

FDL

A0(A60) Fire Damper



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Halton FDL fire dampers are type-approved class A0(A60) fire dampers for use in offshore and marine ventilation systems. The FDL can be installed in rectangular or circular ducts. The FDL dampers are used to prevent the spread of fire within the ventilation ductwork. All fire dampers have a fusible link and spring return actuator. When the blades are in the open position, the device does not cause significant pressure loss 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 with non-standard dimensions can also be supplied on request.

- Type-approved by most recognized classification societies, class A0 - A60 fire damper when suitably insulated
- Fixed frame and blades of painted, galvanized or stainless steel. Maintenance-free stainless steel bearings and shafts
- Blades without sealing
- Nominal release temperatures of fuses are 50 °C, 74 °C and 100 °C degrees. Other temperatures available
- Can be installed in any position
- Automatic electrical, pneumatic or spring operation system available
- Frame material thickness 3 mm
- Maximum duct pressure 5000 Pa and maximum air velocity 15 m/s

| PART | MATERIAL | FINISHING | NOTE |
|---------------------------|-----------------|-----------------------|--------------------------|
| Frame | Carbon steel | Painted or galvanized | - |
| Frame | Stainless steel | - | - |
| Blades | Steel | Galvanized | - |
| Blades | Stainless steel | - | - |
| Maintenance-free bearings | Stainless steel | - | Bronze bearings optional |
| Shafts | Stainless steel | - | - |

FDL DIMENSIONS AND MATERIAL THICKNESS

The Halton FDL fire dampers are manufactured according to international standards for both rectangular (width B 100-1300 mm and height H 100-1200 mm, 50 mm division) and circular ducts (Ø100-1250 mm). Special non-standard dimensions and flange drilling are available on request. Modular construction sizes up to 2600x2400 mm are available. Standard frame material thickness 3 mm. Material thickness according to SOLAS available on request.

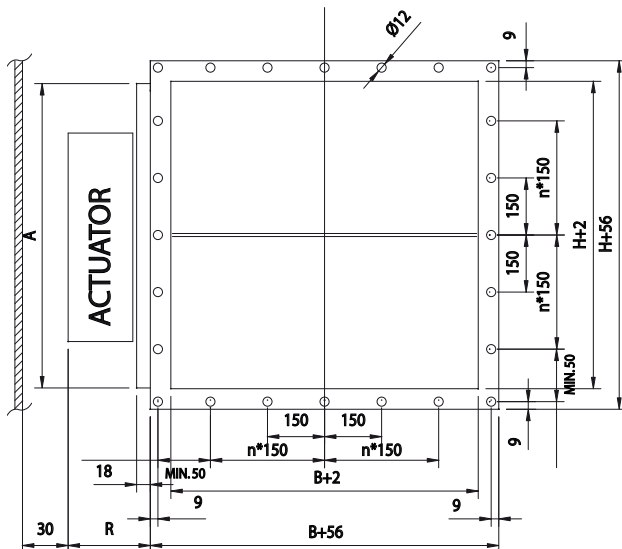
Frame thickness according to SOLAS

| DIMENSIONS | S | L |
|--------------------------------------|---|-----|
| If B or H \geq 100, but \leq 449 | 3 | 212 |
| If B or H \geq 450, but \leq 649 | 4 | 215 |
| If B or H \geq 650 | 5 | 217 |

