

# MARINE FIRE DAMPER MFDA

TECHNICAL DATA





The FläktGroup marine fire damper, MFDA, are tested and type approved according to Solas Class A0 and A60 and by most recognized classification societies such as BV, LR and DNV-GL. The damper is certified according to Marine Equipment Directive Module B with certificate nr EUF129-20001899-MED. Our fire dampers can be used on both Marine and Navy ships.

The main function of the MFDA is to prevent the fire and smoke from spreading through the ventilation system from one fire section to another fire section, enabling the ship to continue to operate even with a fire situation on board. Additionally, the accurately functioning fire dampers minimize the damage caused by a local fire on board.

Several different types with different features and materials are available.

#### PRODUCT DATA

- Sizes 150x150 ... 1300x1200 mm
- Fire class A0/A60
- Certified according to Marine Equipment Directive Module B: EUF129-20001899-MED
- Made of galvanized steel or stainless steel (EN 1.4404/AISI 316L).
- Leakage rated fire damper meets the requirements of leakage class 1-3 according to EN 1751.
- Fire damper casing meets the requirements of leakage class B according to EN 1751.
- Maximum pressure against a closed damper is allowed to be 3000 Pa, and duct air velocities up to 15 m/s.
- Normal operating temperature is from -45 °C to +80 °C (depending on the fuse release temperature).

#### PRODUCT CODE EXAMPLE

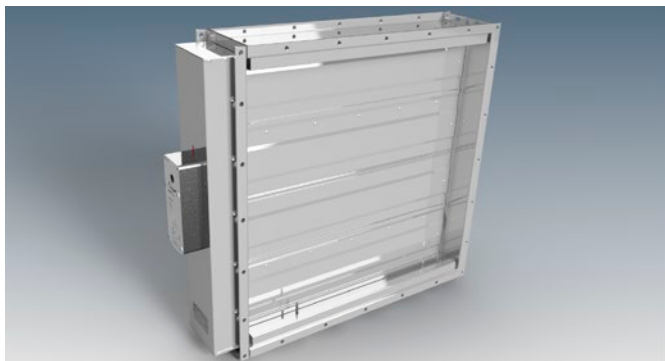
Marine fire damper MFDA-080010001111

Fire damper in size 800x1000, made of standard galvanized steel, with Belimo 24 V actuator, 72 °C fuse and standard flange.

GENERAL

APPLICATIONS AND FEATURES

The MFDA fire damper can be installed in both bulkheads and decks and can be supplied in galvanized steel as well as stainless steel (EN 1.4404/ AISI 316L) material. The damper blades, especially developed for low pressure drop and sound generation, are always insulated, ensuring good insulation properties also when the fire damper is used as for instance a shut-off damper. The blades are of double skin (sandwich) construction for low weight and good stability. The blades are further equipped with both normal seals and flame guard plates ensuring the tightness of the damper in all conditions. Furthermore, thermal expansion seals are used on the frame of the damper to ensure the absolute tightness of the damper during fire. The dampers can be operated in pressures up to 3000 Pa and duct air velocities up to 15 m/s. Normal operating temperature for the fire damper varies between -45 °C to +80 °C (depending on the fuse release temperature).



The leakage rated damper fulfills the following leakage classes:

CEN1	< 300x300
CEN2	300x300 - 800x800
CEN3	> 800x800

The casing has a leakage class B.

The damper size range is from 150 mm x 150 mm to 1300 mm x 1200 mm (width x height). The height increment is 50 mm and the width increment is 25 mm.

FUNCTION

The function of the damper is controlled by a heat sensitive fuse which is connected to the damper actuator through a cable. When the temperature in the duct exceeds the chosen temperature level, the fuse releases the actuator and the fire damper closes by means of the spring energy of the fire damper actuator. The fuse is a thermoelectric tripping device, especially designed for the actuators supplied with the MFDA. The temperature of the fuse can be chosen to fit the operating conditions in which the damper is installed. The normal closing temperature being 72 °C but also the following temperatures can be chosen, 95 °C, 120 °C and even 140 °C making it possible to install the fire damper in very harsh conditions as well. This non mechanical, thermoelectrical fuse is maintenance free and is unsensitive to corrosion, dirt, dust or other possible contaminants in the air stream making it a safe choice for demanding environments aboard a ship.



The actuator is an electrically operated spring return actuator and comes as standard for either 24 V DC/AC or 230 V AC. On special request also 120 V AC is available. The actuator type is chosen depending on the size of the damper, a larger damper requires a stronger motor to ensure immediate closing in a fire situation.



