Where multiple ducts cross through a fire wall, there must be a minimum distance of 400 mm between two damper bodies. The damper and any foreign object passing nearby through the fire wall must be separated by a minimum distance of 200 mm.

Installation distances

It is possible to install the damper in a thinner wall provided that an additional layer(s) of fire board is fixed to the wall surface so the damper penetration is sealed to the same length as that tested. The minimum width of the boards added around the damper should be 200 mm. What is more, any thinner walls must be classified according to EN 13501-2:2007 + A1: 2009 for the fire resistance required for the intended use of the product. In the case of an overhanging wall, the additional layers of fire board must be fixed to the steel supporting structure.
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ON & OUT wall installation, EI60S





ON & OUT wall installation, EI60S







ON & OUT wall installation, El60S

Legend:

- F9. Mineral wool section (min. 66 kg/m3) in a wall
- F10. Fireproof coating (BSF/ISOVER) at least 2 mm thick for exposed surfaces
- F11. 35 mm and 160 mm L-shaped 40 × 2 mm sheet metal belt bent into L-shape A2 Insulating front cover IPOR-FD-DN (accessory)
- 1. Fire damper (actuator side)
- 3. Concrete/masonry/brick/aerated concrete wall or ceiling
- 4 Flexible wall (plasterboard)
- 4a. 2 layers of fire resistant plasterboard type F, EN 520 4b Vertical profiles CW
- 4c. Horizontal profiles CW
- 4d. Mineral wool; thickness/cubic density see picture.
- 8. Mineral wool section ULTIMATE Protect Wired Mat 4.0 Alu1/ISOVER (min. 66 kg/m3) inner and outer layer 9 Steel binding wire, 1.6 mm thick
- 10. Screw 3.9 mm × max. 13 mm; for example DIN7504 11 M12 steel threaded rod (1 ×)
- 12. Ceramic tape (A-KERA) width 40 mm, thickness 2 mm
- 13. Sheet metal bracket for suspending damper (MP-MX/HILTI) when using 1 x M12 rod
- 14. Sheet metal bracket for suspending damper (UVH30, Lindab), when using 2 × M10 rods
- 15. M10 threaded steel rod (2 ×)
- 16. M10 nut (4 ×)

Notes:

- v_e. Vertical (wall)
- 5. The rules for the placement of brackets and duct hangers depend on the distance from the damper to the supporting construction LE.
- 7. The distance P is the distance from the blade axis to the damper flange. The distance depends on the type of damper used.
- F2. Plaster/mortar/concrete filler can serve as a replacement for filling material F9. When using plaster/mortar/concrete filler, coating F10 is not required.

ON & OUT wall installation, El60S



Using 1 layer of mineral wool

SUGGESTION: Plaster/mortar/concrete (F2) can be used as an alternative filling material instead of the filler (F9) in the cavity in the wall with the duct, in which case the coating (F10) is not necessary. There are two possible ways to fix the damper: using the MP-MX ring or using the UVH30 ring, see point 3 of the instructions. Prepare the damper for installation by holding it in the opening using ceramic adhesive tape (12) and fix it with a suitable metal ring (13 or 14).

- 1. The opening in the supporting construction must be prepared as shown in the figure. The surfaces of the opening must be clean and even. Openings in flexible walls must be reinforced in line with the standards for plasterboard walls. The dimensions of the opening should be the nominal dimensions of the damper plus an additional clearance. For circular dampers, an opening with diameter D1 should be made.
- 2. Insert the duct into the load-bearing structure together with the damper so that the duct protrudes from the wall by the required distance.
- 3. Push the insulation around the duct (F9) and trim the edges so that it is flush with the wall. Paint the surface of the insulation in line with the wall with a suitable coat of paint (F10) up to 100 mm from the duct so that it covers the insulation and part of the wall. Alternatively, plaster/mortar/concrete can be used as filling material (F2).
- 4. Reinforce the circular duct on both sides of the junction with the wall using MP-MX rings (13) or UVH30 rings (14). Depending on the ring used, the damper should be suspended with:
 - M12 threaded rod (11) when using the Hilti MP-MX ring (13).
 - 2 × M10 threaded rod (15) when using the Lindab UVH30 ring (14) with nuts (16).
- 5. Insulate the parts of the damper and duct between the damper and the wall. Connect the circular damper and the duct with a layer of insulation (17). Fix the insulation to the wall with a suitable fireproof coating (F10). Secure the insulation (17) with binding wire (r 1.6 mm) in the standard way applied when insulating circular ducts, or by using wire clamps (26) to fix the mesh to the top of the insulation (17). The actuator, thermoelectric fuse and inspection access door must not be insulated, with a maximum gap of 15 mm.
- 6. Apply aluminium tape (25) around the front and on all surfaces not covered with aluminium foil.
- 7. If necessary, uncover or clean the damper after installation.
- 8. Ensure that the fixing screws do not interfere with the movement of the blades and check that the damper operates

Installation distances

For the 5.2 ON & OUT installation, the minimum distance from the wall or ceiling to the damper body is 100 mm. Where multiple ducts cross through a fire wall, there must be a minimum distance of 200 mm between two damper bodies. This distance also applies to the distance between a damper and any foreign object passing through the fire wall nearby.

