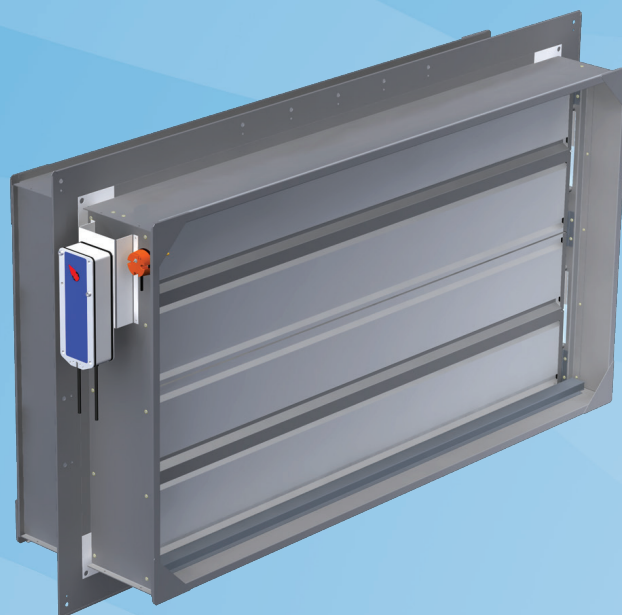


# Halton FDS

Multi-blade-type Fire Damper for Rectangular and Circular Ducts

20/FDS/0000/1007/EN



- Type-approved unit compliant with the EN 1366-2 and EN 13501-3 standards.
- Fire resistance class ES 60.
- Possibility of use as an EIS 60 damper with additional duct insulation (as indicated in national building code).
- Installation in separating concrete or masonry walls and ceilings and for lightweight plasterboard walls.
- Possibility of wall installation in both vertical and horizontal blade direction.
- External quality control management by VTT, the Technical Research Centre of Finland.
- Manufacture in accordance with the ISO 9001 quality standard.
- Suitability for rectangular ducts from size 200 mm x 200 mm to 1500 mm x 800 mm.
- Fire damper casing tightness compliant with EN 1751, Class C.
- Suitability for use in ducts with a maximum pressure of 3300 Pa and maximum air speed of 15 m/s.

## Product models and Accessories

- Several automatic release and position indication options
- Models equipped with either electrical or pneumatic actuators
- Modular damper casing extension for different wall thicknesses
- Option of circular connection

## MATERIAL

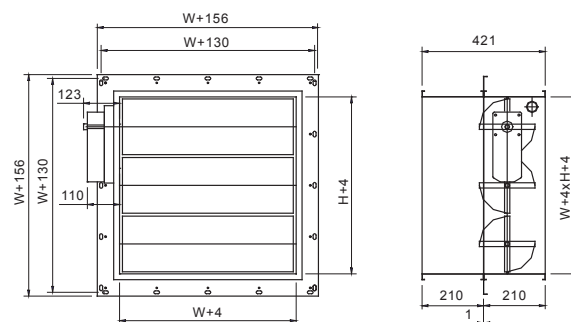
PART	MATERIAL	NOTE
Casing	Galvanised steel	
Blade	Galvanised steel	
Blade gaskets	Ceramic cloth	
Installation frame	Galvanised steel	
Duct gaskets	Rubber compound	Circular connections

## DIMENSIONS

### Rectangular connections

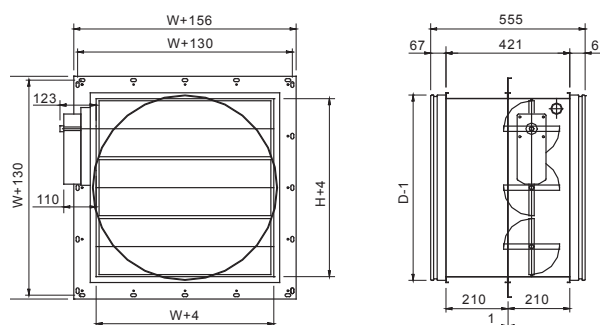
H/W	200 - 800	850-1500
200 - 800	X	Vandret
850-1500	Lodret	-