The MFDA damper is equipped with a control unit on both side of the bulkhead or the deck. With the control unit the functionality of the damper can easily and regularly be tested. The position of the blades is seen and indicated by led lights on the control unit.

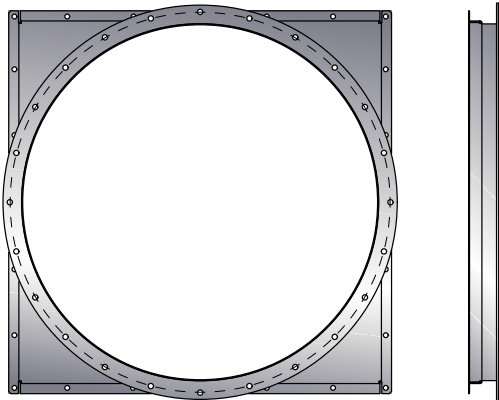


The damper is also equipped with a mechanical, easy to see, indicator for the damper position.



OPTIONAL EQUIPMENT

The rectangular damper can be equipped with round connections to fit directly into the round ducting on the ship. Several alternatives and sizes are available.

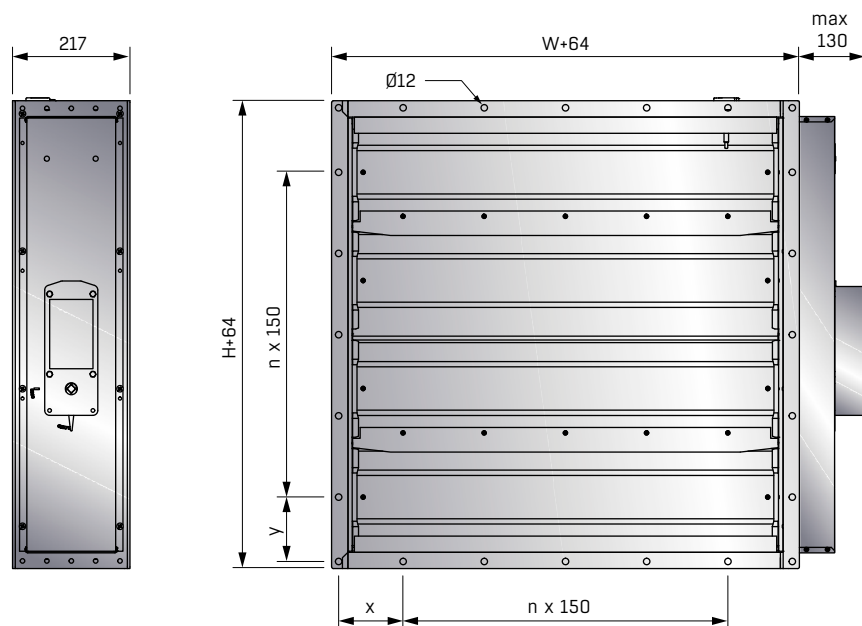


A junction box to connect the damper control to the ship system enabling remote operation of the damper is also available.



## DIMENSIONS AND WEIGHTS

### DIMENSIONS



Nominal duct size:

Width (W):

150 - 1300 mm, with 25 mm division

Height (H):

150 - 1200 mm, with 50 mm division

W	0150	0200	0250	0300	0350	0400	0450	0500	0550	0600	0650	0700	0750	0800	0850	0900	0950	1000	1050	1100	1150	1200	1250	1300
H	0150	0200	0250	0300	0350	0400	0450	0500	0550	0600	0650	0700	0750	0800	0850	0900	0950	1000	1050	1100	1150	1200		
x	94	119	144	169	44	69	94	119	144	169	44	69	94	119	144	169	44	69	94	119	144	169	44	69
y	94	119	144	169	44	69	94	119	144	169	44	69	94	119	144	169	44	69	94	119	144	169		
n	1	1	1	1	3	3	3	3	3	3	5	5	5	5	5	5	7	7	7	7	7	7	9	9