Installation in a thinner wall than tested

It is possible to install the damper in a thinner wall provided that an additional layer(s) of fire board is fixed to the wall surface so the damper penetration is sealed to the same length as that tested. The minimum width of the boards added around the damper should be 200 mm. What is more, any alternative thinner walls must be classified according to EN 13501-2:2007 + A1: 2009 for the fire resistance required for the intended use of the product. In the case of an overhanging wall, the additional layers of fire board must be fixed to the steel supporting structure.

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ON & OUT wall installation, EI60S



ON & OUT wall installation, EI60S









ON & OUT wall installation, El60S

Legend:

- F9. Mineral wool section (min. 66 kg/m3) in a wall
- F10. Fireproof coating (BSF/ISOVER) at least 2 mm thick for exposed surfaces 1 Fire damper (actuator side)
- 3. Concrete/masonry/brick/aerated concrete wall or ceiling
- 4. Flexible wall (plasterboard)
- 4a. 2 layers of fire resistant plasterboard type F, EN 520 4b Vertical profiles CW
- 4c. Horizontal profiles CW
- 4d. Mineral wool; thickness/cubic density see picture.
- 11. M12 steel threaded rod (1 ×)
- 12. Ceramic tape (A-KERA) width 40 mm, thickness 2 mm
- 13. Sheet metal bracket for suspending damper (MP-MX, HILTI) when using 1 x M12 rod
- 14. Sheet metal bracket for suspending damper (UVH30, Lindab), when using 2 × M10 rods
- 15. M10 threaded steel rod (2 ×)
- 16. M10 nut (4 ×)
- 17. Mineral wool ULTIMATE Protect Slab 4.0 Alu1/ISOVER (min. 66 kg/m3)
- 25. Aluminium tape around the front and at places not covered with aluminium foil 26 Wire bracket for fastening U-ProtectWiredMat

Notes:

- $v_{_{e}}$ Vertical (wall)
- 5. The rules for the placement of brackets and duct hangers depend on the distance from the damper to the supporting construction LE.
- 7. The distance P is the distance from the blade axis to the damper flange. The distance depends on the type of damper used.
- F2. Plaster/mortar/concrete filler can serve as a replacement for filling material F9. When using plaster/mortar/concrete filler, coating F10 is not required.

FDR-3G-KR Circular fire damper



Circular fire damper FDR-3G-KR



Product Parts

FDR-3G...KR P14 P15 P16 P7 C C P3 P3 P1 P2 P5 P3 P6 P4

CC P9 P11 P12 P13 P13 P9 P10

Description

Fire dampers with round mounting kits up to 630 mm provide passive fire protection, designed to facilitate compartmentation and prevent the spread of toxic gases, smoke, and fire. The FDR-3G-KR fire damper is designed for easy installation. Standard fire dampers are designed and certified in accordance with standard EN 15650 and tested according to EIS criteria in compliance with standard EN 1366-2. All fire dampers are supplied by default with a manual or motorised operating mechanism. Optionally, the dampers can be supplied with a power supply and communication unit.

IMPORTANT: The installation kit cannot be supplied separately! It is delivered pre-assembled on the damper.





- P1. Blade
- P2. Housing
- P3. Manual activation mechanism (H0, H...), (KH0, KH...)
- P4. Servomotor activation mechanism (B...
- P4-B. Servomotor-operated activation
 - mechanism (BELIMO + BSIA)
- P.5 Inspection hatch cover
- P6. Electrothermal fuse (BAT72, TA-72)
- P7. BSIA (mandatory with the B274T-W servomotor)
- P14. Base plate kit
- P15. Cover plate (PROMAT)
- P16. Intumex
- P9. Release and test button
- P10. Switch
- P11. Open position



Dimensions

Free area

S.L.
$$(dm^2) = \left(\pi \left(\frac{DN-2}{2} - H_{cg} - t\right)^2 - (DN-2-t)xA\right) \cdot 10^{-4}$$

FA = free area ND = nominal diameter B = blade thickness H_{cg} = cold gasket housing t = sheet metal thickness