- V Vertical blade direction only  
 H Horizontal blade direction only  
 X Both horizontal and vertical blade direction allowed



### Round connections

D	H	W
630	600	600
800	800	800



## ACCESSORIES AND PRODUCT MODELS

ACCESSORY	CODE	DESCRIPTION
Mesh on one side	N1	
Mesh on both sides	N2	
Damper casing extension	CE	Length 210 mm
Limit switches	L2	2 pcs, Bernstein; closed/open position indication
Solenoid valve	M1	24 VAC
Solenoid valve	M2	230 VAC

### Actuators

Pneumatic, AT100 (rotating actuator), P0  
 Belimo BF 24-T-2 HL, operating voltage AC/DC 24 V  
 (fuse: 72 °C, includes limit switch), B1  
 Belimo BF 230-T-2 HL, operating voltage AC 230 V  
 (fuse: 72 °C, includes limit switch), B2

### ACCESSORIES

The fire damper can be equipped with a bipolar limit switch, which indicates the closing of the shut-off blade. The limit switch has potential-free contacts (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.

### PNEUMATIC ACTUATOR

A fusible link releases and cuts off operating pressure to the spring-return actuator, allowing springs to close the damper blades. The fire damper opens automatically when the fuse has been changed and the pneumatic air supply is re-established.

The fire damper always has thermal release operation (a fuse). Additional release systems available:

### Solenoid operation

The fire damper can be released with an electrical signal, which is initiated by a smoke detector, limit switch / pressure switch, or similar. When the circuit is closed, the operating voltage is switched to the magnet and the damper closes.

Option	M1	M2
Power supply	24 VDC	230 VAC
Power consumption (design specification)	15 W	40 VA
Enclosure class (minimum)	IP20	IP20
ED	100%	100%

### ELECTRIC ACTUATOR

A fusible link releases and cuts off operating voltage to the spring-return motor, allowing the spring to close the damper blades.

## Function

The FDS is a rectangular fire damper, which prevents fire and smoke from spreading in ventilation ducts.

Approved fire resistance classes are (EN 1366-2):

- Ceilings: ES 60
- Walls: ES60, E90 (both concrete/masonry and lightweight walls)

The fire damper is equipped with either an electrical or pneumatic actuator. Under all options, a fuse responds to a rise in temperature, causing a spring-return blade to close.

Alternatively, the damper may be released by a system using an electric motor or using solenoids with a pneumatic motor.

Setting of the damper is performed from outside the device.

The fire damper is made of incombustible materials. Once the fire damper has closed, the blade and sealing close the duct tightly, effectively preventing the spreading of flue gases.

Actuators have a visual position indicator.

The nominal fuse release temperature is 72 °C.

The FDS fire damper can be connected to the MSH control and testing system. The MSH system enables the use of smoke detectors in ductwork or in rooms.

The FDS fire damper also can be connected to common building automation systems.

## Installation

The damper may be installed both on concrete or masonry walls and ceilings and on lightweight walls. The blade direction in wall installation may be either horizontal or vertical.

The correct operation of the fire damper must be ensured before and after installation.

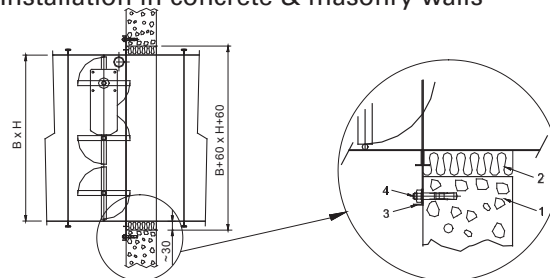
Set the fire damper by turning the shut-off blade to the desired position with the aid of the indicator handle.

The damper shall be cleaned after installation.

