

FDL

A0(A60) Fire Damper



Halton FDL fire dampers are type-approved class A0(A60) fire dampers for use in offshore, marine and navy 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

- ATEX approved. Shock-tested
- 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 as an option
- Can be installed in any position
- Automatic electrical, pneumatic or spring operation system available
- Maximum duct pressure for damper construction 5000 Pa and maximum air velocity 15 m/s. In case of high duct pressure, contact Halton Marine for finding the most suitable solution.

PART	MATERIAL	FINISHING	NOTE
Frame	Carbon steel	Galvanized or painted	-
Frame	Stainless steel	-	-
Blades	Steel	Galvanized or painted	-
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, 1 mm division) and circular ducts (\varnothing 100-1250 mm). Non-standard dimensions and flange drilling are available on request.

Standard flange width 27 mm. Flanges and drilling also available according to ISO 15138 standards.

Modular construction sizes up to 2600x2400 mm.

Standard frame material thickness 3 mm. Material thickness according to SOLAS available on request.

Actuator effect on dimensions

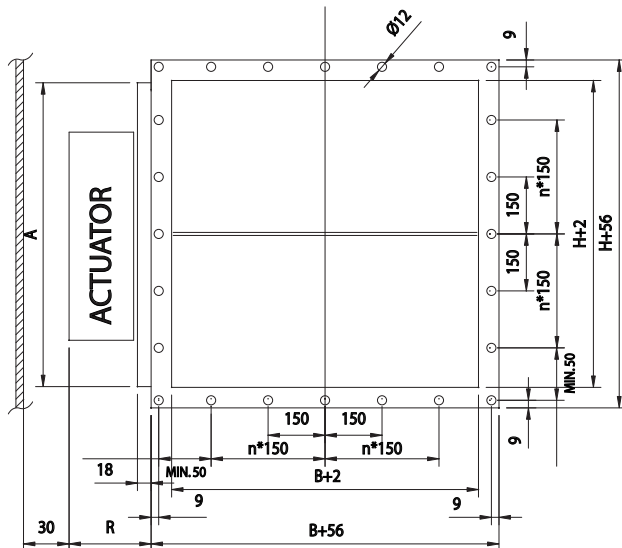
ACTUATOR		DIMENSIONS	
		R	A
Electrical	GGA 326.1E	100	$H \leq 300 = 300$ $H > 300 = H$
Pneumatic PNL	Linear actuator 245/300 N	170	$H \leq 500 = 500$ $H > 500 = H$
Pneumatic PNR	Pneumatic rotating actuator AT100	170	$H \leq 300 = 300$ $H > 300 = H$
Pneumatic PNR	Pneumatic rotating actuator AT200	190	$H \leq 350 = 350$ $H > 350 = H$
Spring	Spring	140	H

The above table contains only some examples of actuators and their effect on dimensions.