				•	•				DN								
	100	125	140	150	160	180	200	225	250	280	315	355	400	450	500	560	630
S.L.(m ²)	0,004	0,008	0,010	0,012	0,014	0,019	0,024	0,031	0,040	0,051	0,066	0,084	0,109	0,137	0,172	0,219	0,281
A (mm)	20	20	20	20	20	20	20	20	20	20	20	24	24	30	30	30	30
H _{cg} (mm)	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4
t (mm)	0,9	0,9	0,9	0,9	0,9	0,9	0,9	0,9	0,9	0,9	0,9	0,9	0,9	0,9	0,9	0,9	0,9

Dimensions

FDR-3G...KR E <u>~150</u> ≤125 (B...) 120 ø6,2 30 DN-2 6 \geq 45 45 ≤85 (H0;H...) 170 R₂ 450 W_p Ē 120 ~150 ≤125 (B...) 30 DN-2 Wk 0 O Ŵ ŀ (+KH0, KH...) R₂ ≤115 45 WР 45 170 450



Dimensions

									DN (mm)									
	100	125	140	150	160	180	200	225	250	280	315	355	400	450	500	560	600	630
ØD ₁	200		250			30	00	3	50	4	00	450	500	550	600	660	700	730
ØD ₂	187	237			2	87	3	37	3	87	437	487	537	587	647	687	717	
W _P	350	375	390	400	410	430	450	475	500	530	565	605	650	700	750	810	850	880

Blade protrusion

									DN (mm)								
	100	125	140	150	160	180	200	225	250	280	315	355	400	450	500	560	630
R1	-300	-287,5	-280	-275	-270	-260	-250	-237,5	-225	-210	-192,5	-172,5	-150	-125	-100	-70	-35
R²	-67	-54,5	-47	-42	-37	-27	-17	-4,5	8	23	40,5	60,5	83	108	133	163	198

Weight

m									DN (mm)								
(kg ±5%)	100	125	140	150	160	180	200	225	250	280	315	355	400	450	500	560	630
КН0, Н	3,3	3,4	3,6	3,7	3,8	4,2	4,4	4,8	5,3	5,8	6,4	7,3	8,3	11,1	12,3	14,6	17,0
В	4,8	4,9	5,1	5,2	5,3	5,7	5,9	6,3	6,8	7,3	7,9	8,8	9,8	11,9	13,1	15,4	17,8

Installation



Tolerance = ± 10 mm

Notes:

- 4. Kit installation with an Installation Kit
- v_e Vertical wall

Installation, maintenance and operation

Some parts of the damper may have sharp edges - gloves must be worn when handling the damper and during installation to prevent injury. To avoid electric shock, fire or any other damage that could result from the improper use or operation of the damper, it is important to:

- 1. Ensure that the installation is carried out by a qualified person.
- 2. Precisely follow the instructions written and represented in the manual.
- 3. Inspect the damper in accordance with the manual.

4. Check the fire damper functions according to the section "Checking the fire damper functions correctly" before installation. This procedure prevents a damper that has been damaged during transport or handling from being installed.

Information on installation, maintenance and operation is available at www.koolair.com.

Rules for installation

- The duct connected to the fire damper must be supported or hung so that the damper does not support its weight. The damper must not support any part of the building or adjoining wall in a way that could damage the damper or cause a fault as a consequence. The installation of an expansion joint is recommended on either side of the damper.
- The damper actuator mechanism can be placed on either side of the wall, but should be positioned to ensure easy access during inspection.
- The distance between the fire damper bodies is defined by the base plate of the kit. The smallest distance between two dampers with a kit is the distance given when the base plates of the two kits touch.
- The distance between the wall/ceiling is defined by the base plate of the Kit. The smallest distance between the wall/ ceiling and a damper with a kit is when the base plate of the kit is touching the wall/ceiling.
- The fire damper must be installed in a fire compartmentation structure in such a way that the damper blade in its closed position is located inside this structure. The base plate of the kit on the damper body represents a plane where the supporting structure begins.
- According to EN 1366-2, for any resistance, the minimum thickness of the supporting construction must be maintained at least 200 mm around the installation opening.

IN ACCORDANCE WITH EN 15650, AND NF S61-932 FOR NF AUTHORISED INSTALLATIONS, ALL FIRE DAMPERS MUST BE INSTALLED IN ACCORDANCE WITH THE MANUFACTURER'S INSTALLATION INSTRUCTIONS!



Installation with an installation kit

IMPORTANT: The installation kit cannot be supplied separately! It is delivered pre-assembled on the damper.