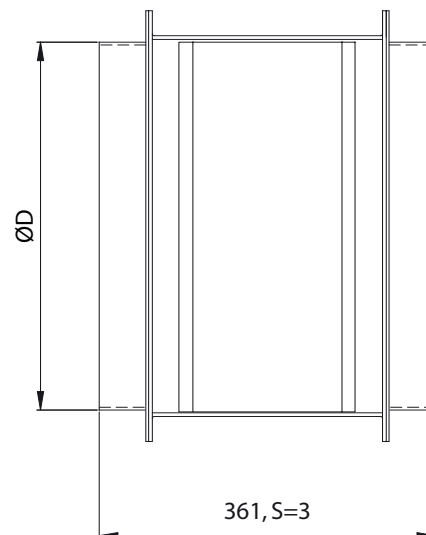
Actuator effect on dimensions

| ACTUATOR | | DIMENSIONS | |
|---------------|------------------------------|------------|-------------------------------------|
| | | R | A |
| Electrical | 24V or 230V | 90 | H |
| Pneumatic PNL | Linear actuator 245/300 N | 110 | H \leq 500 = 500 H $>$ 500 = H |
| Pneumatic PNR | Pneumatic rotating actuator | 170 | H |
| Spring | Spring | 140 | H |

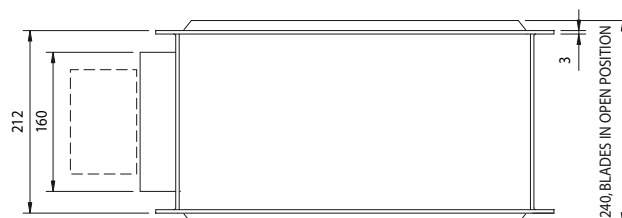
GENERAL FDL DRAWING



FDL CIRCULAR CONNECTIONS



GENERAL FDL DRAWING, TOP



FDL PRODUCT OPTIONS

Halton FDL is available with following actuators:

- FDL-EL: Electrical spring return motor; standard actuators being BF24, BF24-T (AC 24 V 50/60 Hz DC 24 V), BF230, BF230-T (AC 230 V 50/60 Hz) or BF120 (AC 120 V 50/60 Hz). The motor contains built-in open-closed limit switches. Separate junction box included in the EL-model.
- FDL-PNR: Pneumatic rotating actuator.
- FDL-PNL: Pneumatic linear actuator, material AISI 316.
- FDL-SP: Manual spring-actuated damper with fusible link.

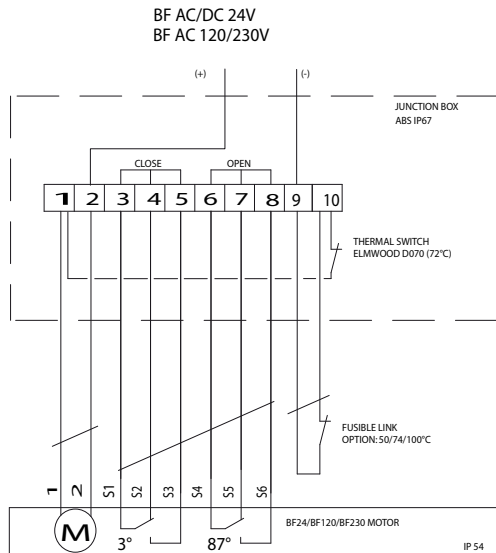
DOT: manual override function available for PNL and EL models. Ask more information for more actuators and accessories.

OPERATION PRINCIPLE

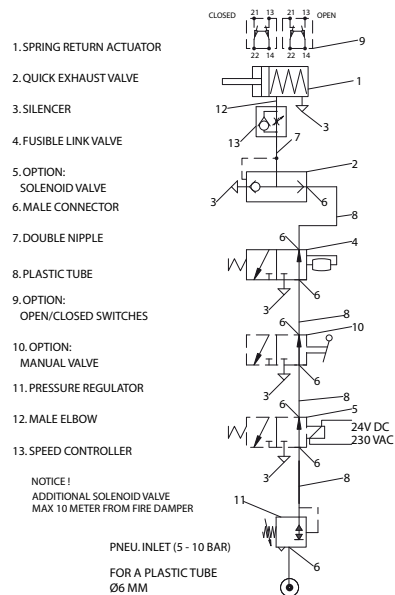
In the event of a temperature rise in ductwork:

- FDL-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.
- FDL-PNL and FDL-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.
- FDL-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.