### WEIGHTS (KG)

Height (mm)	Width (mm)											
	0200	0300	0400	0500	0600	0700	0800	0900	1000	1100	1200	1300
0200	10.8	12.8	14.8	16.8	18.8	26.4	29.1	31.7	34.3	37.0	39.6	42.2
0300	13.3	15.5	17.7	19.9	22.1	30.3	33.2	36.0	38.8	41.7	44.6	48.1
0400	16.4	18.8	21.1	23.5	25.8	34.6	37.6	40.6	43.5	46.5	49.5	52.5
0500	18.8	21.4	23.9	26.5	29.0	38.4	41.6	44.8	48.0	51.2	54.5	58.4
0600	22.0	24.7	27.4	30.1	32.8	42.6	46.0	49.4	52.7	56.0	59.4	62.7
0700	28.4	31.7	34.9	38.2	41.6	46.7	50.3	53.8	57.3	60.9	64.5	68.6
0800	31.8	35.3	38.7	42.1	45.6	50.8	54.5	58.2	61.9	65.6	69.3	73.0
0900	34.7	38.3	41.9	45.6	49.4	54.8	58.7	62.6	66.5	70.4	74.3	78.8
1000	38.1	41.9	45.7	49.5	53.3	58.9	62.9	67.0	71.0	75.0	79.1	83.1
1100	41.0	45.0	48.9	52.9	57.0	62.8	67.1	71.4	75.6	79.9	84.1	89.0
1200	44.4	48.6	52.7	56.8	61.1	66.9	71.4	75.8	80.1	84.5	88.9	93.3

Weights without actuator.

### FRAME MATERIAL THICKNESS ACCORDING TO SOLAS AND ACTUATOR SPECIFICATION & WEIGHTS

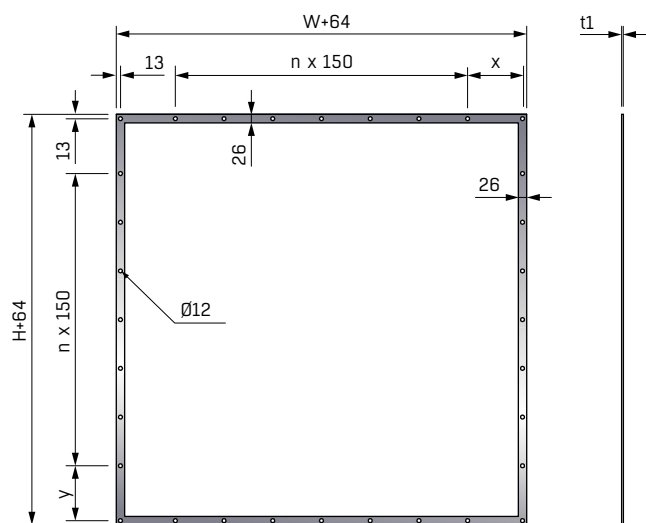
Dimensions	Frame thickness (mm)	Actuator model	Belimo actuator weight (kg)
If W and H ≤ 600	4	Belimo BFN-T	1.5
If W or H > 600	5	Belimo BF-TN	3.1

### MFDA FIRE DAMPER MATERIAL SPECIFICATION

Model	MFDA, galvanized steel	MFDA, stainless steel
Frame	S235 hot dip galvanized	EN 1.4404 (AISI316L)
Blades	Galvanized steel	EN 1.4404 (AISI316L)
Bearings	AISI316	AISI316
Shafts	EN 1.4404 (AISI316L)	EN 1.4404 (AISI316L)

## ACCESSORIES

### RECTANGULAR COUNTERFLANGE MFDZ-3



Nominal duct size:

Width (W):

150 - 1300 mm, with 25 mm division

Height (H):