- 1. The opening in the supporting construction must be prepared as shown in the figure. The surfaces of the opening must be clean and even.
- 2. Openings in flexible walls must be reinforced in line with the standards for plasterboard walls. The dimensions of the opening should be the nominal dimensions of the damper plus an additional clearance. For circular dampers, an opening with diameter D1 should be made.
- 3. This is the simplest method of installation. Insert the damper into the opening and fix the front panel with suitable screws (recommended screw diameter 5.5 mm e.g. DIN7981) in the pre-drilled holes.
- 4. If necessary, uncover or clean the damper after installation.
- 5. Check damper operation

Standard Distances

The distances are defined by the base plate of the kit. The minimum distance is that given when the base plate of the kit is in contact with the ceiling or side wall. This means that the distance from the wall or ceiling to the duct axis is Wp/2. Where multiple ducts cross through a fire wall, the minimum distance between two duct axes is Wp, which indicates that the base plates of the kits are touching. The base plate of the kit also serves as a distance limiter for any nearby foreign objects crossing the fire wall.

Installation in a thinner wall than tested

It is possible to install the damper in a thinner wall provided that an additional layer(s) of fire board is fixed to the wall surface so the damper penetration is sealed to the same length as that tested. The minimum width of the boards added around the damper should be 200 mm. What is more, any alternative thinner walls must be classified according to EN 13501-2:2007 + A1: 2009 for the fire resistance required for the intended use of the product. In the case of an overhanging wall, the additional layers of fire board must be fixed to the steel supporting structure.



Installation with an installation kit



FDR-3G-KR



Installation with an installation kit

		D	N (mm)	
	710	800	900	1000
R1	3	48	98	148
R²	191	236	286	336



Fire protection

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Installation with an installation kit



Legend:

- F1. Screw ≥ 5.5 mm DIN7981 or suitable plug and 6 mm screw
- 1. Fire damper with KIT (factory fitted)
- 2. Base plate of Kit fixed directly to the wall
- 3. Concrete/masonry/aerated concrete wall or ceiling

Notes:

v Vertical (wall)

P13

P10 P9

P3

P7

 \geq

Compuerta cortafuegos circular FDR-3G-KS



Product Parts

FDR-3G...KS

P1/P2

P5

P3

P14

Description

Fire dampers with square mounting kits up to 630 mm provide passive fire protection, designed to facilitate compartmentation and prevent the spread of toxic gases, smoke, and fire. The FDR-3G-KS fire damper is designed for easy installation. Standard fire dampers are designed and certified in accordance with standard EN 15650 and tested according to EIS criteria in compliance with standard EN 1366-2. All fire dampers are supplied by default with a manual or motorised operating mechanism.

Optionally, the dampers can be supplied with a power supply and communication unit. IMPORTANT: The installation kit cannot be supplied separately! It is delivered pre-assembled on the damper.





- P1. Blade P2. Housing
- P3. Manual activation mechanism (H0, H...), (KH0, KH...)
- P4. Servomotor activation mechanism (B...
- P4-B. Servomotor-operated activation mechanism
- (BELIMO + BSIA) 👁 P5. Inspection hatch cover
- P6. Electrothermal fuse (BAT72, TA-72)
- P7. BSIA (mandatory with the B244T-W servomotor)
- P14. Base plate kit
- P15. Cover plate (PROMAT)
- P16. Intumex
- Release and test button P9.
- P10. Switch
- P11. Open position
- P12. Closed position
- P13. 10 mm Allen key (not included)



P6

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Dimensions

Free area

S.L.
$$(dm^2) = \left(\pi \left(\frac{DN-2}{2} - H_{cg} - t\right)^2 - (DN-2-t)xA\right) \cdot 10^{-4}$$

FA = free area

ND = nominal diameter

B = blade thickness

H_{cg}= cold gasket housing t = sheet metal thickness

									DN								
	100	125	140	150	160	180	200	225	250	280	315	355	400	450	500	560	630
S.L.(m ²)	0,004	0,008	0,010	0,012	0,014	0,019	0,024	0,031	0,040	0,051	0,066	0,084	0,109	0,137	0,172	0,219	0,281
A (mm)	20	20	20	20	20	20	20	20	20	20	20	24	24	30	30	30	30
H _{cg} (mm)	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4
t (mm)	0,9	0,9	0,9	0,9	0,9	0,9	0,9	0,9	0,9	0,9	0,9	0,9	0,9	0,9	0,9	0,9	0,9



FDR-3G...KS



Blade protrusion

									DN (mm)								
	100	125	140	150	160	180	200	225	250	280	315	355	400	450	500	560	630
R1	-300	-287,5	-280	-275	-270	-260	-250	-237,5	-225	-210	-192,5	-172,5	-150	-125	-100	-70	-35
R ²	-67	-54,5	-47	-42	-37	-27	-17	-4,5	8	23	40,5	60,5	83	108	133	163	198