FDL-EL WIRING DIAGRAM



FDL-PNR/PNL PNEUMATIC DIAGRAM



WEIGHTS OF HALTON MARINE FDL-EL DAMPERS AND OTHER MODELS (KG)

| H/Height mm | B / Width (mm) | | | | | | | | | | | | | D2 ØD mm | Weight kg |
|----------------|----------------|---------|---------|---------|---------|---------|---------|---------|---------|---------|---------|---------|---------|-------------|--------------|
| | 100 | 200 | 300 | 400 | 500 | 600 | 700 | 800 | 900 | 1000 | 1100 | 1200 | 1300 | | |
| 100 | 10 (10) | 12 (12) | 13 (13) | 15 (15) | 17 (19) | 18 (22) | 20 (26) | 22 (28) | 23 (30) | 25 (33) | 27 (36) | 29 (39) | 29 (39) | 100 | 12 (12) |
| 200 | 12 (12) | 14 (14) | 15 (15) | 17 (17) | 19 (22) | 21 (24) | 23 (29) | 25 (32) | 27 (35) | 28 (37) | 30 (40) | 32 (43) | 32 (43) | 125 | 13 (13) |
| 300 | 12 (12) | 16 (16) | 18 (18) | 20 (20) | 22 (25) | 24 (28) | 27 (34) | 29 (37) | 31 (40) | 33 (43) | 35 (45) | 37 (48) | 37 (48) | 160 | 14 (14) |
| 400 | 16 (16) | 18 (18) | 20 (20) | 23 (23) | 25 (28) | 27 (31) | 29 (37) | 32 (40) | 34 (44) | 36 (47) | 38 (50) | 40 (53) | 40 (53) | 200 | 16 (16) |
| 500 | 18 (19) | 21 (22) | 23 (25) | 26 (28) | 28 (32) | 31 (35) | 33 (42) | 36 (45) | 38 (48) | 40 (52) | 43 (55) | 45 (58) | 45 (58) | 250 | 20 (20) |
| 600 | 20 (22) | 23 (24) | 25 (28) | 28 (31) | 31 (35) | 33 (38) | 36 (46) | 38 (50) | 41 (52) | 44 (56) | 46 (59) | 49 (63) | 49 (63) | 315 | 24 (24) |
| 700 | 22 (28) | 25 (32) | 28 (35) | 31 (39) | 34 (43) | 37 (46) | 39 (50) | 42 (54) | 45 (57) | 48 (61) | 51 (65) | 54 (68) | 54 (68) | 400 | 31 (31) |
| 800 | 24 (31) | 27 (34) | 30 (38) | 33 (42) | 36 (46) | 39 (50) | 42 (54) | 45 (57) | 48 (61) | 51 (65) | 54 (69) | 57 (73) | 57 (73) | 500 | 37 (44) |
| 900 | 26 (34) | 29 (38) | 33 (42) | 36 (46) | 39 (50) | 42 (54) | 45 (58) | 49 (62) | 52 (66) | 55 (70) | 58 (74) | 62 (78) | 62 (78) | 630 | 46 (57) |
| 1000 | 28 (36) | 31 (40) | 35 (44) | 38 (49) | 41 (53) | 45 (57) | 48 (62) | 52 (65) | 55 (70) | 58 (74) | 62 (78) | 65 (82) | 65 (82) | 800 | 61 (83) |
| 1100 | 30 (39) | 34 (44) | 37 (48) | 41 (53) | 45 (57) | 48 (61) | 52 (66) | 55 (70) | 59 (75) | 63 (79) | 66 (83) | 70 (88) | 70 (88) | 1000 | 81 (110) |
| 1200 | 32 (42) | 36 (46) | 40 (51) | 43 (55) | 47 (60) | 51 (65) | 55 (70) | 58 (74) | 62 (79) | 66 (83) | 70 (88) | 73 (92) | 73 (92) | 1250 | 109 (146) |

FDL-EL weights include actuator BF24 or BF230. Weights of other models compared to FDL-EL: FDL-PNL +1 kg, FDL-PNR +1 kg, FDL-SP -2 kg. (Frame thickness according to SOLAS)

