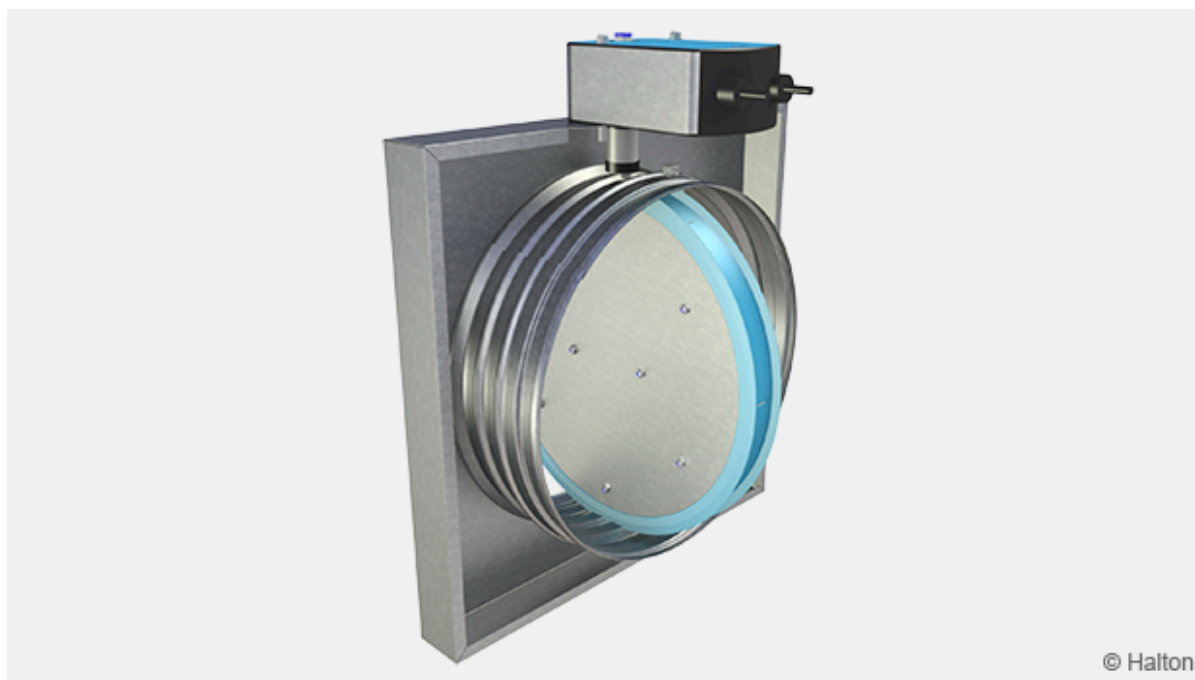


# Halton FDI – Fire damper (EI 60 S)



## Overview

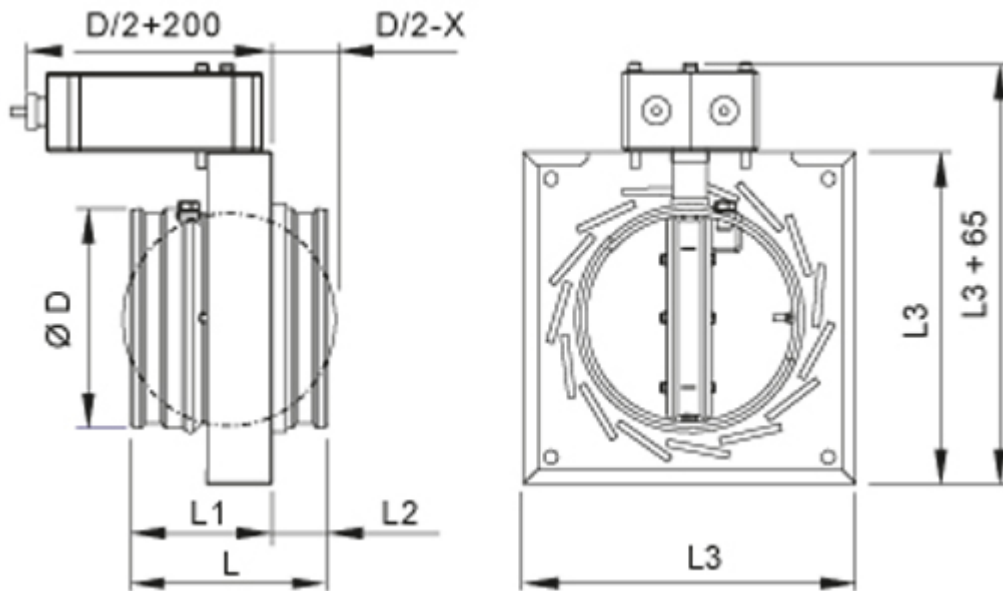
- CE marked according to the product standard EN15650:2010 and tested according to the fire test standard EN 1366-2
- External quality control management by the Technical Research Centre of Finland, VTT
- Fire resistance class: **EI 60 (v<sub>e</sub> h<sub>o</sub> i <-> o) S** and **E 90 (h<sub>o</sub> i <-> o) S**
- Installation on the wall with shaft oriented horizontal or vertical
- Declaration of Performance 10002-CPR-2013/07/01
- Approved for installation in concrete, masonry and flexible (gypsum board or similar) walls and ceilings between the fire compartments
- Double sealing on the blade to ensure the tightness class 4 according to EN 1751
- Casing tightness class C according to EN 1751
- Damper closing test performed at 15 m/s duct velocity