Weight

m									DN (mm)								
(kg ±5%)	100	125	140	150	160	180	200	225	250	280	315	355	400	450	500	560	630
КН0, Н	3,3	3,4	3,6	3,7	3,8	4,2	4,4	4,8	5,3	5,8	6,4	7,3	8,3	11,1	12,3	14,6	17,0
В	4,8	4,9	5,1	5,2	5,3	5,7	5,9	6,3	6,8	7,3	7,9	8,8	9,8	11,9	13,1	15,4	17,8

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Installation



* Tolerance = ± 10 mm

Legend

- 4 Kit with an installation kit
- vertical Wall

Installation, maintenance, and operation

Some parts of the damper may have sharp edges - gloves must be worn when handling the damper and during installation to prevent injury. To avoid electric shock, fire or any other damage that could result from the improper use or operation of the damper, it is important to:

- 1. Ensure that the installation is carried out by a qualified person.
- 2. Precisely follow the instructions written and represented in the User Manual.
- 3. Inspect the damper in accordance with the User Manual.
- 4. Check the fire damper functions according to the section "Checking the fire damper functions correctly" before installation. This procedure prevents a damper that has been damaged during transport or handling from being installed.

Information on installation, maintenance and operation is available at www.koolair.com.

Rules for installation

- The duct connected to the fire damper must be supported or hung so that the damper does not support its weight. The damper must not support any part of the building or adjoining wall in a way that could damage the damper or cause a fault as a consequence. The installation of an expansion joint is recommended on either side of the damper.
- The damper actuator mechanism can be placed on either side of the wall but should be positioned to ensure easy access during inspection.
- The distance between the fire damper bodies is defined by the base plate of the kit. The smallest distance between two dampers with a kit is the distance given when the base plates of the two kits touch.
- The distance between the wall/ceiling is defined by the base plate of the Kit. The smallest distance between the wall/ ceiling and a damper with a kit is when the base plate of the kit is touching the wall/ceiling.
- The fire damper must be installed in a fire compartmentation structure in such a way that the damper blade in its closed position is located inside this structure. The base plate of the kit on the damper body represents a plane where the supporting structure begins.
- According to EN 1366-2, the minimum thickness of the supporting construction must be maintained at least 200 mm around the installation opening, regardless of fire resistance.

IN ACCORDANCE WITH EN 15650, AND NF S61-932 FOR NF AUTHORISED INSTALLATIONS, ALL FIRE DAMPERS MUST BE INSTALLED IN ACCORDANCE WITH THE MANUFACTURER'S INSTALLATION INSTRUCTIONS!



Mounting with an installation kit

IMPORTANT: The installation kit cannot be supplied separately! It is delivered pre-assembled on the damper.

1. The opening in the supporting construction must be prepared as shown in the figure. The surfaces of the opening must be clean and even.

2. The dimensions of the opening should be the nominal dimensions of the damper plus an additional clearance. In the case of rectangular dampers, the opening shall have dimensions W1 × W1.

3. Openings in flexible walls must be reinforced in line with the standards for plasterboard walls. In addition, the opening in the flexible wall must be reinforced in line with the standards for plasterboard walls and the perimeter of the wall interior must be lined with a double layer of 12.5 mm thick plasterboard (see detail).

4. This is the simplest method of installation. Insert the damper into the opening and fix the base plaste of the Kit with suitable screws (recommended screw diameter 5.5 mm - e.g. DIN7981) in the pre-drilled holes.

5. If necessary, uncover or clean the damper after installation.

6. Check damper operation

Standard Distances

The distances are defined by the base plate of the kit. The minimum distance is that given when the base plate of the kit is in contact with the ceiling or side wall. This means that the distance from the wall or ceiling to the duct axis is Wp/2. Where multiple ducts cross through a fire wall, the minimum distance between two duct axes is Wp, which indicates that the base plates of the kits are touching. The base plate of the kit also serves as a distance limiter for any nearby foreign objects crossing the fire wall.

Installation in a thinner wall than tested

It is possible to install the damper in a thinner wall provided that an additional layer(s) of fire board is fixed to the wall surface so that the damper penetration is sealed to the same length as that tested. The minimum width of the boards added around the damper should be 200 mm.

What is more, any alternative thinner walls must be classified according to EN

13501-2:2007 + A1: 2009 for the fire resistance required for the intended use of the product. In the case of an overhanging wall, the additional layers of fire board must be fixed to the steel supporting structure.

