



**AERON**



***PC-14  
Fire Dampers***

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**Safety is the most important key-factor aboard ship or offshore installation. Halton Marine's products comply with the highest international standards and approvals.**

#### TYPE APPROVALS FOR HALTON FDB FIRE DAMPERS.

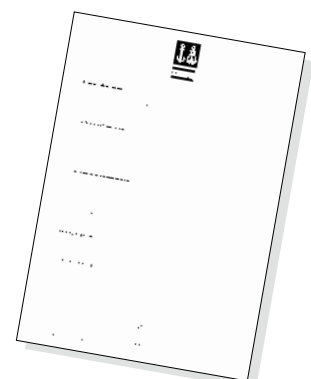
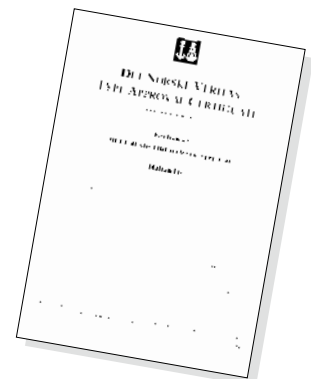
American Bureau of Shipping. Bureau Veritas. Danish Maritime Authority. Det Norske Veritas. Finnish Maritime Administration approves MED certificates. Germanischer Lloyds. Lloyds Register. Marine Equipment Directive, MED. Marine Safety Agency approves MED certificates. The Head of Shipping Inspection approves MED certificates. Ministère de l'équipement, des transports et du logement approves MED certificates. Norwegian Maritime Administration approves MED certificates. RINA. United States Coast Guard.

#### TYPE APPROVALS FOR HALTON FDD FIRE DAMPERS.

American Bureau of Shipping. Bureau Veritas. Danish Maritime Authority. Det Norske Veritas. Finnish Maritime Administration approves MED certificates. Germanischer Lloyds. Lloyds Register. Marine Equipment Directive, MED. Marine Safety Agency approves MED certificates. The Head of Shipping Inspection approves MED certificates. Ministère de l'équipement, des transports et du logement approves MED certificates. Norwegian Maritime Administration approves MED certificates. Hellenic Republic Ministry. RINA.

#### TYPE APPROVALS FOR HALTON FDL FIRE DAMPER

American Bureau of Shipping. Bureau Veritas. Danish Maritime Authority approves MED certificates. Det Norske Veritas. Finnish Maritime Administration approves MED certificates. Germanischer Lloyds. Lloyds Register. Marine Equipment Directive, MED. Marine Safety Agency approves MED certificates. The Head of Shipping Inspection approves MED certificates. Ministère de l'équipement, des transports et du logement approves MED certificates. Norwegian Maritime Administration approves MED certificates. RINA. USCG.





**FDB2 – A0(A60) FIRE AND GAS DAMPER**

Halton FDB2 fire dampers are type-approved class A0(A60) fire and gas dampers for use in offshore and marine ventilation systems. The FDB2 can be installed in rectangular or circular ducts. All fire dampers have a fusible link and they prevent the spread of fire and gases (low-leakage model) 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 with non-standard dimensions can be supplied on request.

- Type-approved by most recognized classification societies, class A0 - A60 fire and gas damper when suitably insulated
- Blades contain silicone (effective up to 300 °C) for low leakage in normal conditions and thermal expansion graphite seals (effective from 150 °C) to increase tightness even up to 50% in a case of fire. Tightness substantially better than NORSOK requirements
- Nominal fuse release temperature 50 °C, 74 °C or 100 °C. Other temperatures available
- Low weight due to patented double skin blade structure
- Automatic electrical, pneumatic or spring system available
- Maximum duct pressure 5000 Pa and maximum air velocity 15 m/s

Part	Material	Finishing	Note
Frame	Carbon steel	Painted or galvanised	–
Frame	Stainless steel	–	–
Blades	Steel	Galvanized	–
Blades	Stainless steel	–	–
Maintenance-free bearings	Stainless steel	–	Bronze bearings optional
Shafts	Stainless steel	–	–