Detailed installation instructions, as well as an installer's installation certificate form, are supplied with each product. See also the section 'Documents' for detailed installation guidance.

## Installation in concrete or masonry walls and ceilings or lightweight plasterboard walls

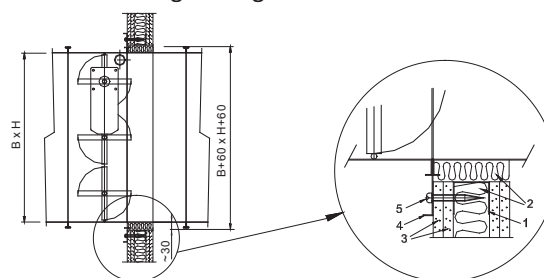
### Installation in concrete & masonry walls



Installation opening: product size + 60 mm in both horizontal and vertical direction

1. Concrete or masonry wall
2. Rock wool, specific weight min. 40 kg/m<sup>3</sup>.
3. Installation flange
4. Anchor screw

### Installation in lightweight wall



Installation opening: product size + 60 mm in both horizontal and vertical direction

- 1 Installation frame; steel or wood
- 2 Plasterboard
- 3 Rock wool, specific weight min. 40 kg/m<sup>3</sup>.
- 4 Self drilling screw

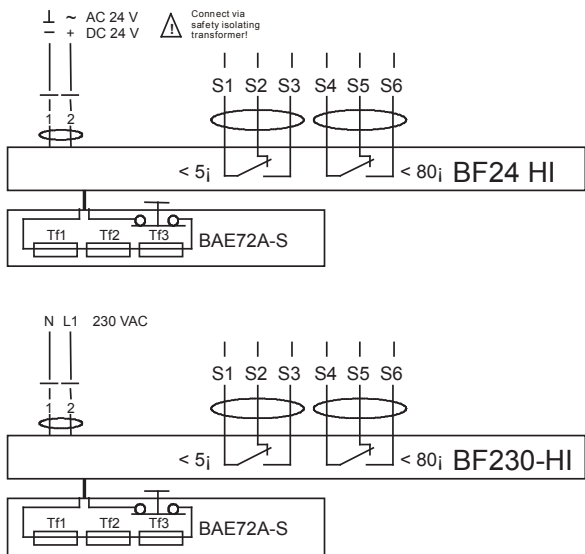
An opening is always left in the separating element for the fire damper; the size of the installation opening is about  $W + 60 \text{ mm} \times H + 60 \text{ mm}$ .

A supporting frame shall be installed around the opening of the lightweight wall.

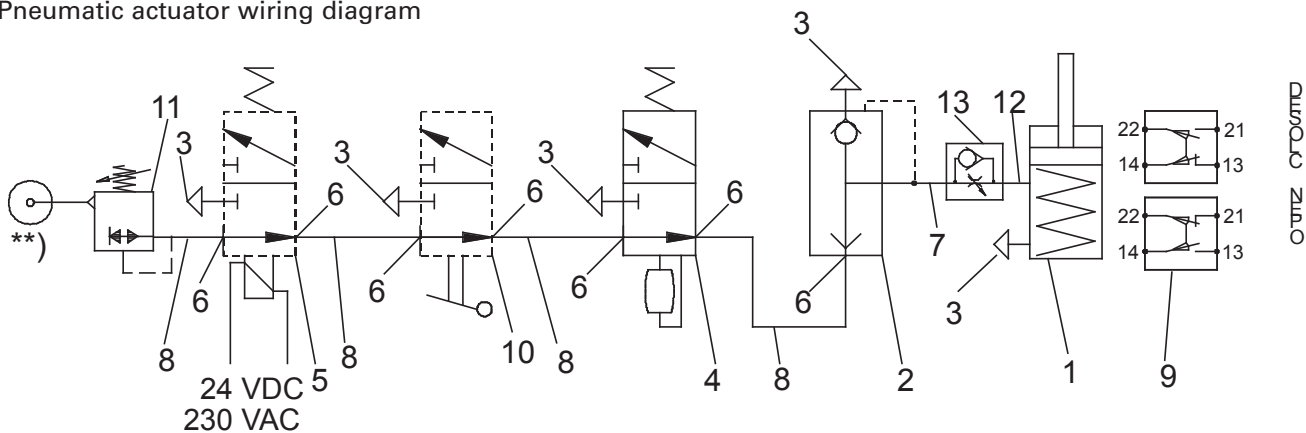
All products come with an installation flange, which is used to fasten the fire damper with screws to the concrete surface or to the supporting frame within the lightweight wall (see installation drawings).