Mounting with an installation kit

									DN (mm)									
	100	125	140	150	160	180	200	225	250	280	315	355	400	450	500	560	600	630
ØD,	200	250			30	00	35	50	4(00	450	500	550	600	660	700	730	
ØD ₂	187	237			28	37	33	37	38	37	437	487	537	587	647	687	717	
W _P	350	375	390	400	410	430	450	475	500	530	565	605	650	700	750	810	850	880



Mounting with an installation kit





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Mounting with an installation kit



Legend:

- F1. Screw ≥ 5.5 mm DIN7981 or suitable plug and 6 mm screw
- 1. Fire damper with KIT (factory fitted)
- 2. Base plate of Kit fixed directly to the wall
- 3. Concrete/masonry/aerated concrete wall or ceiling
- 4. Flexible wall (plasterboard)
- 4a. 2 layers of fire-resistant plasterboard type F, EN 520
- 4b. Vertical profiles CW 4c Horizontal profiles CW
- 4d. Mineral wool; thickness/cubic density see picture.

Notes:

v_e Vertical (wall)



Electrical connections

Type of activation KH0 CE

This type of actuating mechanism has no electrical components.

Type of activation H2 CE

IMPORTANT: Danger of electric shock! Disconnect the power supply before working on any electrical equipment. Only qualified electricians should work on the electrical installation.

Microswitch: Power supply: 125/250V AC or 12/24V DC Electrical parameters: 3A.

- For safety, power supplied via isolation transformer.
- Energy consumption must be monitored.



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Electrical connections

Type of activation H5-2 CE

IMPORTANT: Danger of electric shock!

Disconnect the power supply before working on any electrical equipment. Only qualified electricians should work on the electrical installation.

Microswitch: Power supply: 125/250V AC or 12/24V DC Electrical parameters: 3A Impulse electromagnet: Power supply: AC (50/60 Hz)/DC 24 V Electrical parameters: 50 VA, 10% load factor (maximum 30 seconds in operation)

- 50 VA = Nominal activation power, maximum permissible magnetic load = 300 VA
- For safety, power supplied via isolation transformer.
- Power consumption must be observed!



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Electrical connections

Type of activation H6-2 (E

IMPORTANT: Danger of electric shock! Disconnect the power supply before working on any electrical equipment. Only qualified electricians should work on the electrical installation.

Microswitch: Power supply: 125/250V AC or 12/24V DC Electrical parameters: 3A Shunt release electromagnet: Power supply: 230V AC, 50/60 Hz Electrical parameters: 50 VA, 10% load factor (maximum 30 seconds in operation)

- 50 VA = nominal activation power, maximum permissible magnetic load = 300 VA
- Caution! Main supply voltage!
- A device is required to disconnect the conductors from the poles (minimum contact gap of 3 mm) to isolate them from the power supply.
- Energy consumption must be monitored!





Electrical connections



Type of activation B230T

IMPORTANT: Danger of electric shock!

Disconnect the power supply before working on any electrical equipment. Only qualified electricians should work on the electrical installation.

Actuator supply: 230V AC, 50/60 Hz

NOTES:

- · Caution! Main supply voltage!
- A device is required to disconnect the conductors from the poles (minimum contact gap of 3 mm) to isolate them from the power supply.
- It is possible to connect several actuators in parallel.
- Energy consumption must be monitored!



AC 230 V, open-close CE

Legend

- 1. Black cable
- 2. Red cable (white for BF24-T-ST)
- S1. Violet cable (white for BF24-T-ST)
- S2. Red cable (white for BF24-T-ST)
- S3. White cable (white for BF24-T-ST)
- S4. Orange cable (white for BF24-T-ST)
- S5. Pink cable (white for BF24-T-ST)
- S6. Grey cable (white for BF24-T-ST)
- Tf. Fusible link



Electrical connections

Type of activation B24T-W

IMPORTANT: Danger of electric shock!

Disconnect the power supply before working on any electrical equipment. Only qualified electricians should work on the electrical installation.

Actuator supply: 24 V AC (50/60 Hz)/DC

- For safety, power supplied via isolation transformer.
- · It is possible to connect several actuators in parallel.
- · Energy consumption must be monitored!



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Electrical connections

Type of activation KH0

This type of actuating mechanism has no electrical components.

Type of activation KH2 CE NF / KH3 CE (U-B)

IMPORTANT: Danger of electric shock! Disconnect the power supply before working on any electrical equipment. Only qualified electricians should work on the electrical installation.

Microswitch:

Power supply: AC/DC 12/24/48 V; AC 125 V; AC 230 V (KH3 Upon request) contact switches.