# FDB2 DIMENSION AND MATERIAL THICKNESS



FDB2 fire dampers meet international standards for both rectangular (width B 100-1200 mm and height H 100-1600 mm, 50 mm division) and circular ducts (Ø100-1250 mm). Special non-standard dimensions and flange drilling available on request. Modular construction sizes up to 2400x3200 mm are available. Standard frame material thickness 3 mm. Frame thickness 3-5 mm according to SOLAS available on request.

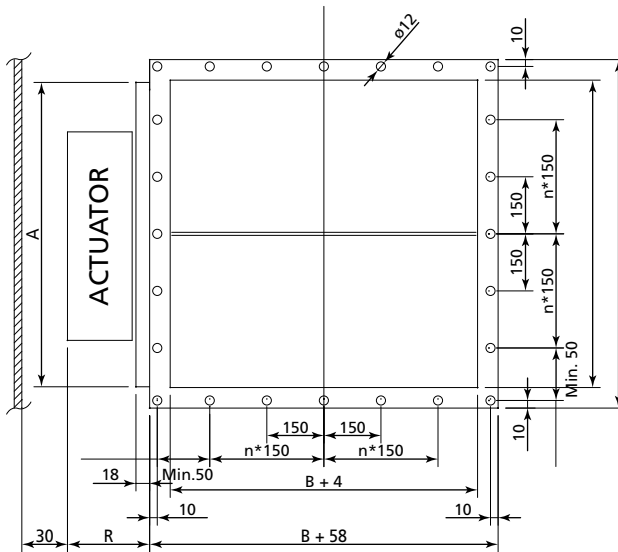
## ACTUATOR EFFECT IN DIMENSIONS

Actuator		Dimensions	
		R	A
Electrical	24V, 120V, 230V	90	H
Pneumatic PNL	Linear actuator 245/300 N	110	H ≤ 500 = 500 H > 500 = H
Pneumatic PNR	Pneumatic rotating actuator	170	H
Spring	Spring	140	H

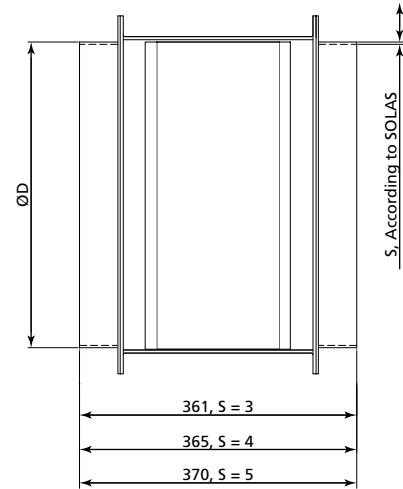
## FRAME THICKNESS ACCORDING TO SOLAS

Dimensions	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	5	215

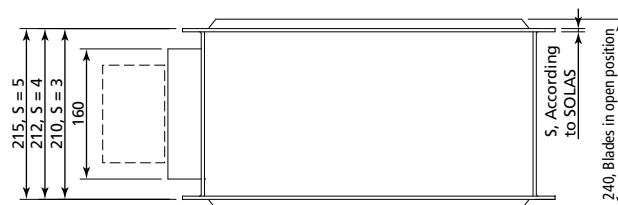
## GENERAL FDB2 DRAWING



## FDB2 CIRCULAR CONNECTIONS



## GENERAL FDB2 DRAWING, TOP



# FDB2 PRODUCT OPTIONS

## FDB2 PRODUCT OPTIONS

Halton FDB2 is available with following actuators:

- FDB2-EL: Electrical spring return motor; standard actuators being BLF24, BF24 (AC 24 V 50/60 Hz DC 24 V) or BLF230, BF230 (AC 230 V 50/60 Hz) or BF120 (AC 120 V 50/60 Hz). The motor contains builtin open-closed limit switches. Separate junction box included in the EL-model.
- FDB2-PNR: Pneumatic rotating actuator
- FDB2-PNL: Pneumatic linear actuator, material AISI 316
- FDB2-SP: Manual spring-actuated damper with fusible link.