- Suitability for use in ducts with a maximum pressure of 3300 Pa
- Installation in circular ventilation ducts of 100...630 mm
- With electrical actuator or mechanical spring release

## Accessories

- Safety mesh
- Limit switch for mechanical spring release
- Factory made pre fire break grouting

# Dimensions and weight

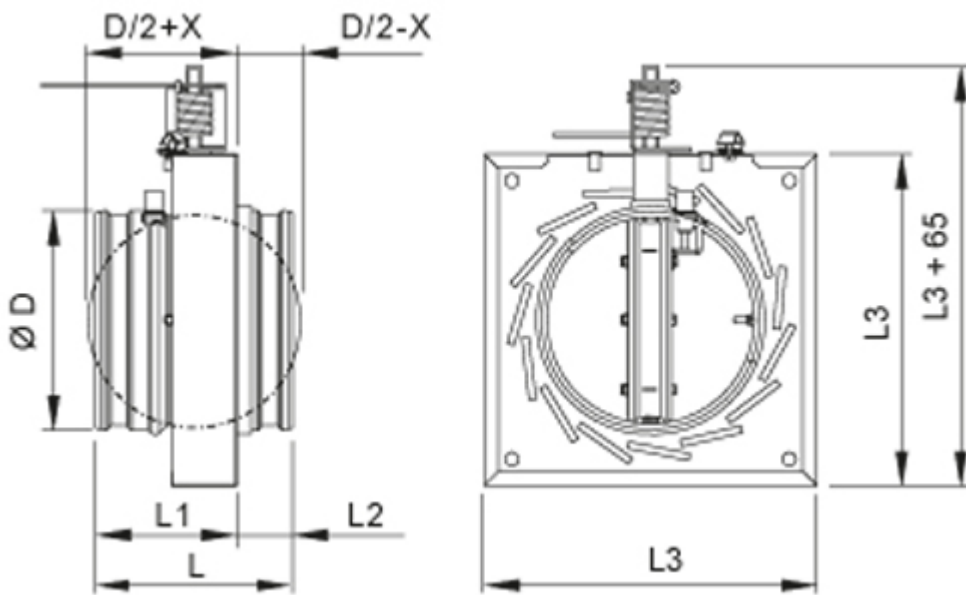
## Electric actuator



NS	ØD	L	L1	L2	L3	X
100	99	145	105	40	183	40
125	124	145	105	40	208	40
160	159	145	105	40	242	40
200	199	145	105	40	283	40
250	249	145	105	40	333	40
315	314	145	105	40	398	40
400	399	245	135	110	480	100
500	499	245	135	110	580	100
630	629	245	135	110	710	100

The size of the installation hole is  $\text{ØD} + 20 \text{ mm}$

## Mechanical actuator



Detailed installation instructions, as well as an installer's installation certificate form, are supplied with each product.