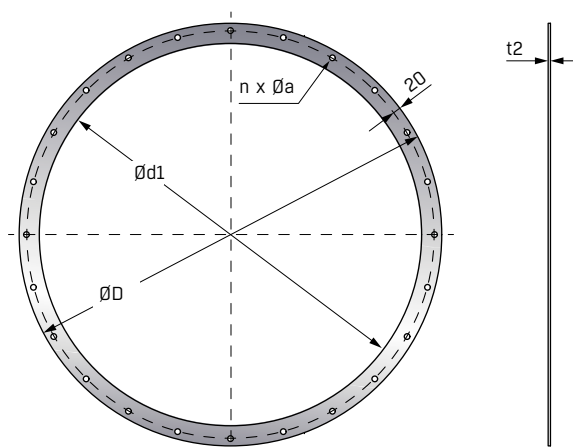
150 - 1200 mm, with 50 mm division

$t_1 = 4 \text{ mm}$  if  $W$  or  $H \leq 600$ ,

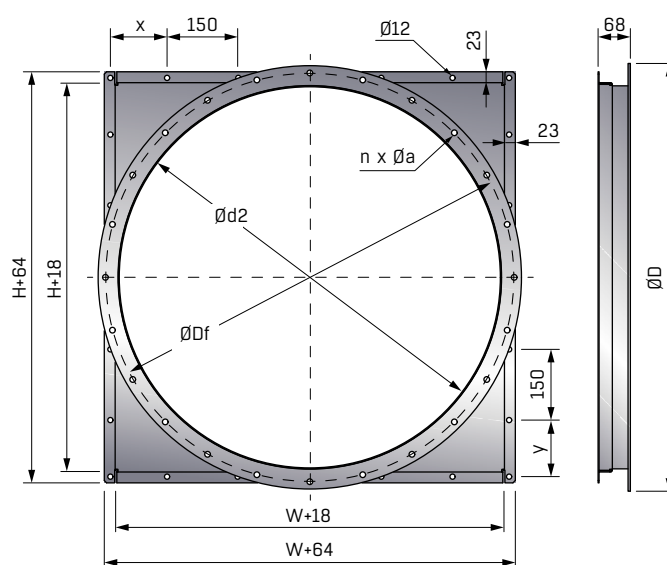
$t_1 = 5 \text{ mm}$  if  $W$  or  $H > 600$

For the dimensions, see MFDA table on previous page.

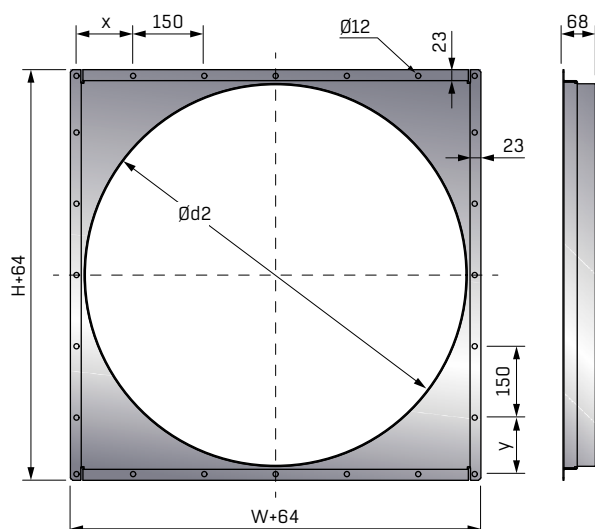
### CIRCULAR COUNTERFLANGE MFDZ-4



### CIRCULAR CONNECTION WITH FLANGE MFDZ-6



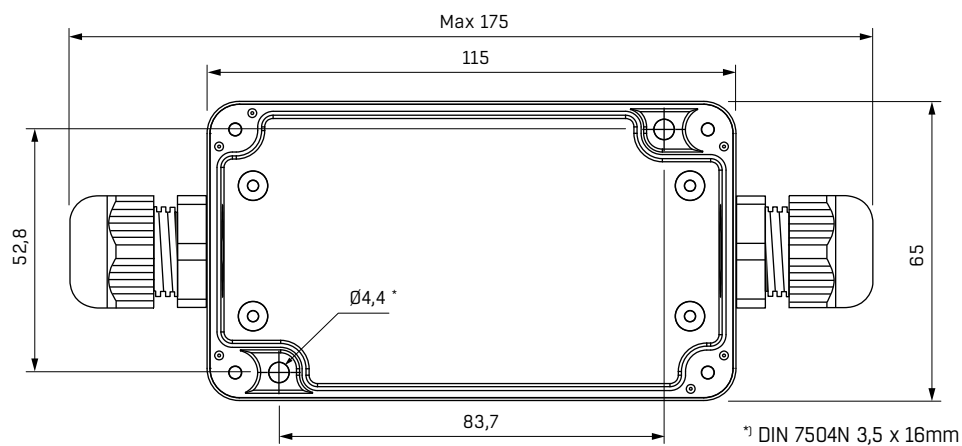
### CIRCULAR CONNECTION WITHOUT FLANGE MFDZ-5