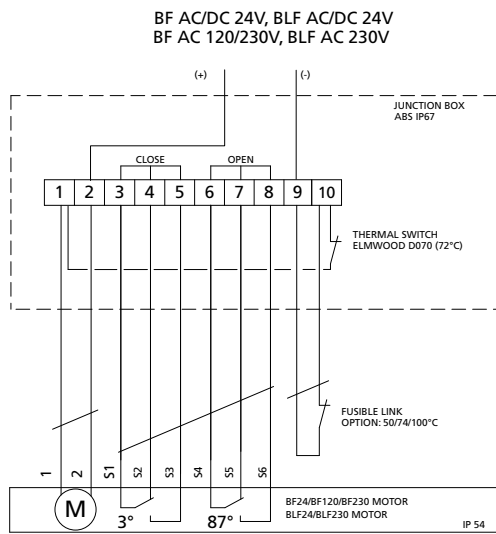
DOT: manual override function available for PNL and EL models. Ask more information for more actuators and accessories.

## OPERATION PRINCIPLE

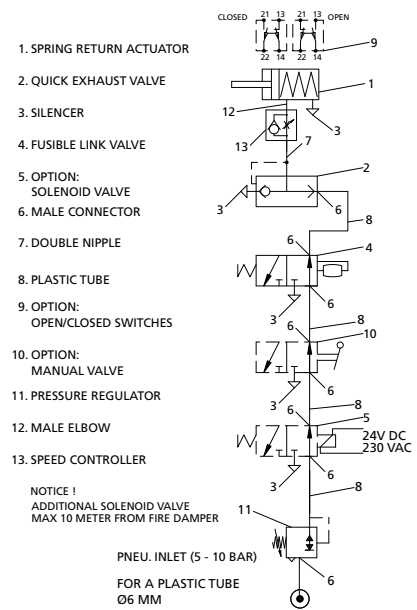
In the event of a temperature rise in ductwork:

- FDB2-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.
- FDB2-PNR, FDB2-PNL: 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 reestablished.
- FDB2-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.

## FDB2-EL WIRING DIAGRAM



## FDB2-PNR/PNL PNEUMATIC DIAGRAM



H/height	B / Width (mm)											D2 ØD	Weight	
mm	100	200	300	400	500	600	700	800	900	1000	1100	1200	mm	kg
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)	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)	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)	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)	200	16 (16)
500	18 (19)	21 (22)	23 (23)	26 (28)	28 (32)	31 (35)	33 (42)	36 (45)	38 (48)	40 (52)	43 (55)	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)	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)	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)	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)	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)	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)	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)	1250	109 (146)
1300	34 (45)	39 (50)	42 (54)	46 (58)	50 (63)	54 (69)	58 (74)	61 (78)	66 (84)	70 (87)	74 (92)	78 (97)		
1400	36 (48)	41 (54)	44 (57)	48 (61)	53 (66)	57 (73)	62 (78)	65 (83)	70 (88)	74 (92)	78 (97)	82 (102)		
1500	38 (51)	43 (58)	47 (61)	51 (64)	56 (70)	60 (76)	65 (82)	68 (87)	74 (92)	79 (92)	82 (102)	87 (107)		
1600	40 (53)	45 (63)	49 (64)	54 (67)	59 (73)	63 (80)	68 (86)	71 (91)	77 (97)	83 (101)	87 (107)	92 (113)		

(Frame thickness according to SOLAS)

FDB2-EL weights include actuator BF24 or BF230. Weights of other models compared to FDB2-EL: FDB2-PNL +1 kg, FDB2-PNR +1 kg, FDB2-SP -2 kg.