For further information see section Documents / Installation.

## Quantity of fire break mastic

		GBG	WÜRTH	HILTI
NS	liter/size/order	kg/size/order	kg/size/order	kg/size/order
100	1.23	0.98	0.98	1.23
125	1.49	1.19	1.19	1.49
160	1.85	1.48	1.48	1.85
200	2.35	1.88	1.88	2.35
250	2.99	2.39	2.39	2.99
315	3.92	3.13	3.13	3.92
400	4.30	3.44	3.44	4.30
500	5.56	4.45	4.45	5.56
630	7.60	6.08	6.08	7.60

	GBG	WÜRTH	HILTI
kg/sack	20	10	20
liter/sack	25	12	20

## Weight (kg)

NS	MA	MO	MA + FB	MO + FB
100	1.05	2.50	2.03	3.48
125	1.30	2.70	2.49	3.89
160	1.70	3.15	3.18	4.63
200	2.20	3.60	4.08	6.38
250	3.05	4.50	5.44	6.89
315	4.15	5.60	7.28	8.73
400	6.80	8.25	10.24	11.69
500	9.50	10.95	13.95	15.40
630	14.05	15.50	20.13	21.58

**MA** = Mechanical actuator    **MO** = Electric actuator    **FB** = Factory made prefire mastic

## Material

Part	Material
Casing	Galvanised steel
Blade	Galvanised steel/Heat-insulating panel structure
Blade gasket	Silicone
Expanding seal	Graphite mass
Closing spring (mechanical actuator)	Stainless steel
Fuse (mechanical actuator)	Brass
Duct gaskets	1C-polyurethane hybrid
Factory made pre fire break grouting (FB)	Sealfire W1000 (Würth)

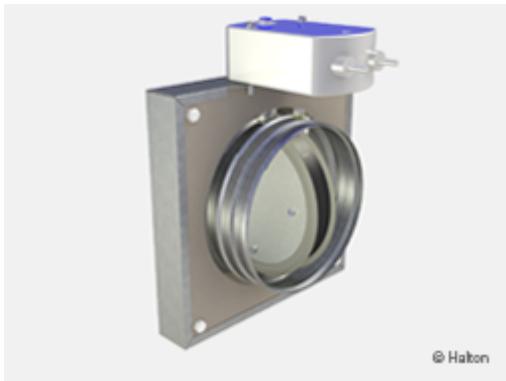
# Operating models

Accessory	Code	Description	Electric actuator	Manual actuator
Safety mesh on one side	N1	Galvanised steel (10×10 mm) Installed on actuator side	X	X
Safety mesh on two sides	N2	Galvanised steel (10×10 mm)	X	X
Fuse	FU	Thermal release at 72 °C		X
Limit switch	MS	Closed position indication, enclosure class IP65		X
Factory (Halton) made pre fire break grouting	FB	Sealfire W1000 (Würth)	X	X

## Note!

The Halton FDI fire damper's CE approval is valid when the installation flange filled to the edges with fire prevention mastic on site. For further information, see tab Documents / Installation.

The CE approval is also valid when the fire break grouting is made by Halton factory for FDI fire damper installation flange (FB).



**Fig.1.** Factory made pre fire break grouting (FB)

## Electric actuator

In the electric actuator system when a signal from building automation reaches the actuator or the fuse reacts to a rise in temperature (72 °C) power is switched off and the spring closes the blade automatically. When the supply power is turned back on (e.g. during testing), the blade opens automatically. The actuator is equipped with built-in limit switches for both open and closed position.