The gap between the damper and the separating element is filled with noncombustible wool after fixing of the damper.

Electric actuator wiring diagram



Pneumatic actuator wiring diagram



\*\* ) PNEU. INLET (5-10 BAR) FOR A PLASTIC TUBE Ø 6 MM

- 1 SPRING-RETURN ACTUATOR
- 2 QUICK EXHAUST VALVE
- 3 SILENCER
- 4 FUSIBLE LINK VALVE
- 5 OPTION: SOLENOID VALVE
- 6 MALE CONNECTOR

- 7 DOUBLE NIPPLE
- 8 PLASTIC TUBE
- 9 OPTION: OPEN/CLOSED SWITCHES
- 10 OPTION: MANUAL VALVE
- 11 PRESSURE REGULATOR
- 12 MALE ELBOW
- 13 SPEED CONTROLLER

NOTE: ADDITIONAL SOLENOID VALVE MAX. 10 METRES FROM FIRE DAMPER

## Servicing

To ensure proper operation of the fire dampers, they should be inspected regularly. It is recommended that the fire damper be connected to automatic control and testing system MSH (24-V system).

Dampers not connected to an automatic testing system shall be tested periodically. The minimum recommended inspection period is one year or according to building code.

An inspection opening shall be installed in the proximity of the fire damper as indicated in the building code (not part of the product).

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.

## Suggested specifications

Multi-blade-type fire damper FDS for rectangular and circular ducts. The casing and blades of the fire damper shall be made of galvanised steel and the blade gaskets made of incombustible material.

The fire damper shall be approved for both separating concrete or masonry walls and ceilings and installation in lightweight walls according to EN 1366-2 with ES60(E90w) fire resistance. The fire damper shall be approved for wall installation in both horizontal and vertical blade direction.

The fire damper shall be installed on a separating wall by screws without the need for an additional installation frame or grouting.

The fire damper shall include a position indicator.

The fire damper shall be equipped with a thermal fuse. According to specification, the damper shall be supplied with one of the following release options:  
A. Electric signal release by closing circuit (initiated by, e.g., a smoke detector or a microswitch or pressure switch); the enclosure class of the electric release arrangement shall be IP 54 or better.

B. Pneumatic release.

C. Solenoid release as additional option with pneumatic motor.

**Product code**

FDS/S-W-H-D

S = Type of duct connections

- R Rectangular connections
- C Circular connections

W = Width

S=R: 200, +50, ..., 1500

H = Height

S=R: 200, 300, +50, ..., 800

D = Connection size

S=C: 630, 800

## Specifics and accessories

RE = Release type

- B1 BF-24-T-2 HL, fuse: 72 °C
- B2 BF-230-T-2 HL, fuse: 72 °C
- P0 Pneumatic, rotating AT100

AC = Accessories

- CE Casing extension, 210 mm, for structural thickness > 200 mm
- L2 Limit switches, 2 pcs, Bernstein, with pneumatic motor
- M1 Solenoid valve, 24 VAC, with pneumatic motor
- M2 Solenoid valve, 230 VAC, with pneumatic motor
- N1 Safety mesh, 1 side, installed in actuator side
- N2 Safety mesh, 2 sides

## Code example

FDS/R-200-200 , RE=B1, AC=N1