- For safety, power supplied via isolation transformer.
- Energy consumption must be monitored.





Electrical connections

Type of activation KH5-2 (U-B) / KH6-2 (U-B)

IMPORTANT: Danger of electric shock!

Disconnect the power supply before working on any electrical equipment. Only qualified electricians should work on the electrical installation.

Microswitch:

Power supply: AC/DC 12/24/48 V; AC 125 V; AC 230 V (upon request) contact switches.

Impulse electromagnet Electrical parameters: 3,5 W

NOTES:

• 3,5 W: Nominal activation power



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Electrical connections

Type of activation KH5... + RMK-4.0 / KH6... + RMK-4.0 =(KHM)

IMPORTANT: Danger of electric shock!

Disconnect the power supply before working on any electrical equipment. Only qualified electricians should work on the electrical installation.

Actuator supply: 24/48 AC/DC.

NOTES:

- Caution! Main supply voltage!
- A device is required to disconnect the conductors from the poles (minimum contact gap of 3 mm) to isolate them from the power supply.
- It is possible to connect several actuators in parallel



Magnet Max. 230V AC Signal Max. 230V AC Motor 24V / 48V DC Magnet Max. 230V AC Signal Max. 230V AC Motor 24V / 48V DC

Electrical connections

Type of activation KH...+ RMK-4.0

Electrical connections for fire dampers type KH0, KH2U, KH2B, KH5-2U et KH5-2B (with or without RMK4.0) :

Connection must be made inside a Famatel 3051 box with watertight cable glands (at least IP42 according to EN 60529)



Any unused cable gland must be replaced by a plastic plug ensuring a protection index to at least IP42 according to EN 60529.

Each cable gland must be adapted to the diameter of the cable passing through it.

Electrical connections

Type of activation B24T-W + Bsia



IMPORTANT: Danger of electric shock!

Disconnect the power supply before working on any electrical equipment. Only qualified electricians should work on the electrical installation.

Actuator supply: 24 V AC (50/60 Hz)/DC

NOTES:

- For safety, power supplied via isolation transformer.
- It is possible to connect several actuators in parallel.
- Energy consumption must be monitored!



Legend :

- 1. Black cable
- 2. Red cable (white for BF24-T-ST)
- S1. Violet cable (white for BF24-T-ST)
- S2. Red cable (white for BF24-T-ST)
- S3. White cable (white for BF24-T-ST)
- S4. Orange cable (white for BF24-T-ST)
- S5. Pink cable (white for BF24-T-ST)
- S6. Grey cable (white for BF24-T-ST)
- Tf. Fusible link

Electrical connections for fire dampers with Belimo motor + BSIA

Connection must be made inside BSIA box with watertightcable glands (at least IP42 according to EN 60529). Any unused cable gland must be replaced by a plastic plug ensuring a protection index to at least IP42 according to EN 60529.

Each cable gland must be adapted to the diameter of the cable passing through it.

Operating manual

Warning

To avoid injury, always wear gloves and make sure the blade movement area is kept clear while working with the damper. NEVER OPEN THE INSPECTION ACCESS DOOR WHEN AIR IS FLOWING IN THE DUCT CONNECTED TO THE FIRE DAMPER.

Checking damper operation

Manual activation mechanism:

- 1. Open the damper use a 10 mm Allan key (P13) to turn the red lever (P10). Turn the lever so that the arrow points to the "OPEN" position (P11). The lever must remain in the "OPEN" position and the microswitch that indicates the open position must be pressed in (if fitted).
- 2. Closing the damper release the mechanism by pressing the red release button (P9); the arrow on the red lever will move to the "CLOSED" position (P12) and will remain locked in this position. The microswitch that indicates the open position must be pressed in (if fitted).
- 3. Open the damper use a 10 mm Allan key (P13) to turn the red lever (P10). Turn the lever so that the arrow points to the "OPEN" position. The lever must remain in the "OPEN" position and the microswitch that indicates the open position must be pressed in (if fitted).

The actuating mechanism is operated by a spring return actuator:

- 1. The fire damper should open automatically after the actuator circuit is closed the arrow on the actuator shaft should be at 90°.
- 2. Press the control switch (P9) on the thermoelectric fuse and hold it down until the fire damper is completely closed the arrow on the actuator shaft should be at 0°.
- 3. Release the control switch on the thermoelectric fuse. The fire damper should be fully open the arrow on the actuator shaft should be at 90° the operating position.

Operating manual

After installation, the damper must be set to its operating position - open the fire damper.

The actuating mechanism is operated by a spring return actuator.

Connect the electric actuator to the corresponding power supply (see Electrical Connection section). The electric motor will be activated and the damper set to its opening position.