The Halton FDI fire damper with 24V power supply is recommended to be connected to the Halton Safe Management 2.0 (SM2) control system. This system enables the use of smoke detectors in ductwork or room spaces. The Halton FDI fire damper can also be connected to other commonly used building automation systems.

## Actuator options

N1	GNA126.1E/T12 (72 °C), 24 V, 7 Nm, with limit switch
N2	GNA326.1E/T12 (72 °C), 230 V, 7 Nm, with limit switch

## Mechanical actuator (MA)

The fuse reacts to the rise of temperature (72 °C) and the spring closes the blade automatically. It needs to be opened manually.

### Limit switch (MS)

The limit switch indicates damper blade position, sending an impulse to other remote-release fire dampers if the blade is closed, tripping an alarm in the monitoring system and/or stops/starts fans, depending on the designed system. The limit switch has no influence on the thermal fuse or release mechanism.

## Function

The Halton FDI is a circular fire damper, which prevents fire and smoke from spreading in the ductwork of ventilation systems between fire compartments.

The Halton FDI is approved for vertical ( $v_e$ ) and horizontal ( $h_o$ ) installation in heavy and light-weight structures fulfilling the fire resistance class EI 60 ( $v_e h_o i \leftrightarrow o$ ) S requirements. It is also approved for horizontal ( $h_o$ ) installation in concrete floors/ceilings to fulfill the fire resistance class E 90 ( $h_o i \leftrightarrow o$ ) S requirements.

The fire damper is made of fireproof materials. Once the fire damper has closed, the double sealing closes the duct tightly, effectively preventing the spread of fire gases through the ventilation ductwork. The flexible silicone seal is tightening the blade at lower temperatures, while the graphite mass seal expands to insulate the system at temperatures above 150 °C.

The fire damper is equipped with either electric (supply power 24V or 230V) or mechanical actuator. All models are also equipped with a thermal fuse and a visual position indicator.

For further information, see section Operating models.

## Installation

The Halton FDI fire damper is installed on concrete or masonry walls and ceilings and on lightweight walls.

See installation video from link below:

[Halton FDI installation](#)

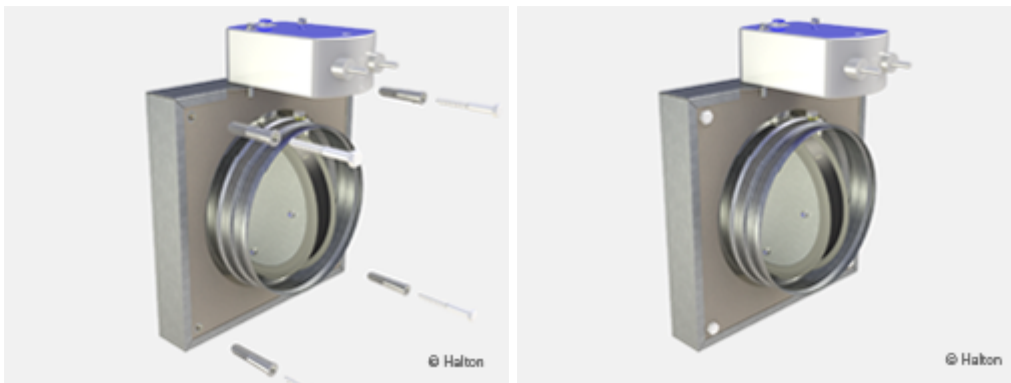
An opening is always left in the separating element for the casing of the product to be led through the structure. The maximum diameter of the installation hole is the fire damper diameter  $D + 20$

mm.

To make installation easier, all products come with an installation/casting frame, which is used to fasten the fire damper to the wall surface or the steel frame of the plasterboard wall.

The installation is finished by filling the casting frame from the front of the device with a gypsum-based firestop certificated fire break compound that is tested for use for this purpose (GBG from Palokatkomiehet Oy; CP 637 from Hilti; or FIREBREAK COMPOUND from Würth). During installation, the fire damper and actuator must be protected with, e.g. a plastic cover.

