

# FIRE AND GAS DAMPER, A0(A60)

*Halton FDB for offshore applications*

Halton FDB fire dampers are type-approved class A0(A60) fire dampers for use in offshore and marine ventilation systems. The FDB can be installed in rectangular or circular ducts. All fire dampers have a fusible link (except MAN-model) and they prevent the spread of fire and gases within the ventilation ductwork. When the blades are in the open position, the device does not cause significant pressure loss, noise or flow disturbance. Fire dampers are set from outside and can be installed in any position. An open-closed indicator is visible on the outside of the damper. Fire dampers of non-standard dimensions can be supplied on request.

## Features

- Type approved by most recognized classification societies, class A0 - A60 fire damper
- Fixed frame and blades of painted, galvanized or stainless steel. Maintenance-free stainless steel bearings and shafts. Bronze bearings available as an option
- Blades contain silicone (effective up to 300 °C) and thermal expansion graphite seals (effective from 150 °C). Nominal release temperature of fuses 50 °C, 74 °C or 100 °C
- Very low leakage
- Can be installed in any position
- Automatic electrical, pneumatic, spring or manual operation system available
- Maximum duct pressure 5000 Pa and maximum air velocity 15 m/s

## FDB dimensions and material thickness

FDB fire dampers meet international standards for both rectangular (width B 100-1000 mm and height H 100-1000 mm, 50 mm division) and circular ducts (Ø100-1000 mm). Special non-standard dimensions and flange drilling available on request. Modular construction sizes up to 2000x2000 mm are available. Material thickness 3-5 mm according to SOLAS.

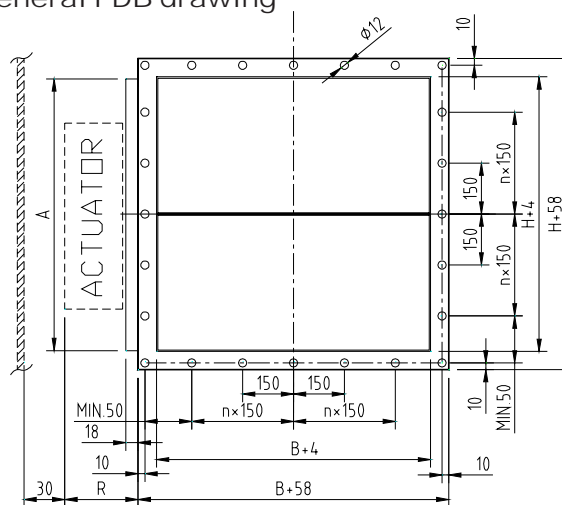
| Frame thickness according to Solas | S | L   |
|------------------------------------|---|-----|
| If B or H ≥ 100, but ≤ 449         | 3 | 210 |
| If B or H ≥ 450, but ≤ 649         | 4 | 212 |
| If B or H ≥ 650, but ≤ 1000        | 5 | 215 |

## Actuator effect on dimensions

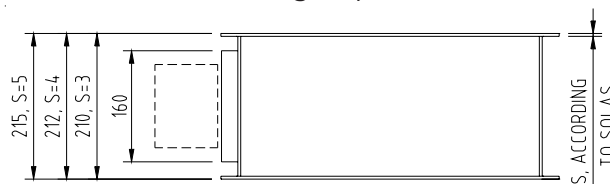
| ACTUATOR      |                              | DIMENSIONS |                              |
|---------------|------------------------------|------------|------------------------------|
|               |                              | R          | A                            |
| Manual        | Handle                       | 95         | H                            |
| Electrical    | BF24 or BF230                | 90         | H                            |
| Pneumatic PNL | Linear actuator<br>245/300 N | 110        | H ≤ 500 = 500<br>H > 500 = H |
| Pneumatic PNR | Pneumatic rotating actuator  | 170        | H                            |
| Spring        | Spring                       | 140        | H                            |



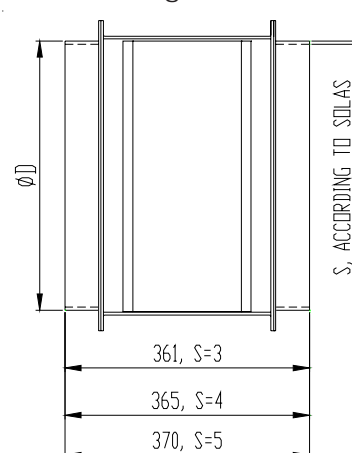
General FDB drawing



General FDB drawing, top



General FDB drawing, circular connections



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SMV1M08Y2003  
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## Product options

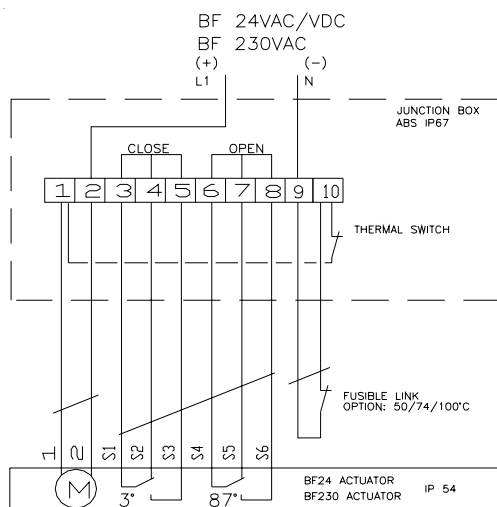
Halton FDB is available with following actuators:

- FDB-EL: Electrical spring return motor; standard actuators being BF24, BF24-T (24 VAC  $\pm 20\%$  50...60 Hz; 24VDC  $\pm 10\%$ ) or BF230, BF230-T (220-240 VAC 50...60 Hz). The motor contains built-in open-closed limit switches. Separate junction box included in the EL-model.
- FDB-PNL: Pneumatic actuator, material AISI 316, 4-10 bar. Junction box available as an option.
- FDB-PNR: Pneumatic rotating actuator, 4-6 bar. Junction box available as an option.
- FDB-SP: Manual spring-actuated damper with fusible link.
- FDB-MAN: Manual operation without actuator and without fusible link.
- DOT: Manual override function available for PNL and EL models.

## Accessories

Many accessories are available for all Halton Marine fire dampers.

## FDB-EL wiring diagram



## Operation principle

In the event of a temperature rise in ductwork:

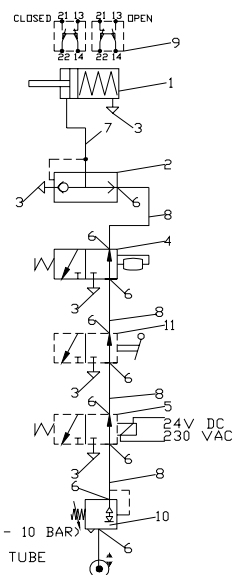
- FDB-EL: fusible link releases and cuts off operating voltage to the spring return motor, allowing the spring to close the damper blades. The fire damper opens automatically when the fuse has been changed and the operating voltage to the motor is re-established.
- FDB-PNL and FDB-PNR: fusible link releases 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.
- FDB-SP: fusible link releases allowing the spring to close the damper blades. When the fuse has been changed, the fire damper must be reset into open position manually.
- FDB-MAN: fire damper does not contain a fusible link. The damper is opened and closed manually.

## FDB pneumatic diagram

1. SPRING RETURN ACTUATOR
2. QUICK EXHAUST VALVE
3. SILENCER WITH ADJUSTMENT
4. FUSIBLE LINK VALVE
5. OPTION SOLENOID VALVE
6. MALE CONNECTOR
7. DOUBLE NIPPLE
8. TUBE
9. OPTION: OPEN/CLOSED SWITCHES
10. PRESSURE REGULATOR
11. OPTION: MANUAL VALVE

NOTICE !  
ADDITIONAL SOLENOID VALVE  
MAX 10 METER FROM FIREDAMPER

PNEU. INLET (< 10 BAR)  
FOR A PLASTIC TUBE  
Ø6 MM



## Weights of Halton Marine FDB-EL dampers and other models (kg)

| H / Height<br>mm | B / Width (mm) |     |     |     |     |     |     |     |     |      |      | D2 ØD<br>mm | Weight<br>kg |
|------------------|----------------|-----|-----|-----|-----|-----|-----|-----|-----|------|------|-------------|--------------|
|                  | 100            | 200 | 300 | 400 | 500 | 600 | 700 | 800 | 900 | 1000 |      |             |              |
| 100              | 10             | 13  | 16  | 17  | 19  | 20  | 22  | 23  | 25  | 26   | 100  | 13          |              |
| 200              | 13             | 14  | 16  | 18  | 20  | 27  | 30  | 32  | 35  | 38   | 160  | 16          |              |
| 300              | 15             | 18  | 20  | 27  | 30  | 33  | 36  | 39  | 42  | 45   | 200  | 16          |              |
| 400              | 18             | 21  | 28  | 32  | 35  | 39  | 42  | 51  | 55  | 59   | 250  | 20          |              |
| 500              | 20             | 24  | 33  | 37  | 41  | 45  | 54  | 58  | 63  | 67   | 315  | 39          |              |
| 600              | 22             | 32  | 37  | 41  | 46  | 56  | 60  | 65  | 70  | 75   | 400  | 39          |              |
| 700              | 25             | 36  | 41  | 46  | 56  | 62  | 67  | 73  | 78  | 83   | 500  | 53          |              |
| 800              | 27             | 40  | 46  | 56  | 62  | 68  | 74  | 80  | 86  | 91   | 630  | 82          |              |
| 900              | 30             | 44  | 50  | 62  | 68  | 74  | 81  | 87  | 93  | 100  | 800  | 110         |              |
| 1000             | 32             | 48  | 55  | 67  | 74  | 80  | 87  | 94  | 101 | 108  | 1000 | 156         |              |

FDB-EL weights include actuator weight (BF24 or BF230).

Weights of other models: FDB-PNL=FDB-EL +1 kg, FDB-PNR=FDB-EL +1 kg, FDB-SP=FDB-EL -2 kg, FDB-MAN=FDB-EL -3 kg