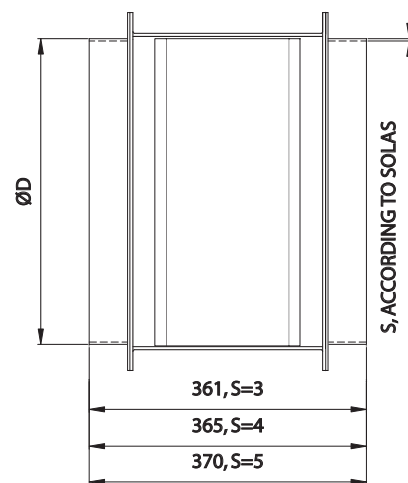
Frame thickness according to SOLAS

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

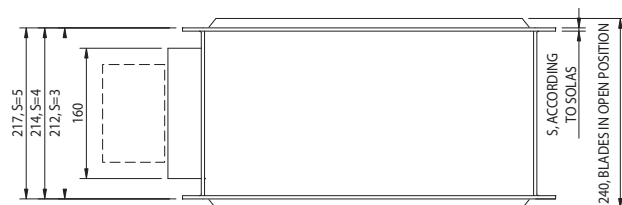
GENERAL FDL DRAWING



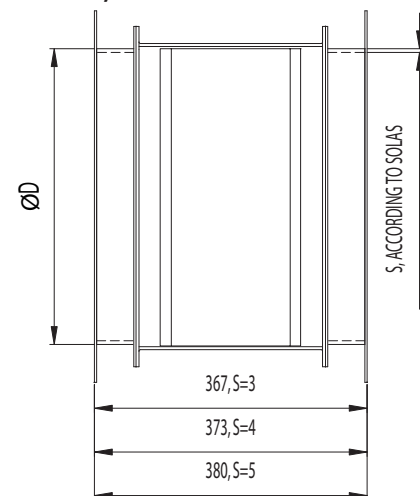
FDL CIRCULAR CONNECTIONS



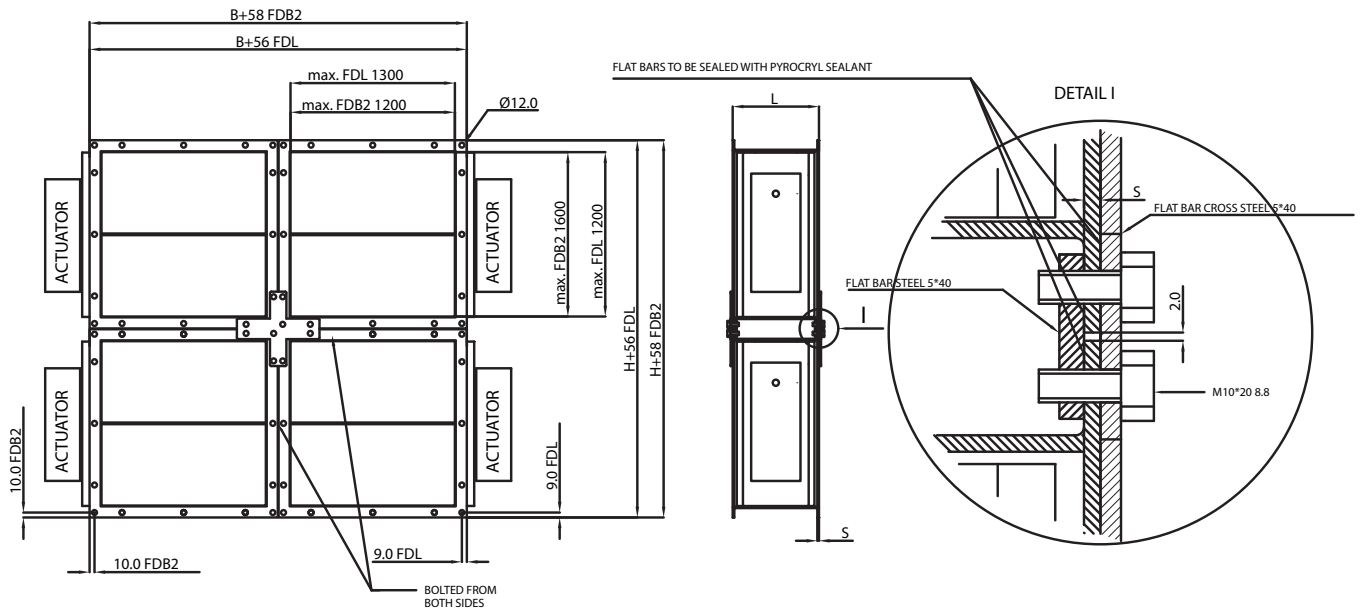
GENERAL FDL DRAWING, TOP



FDL CIRCULAR, WITH CONNECTION FLANGES



GENERAL FDL MODULE ASSEMBLY



FDL PRODUCT OPTIONS

Halton FDL is available with following actuators:

- FDL-EL: Electrical spring return motor; standard actuators being 24 V or 230 V or 120 V. The motor contains built-in open-closed limit switches. Separate junction box included in the EL-model. A wide range of eex-proof actuators available, including a one second closing time function as an option.
- FDL-PNL: Pneumatic linear actuator, material AISI 316.
- FDL-PNR: Pneumatic rotating actuator.
- FDL-SP: Manual spring-actuated damper with fusible link.

DOT: manual override function available for PNL, PNR and EL models. A wide range of accessories available.

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.