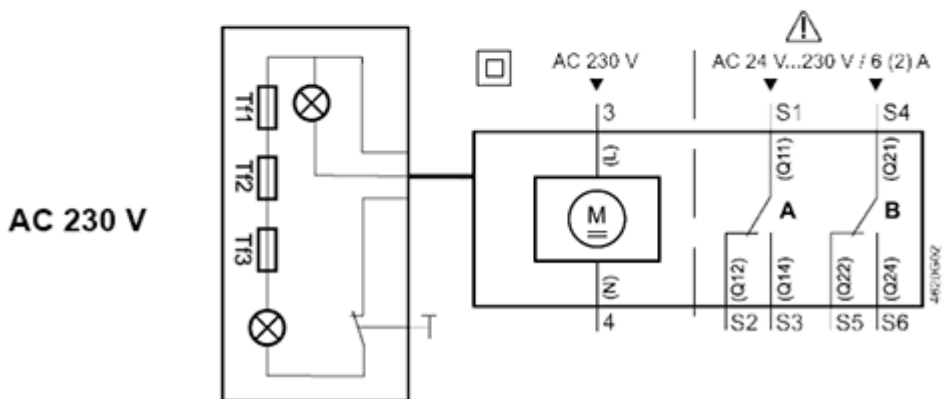
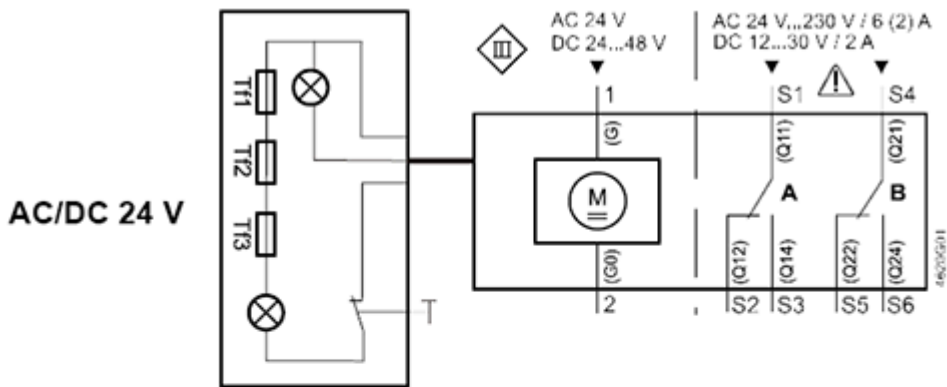
When the Halton FDI fire damper has a factory made pre fire break grouting (AC=FB), it can be installed to a lightweight panel walls by using four suitable screws to a steel frame or a wooden joist (see pictures below). The fire damper can be installed to the masonry structures by using four 8 mm steel wedge anchor.



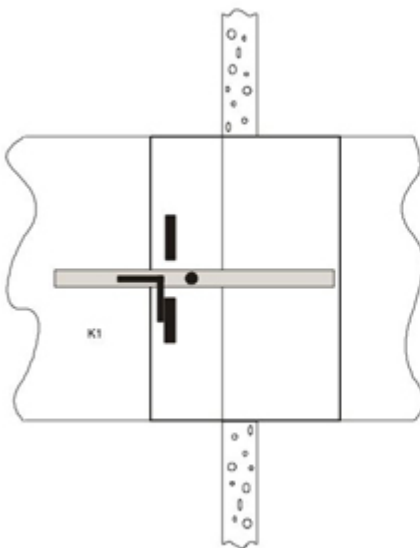
The correct operation of the fire damper must be ensured both before and after grouting. Setting of the damper is performed from outside the device.

Detailed installation instructions, as well as an installer's installation certificate form, are supplied with each product. See also the Documents / Installation Instructions.