Manual activation mechanism:

Turn the red lever to the "OPEN" position. The damper must remain in the open position.

Inspecting the damper

The activator holds the damper in standby for its entire service life, in accordance with the manual issued by the manufacturer. The damper must not be altered in any way or any changes made to its structure without the manufacturer's consent. The operator must perform periodic checks of the damper in accordance with the established regulations and standards. Checks should be made at least once every 12 months. Checks must be carried out by an employee who has been specifically trained for this purpose. The condition of the fire dampers determined during the inspection must be recorded in the operating logbook, together with the date of the inspection and the name, surname and signature of the employee who performed the inspection.

Immediately after installation and activation of the damper, it must be checked in the same way as for the 12-month inspections mentioned above. A visual check ensures that there is no visible damage to the inspected parts of the damper. The damper casing and the actuating mechanism on the outside of the damper must be checked. Open the inspection access door to perform a visual inspection of the internal parts of the damper. For small size dampers the mechanism can be dismantled for inspection. The blade must always be closed when the removable mechanism is put back into the damper.

The following must be checked: the inner casing of the damper, the fusible link, the seals, the foam substance, the condition of the damper and how precisely it rests against the non-return device in the closed position. There must be no foreign objects or layer of impurities from the air distribution systems inside the damper.

Recommended inspection steps according to EN 15 650

- 1. Identification of the damper
- 2. Date of inspection
- 3. Inspection of the electrical connection of the actuation mechanism (if applicable)
- 4. Inspection of the damper for cleanliness and possible need for cleaning (where necessary)
- 5. Inspection of the condition of the blade and sealing, with any alterations and checks (where necessary)
- 6. Inspection to ensure the fire damper closes properly.
- 7. Inspection to ensure the damper functions correctly: opened and closed by the control system, physical examination of the damper behaviour and any alterations and checks (where necessary).
- 8. Inspection to ensure the limit switches function correctly in the open and closed positions and any alterations and checks (where necessary)
- 9. Inspection to ensure the damper fulfils its function as part of the control system (where necessary)
- 10. Inspection to ensure the damper remains in its standard operating position.
- 11. The damper is usually part of a system, in which case it is necessary to ensure that the entire system operates as designed and as established in the requirements published by the system designer.

We reserve the right to make any changes to the product without prior notice provided as long as these changes do not affect the quality of the product or the required parameters.

IN ACCORDANCE WITH NF STANDARD S61-933 FOR THE OPERATION AND MAINTENANCE OF FIRE DAMPERS.



Tests and Certifications

The FDR-3G series fire dampers meet the requirements of Regulation (EU) No. 305/2011 of the European Parliament and of the Council of 9 March 2011 (the Construction Products Regulation or CPR), and those of the harmonised standard EN 15650 "Ventilation for buildings – Fire dampers".

All our dampers undergo testing by accredited bodies. Our fire damper certifications are based on the reports from these tests.

Test standard: EN 1366-2 "Fire resistance tests for service installations - Part 2: Fire dampers"

Classification according to EN 13501-3 "Fire classification of construction products and building elements – Part 3: Classification using data from fire resistance tests on products and elements used in building service installations: fire-resisting ducts and fire dampers"



The CPR certificate guarantees the conformity of performance.

Grupo Koolair entrusts testing to nationally and internationally accredited bodies or those registered with the ILAC (International Laboratory Accreditation Cooperation).

Certification body:

1396 - FIRES, s.r.o. Osloboditeľov 282 059 35 Batizovce, Slovakia Tel.: +421 52 28516 11 www.fires.sk
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Tests and Certifications

In addition to the above mentioned requirements, the FDR-3G, FDR-3KR and FDR-3G KS models also comply with French regulations NF-S 61-937-1 and NF-S 61-937-5, enabling their certification under the NF 537 standard:



www.marque-nf.com

This NF mark certifies:

- Compliance with NF S 61-937 standard "Fire Safety Systems Safety Devices Actuated by Control and Monitoring System". Parts 1 and 5 for dampers.
- Presumed conformity with the Order of 22 March 2004, amended on 14 March 2011, for the fire resistance classification.
- The values of the characteristics stated in this manual.

Certification body:

AFNOR Certification 11, Rue Francis de Pressensé 93571 La Plaine Saint Denis Cedex Tel.: +33(0)1.41.62.80.00 Fax: +33(0)1.49.17.90.00 Website: http://www.afnor.org y http://www.marque-nf.com email: certification@afnor.org

Holder:

Safeair, S.L. (Spain) Avda. San Isidro, nave C-3 45223 Seseña – TOLEDO



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CEN-FDR-3G-1224-03



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