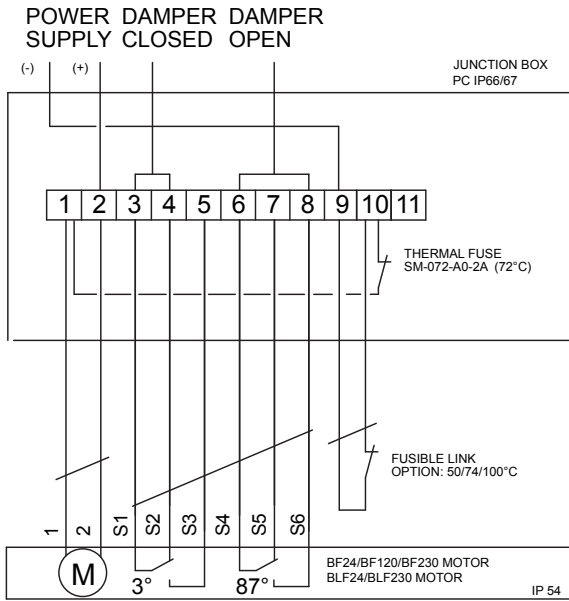
WEIGHTS OF STANDARD HALTON MARINE FDL DAMPERS (KG) without an actuator

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	5 (5)	7 (7)	9 (9)	10 (10)	12 (13)	14 (15)	15 (22)	17 (25)	19 (27)	20 (30)	22 (32)	24 (35)	25 (37)	100	8 (8)
200	7 (7)	9 (9)	11 (11)	12 (12)	14 (16)	16 (18)	18 (26)	20 (28)	22 (31)	23 (34)	25 (36)	27 (39)	29 (41)	125	8 (8)
300	9 (9)	11 (11)	13 (13)	15 (15)	17 (19)	19 (21)	21 (30)	23 (32)	25 (35)	27 (38)	29 (41)	31 (43)	33 (46)	160	12 (12)
400	11 (11)	13 (13)	15 (15)	17 (17)	20 (22)	22 (24)	24 (33)	26 (36)	28 (39)	30 (42)	32 (45)	34 (48)	37 (51)	200	13 (13)
500	13 (16)	16 (19)	18 (22)	21 (25)	23 (27)	25 (30)	28 (38)	30 (41)	32 (44)	35 (47)	37 (50)	39 (54)	42 (57)	250	19 (19)
600	15 (18)	18 (21)	20 (24)	23 (27)	25 (30)	28 (33)	30 (41)	33 (45)	35 (48)	38 (51)	40 (55)	43 (58)	46 (61)	315	20 (20)
700	18 (25)	21 (28)	23 (32)	26 (35)	29 (39)	32 (42)	34 (46)	37 (50)	40 (53)	42 (57)	45 (60)	48 (64)	51 (67)	400	27 (27)
800	20 (27)	23 (31)	25 (35)	28 (38)	31 (42)	34 (46)	37 (50)	40 (53)	43 (57)	46 (61)	49 (64)	51 (68)	54 (72)	500	35 (43)
900	22 (31)	25 (35)	28 (39)	32 (42)	35 (46)	38 (50)	41 (54)	44 (58)	47 (62)	50 (66)	53 (70)	56 (74)	59 (78)	630	46 (62)
1000	24 (33)	27 (37)	31 (41)	34 (45)	37 (50)	40 (54)	44 (58)	47 (62)	50 (66)	53 (70)	57 (74)	60 (78)	63 (82)	800	62 (89)
1100	26 (36)	30 (41)	33 (45)	37 (49)	40 (54)	44 (58)	47 (62)	51 (67)	54 (71)	58 (75)	61 (79)	65 (84)	68 (88)	1000	83 (118)
1200	28 (39)	32 (44)	36 (48)	39 (52)	43 (57)	46 (61)	50 (66)	54 (70)	57 (75)	61 (79)	65 (84)	68 (88)	72 (92)	1250	113 (162)

Examples of actuator weights: FDL-EL GGA 326.1E 2,3 kg, GNA 326.1E 1,3 kg, BF230 +3,2 kg, BLF230 +1,7 kg, ExMax /Redmax +3,5 kg, FDL-PNL Roder +4 kg, FDL-PNR AT100 +2,1 kg, AT100 as AISI316 +4,4 kg, AT200 +3,2 kg, AT200 as AISI316 +6,2 kg, FDL-SP +1 kg.

(Frame thickness according to SOLAS)

FDL-EL WIRING DIAGRAM



FDL-PNR/PNL PNEUMATIC DIAGRAM

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

NOTICE!
ADDITIONAL SOLENOID VALVE
MAX 10 METER FROM FIRE
DAMPER

PNEU. INLET (5-10
BAR)

FOR A PLASTIC TUBE
Ø6 MM