## Electric actuator wiring diagram (Siemens)

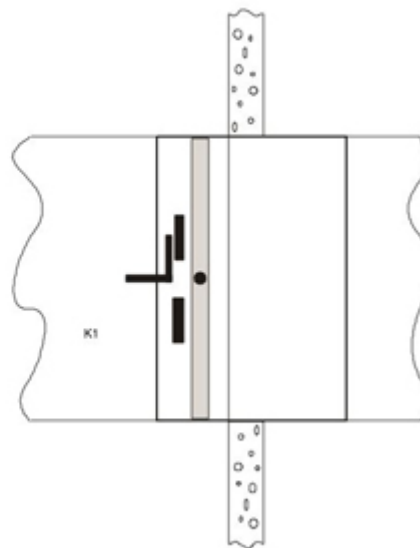


## Manual actuator wiring diagram (limitswitch, MS)



Fire damper open

K1: 13/14 closed  
21/22 open



Fire damper closed

K1: 13/14 open  
21/22 closed



The manual fire damper can be equipped with a bipolar limitswitch (MS) which indicates the closing of the shutoff blade. The limitswitch has potential-free points (no = normally open and nc = normally closed), which can be used to control other fire dampers equipped with an electric release, e.g., triggering an alarm in the fire suppression system. The maximum operating voltage and current is 400 V, 10 A.

## Servicing

If the blade of the manual fire damper does stay open, the fuse must be replaced. The fuse can be changed from outside the fire damper.

The fuse of a fire damper equipped with an electric actuator must be replaced if the fuse has been released because of a rise in temperature in the duct.

To ensure proper operation of fire dampers, they should be inspected regularly. The minimum recommended inspection period is every 6 months or according to the building code. It is recommended that the fire damper is connected to automatic fire damper management system Halton Safe Management 2.0 (SM2), operating voltage 24-VAC.

Upon failure during testing of the fire damper, maintenance service shall be ordered from an authorised Halton representative to ensure appropriate operation of the product.

## Specification

The fire damper is CE marked according to the standard 15650:2010 and tested according to the test standard EN 1366-2.

A fire damper of fire resistance class **EI 60 (ve,ho,i<->o) S** and in concrete ceilings also **E 90 (ho,i<->o) S**, has a double-sealing solution that ensures fire-gas tightness and fire resistance both at room temperature and in high temperatures when the fire damper is closed.

In models with electrical actuator, the fuse shall be activated at 72 °C.

In the mechanical spring release model, the fuse activation temperature corresponds to the specifications (72 °C).

The fuse is located inside the damper, and it is possible to replace it from the outside.

The fire damper has means for external opening / triggering of the release and closing.

The fire damper includes a position indicator.

The fire damper casing complies with the tightness requirements for EN 1751 class C.

The fire damper is suitable for vertical and horizontal installation in concrete and masonry walls and on ceilings and lightweight plasterboard walls between fire compartments.

The blade shaft can be installed in either horizontal or vertical orientation, and the actuator can be installed in any direction.

The fire damper can be installed from the installation frame side without separate sealing of the installation opening on the wall.

The internal quality control of the fire damper manufacturer is based on the ISO 9001 quality

system, and the operations of the manufacturer shall be subject to external third-party quality control.

## Order code

### FDI-D, RE-FU-AC-ZT

**D = Duct connection size (mm)**

100, 125, 160, 200, 250, 315, 400, 500, 630

### Other options and accessories

**OP = Operating model**

N1 GNA126.1E/T12 (72 °C) 24 V, 7 Nm

N2 GNA326.1E/T12 (72 °C) 230 V, 7 Nm

MA Mechanical spring release (failsafe)

**FU = Fuse release temperature**

72 72 °C

**FB = Factory made fire break grouting**

N No

Y Yes

**AC = Accessories**

N1 Safety mesh, 1 side (installed on actuator side)

N2 Safety mesh, 2 sides

MS Limit switch (closed position)

**ZT = Tailored product**

N No

Y Yes (ETO)

## Code example

FDI-500, RE=S3, FU=72, AC=N1, ZT=N