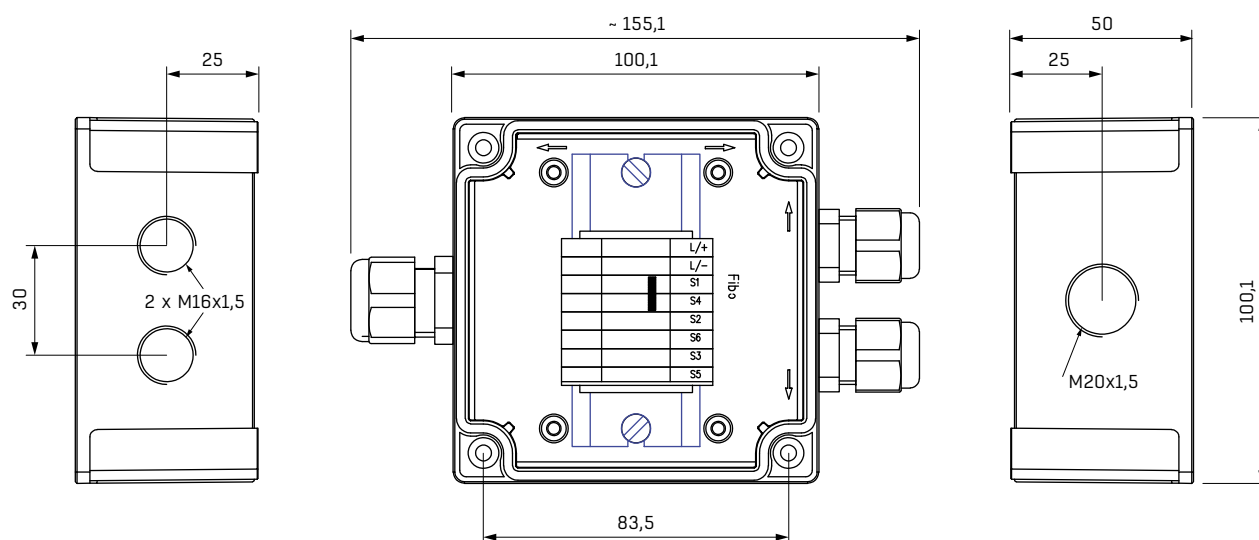
Nominal duct size dddd	W / H gggg (mm)	ØD (mm)	ØDf (mm)	Ød1 (mm)	Ød2 (mm)	n (pcs.)	Øa (mm)	x / y (mm)	t2 (mm)
100	150	145	105	106	100	4	10	94	3
125	150	170	130	131	125	4	10	94	3
160	200	205	165	166	160	4	10	119	3
200	200	245	205	206	200	4	10	119	3
250	250	295	255	256	250	8	10	144	3
315	350	360	320	321	315	8	10	44	4
400	400	459	419	406	400	8	12	69	4
500	500	559	519	506	500	12	12	119	4
630	650	689	649	636	630	16	12	44	4
800	800	859	819	806	800	24	12	119	5
1000	1000	1059	1019	1006	1000	24	12	69	5

## ACCESSORIES

### CONTROL UNIT MFDZ-1



### JUNCTION BOX MFDZ-2



## PRODUCT CODE AND ACCESSORIES

### PRODUCT CODE

**Marine fire damper** MFDA-aaaabbbbcdefg

#### Width (aaaa)

0150...1300 mm, 25 mm intervals

#### Height (bbbb)

0150...1200 mm, 50 mm intervals

#### Material (c)

- 1 = Steel, galvanized standard
- 2 = EN 1.4404 (AISI 316L) standard
- 3 = Steel, galvanized leakage rated
- 4 = EN 1.4404 (AISI 316L) leakage rated

#### Actuator (d)

- 1 = Belimo 24 V
- 3 = Belimo 230 V

#### Fuse (e)

- 1 = 72°C
- 2 = 95°C
- 3 = 120°C
- 4 = 140°C

#### Flange type (f)

- 1 = Standard

#### Connection (g)

- 1 = Damper only
- 2 = With accessories

### ACCESSORIES

#### Control unit

MFDA-1-i

#### Model (j)

- 0 = Delivered loose
- 1 = Delivered connected

#### Junction box

MFDA-2-i

#### Model (j)

- 0 = Delivered loose
- 1 = Delivered connected

#### Rectangular counterflange (separate)

MFDA-3-aaaabbbbcf

#### Circular counterflange (separate)

MFDA-4-ddddcf

#### Circular connection w/o flange (separate)

MFDA-5-ggggdddc

#### Circular connection with flange (separate)

MFDA-6-ggggdddcf

#### Width (aaaa)

0150...1300 mm, 25 mm intervals

#### Height (bbbb)

0150...1200 mm, 50 mm intervals

#### Diameter (dddd)

0100...1120 mm, according to EN 1506

#### Material (c)

- 1 = Steel, galvanized standard
- 2 = EN 1.4404 (AISI 316L) standard

#### Flange type (f)

- 1 = Standard flange

#### Rectangular standard size (gggg)

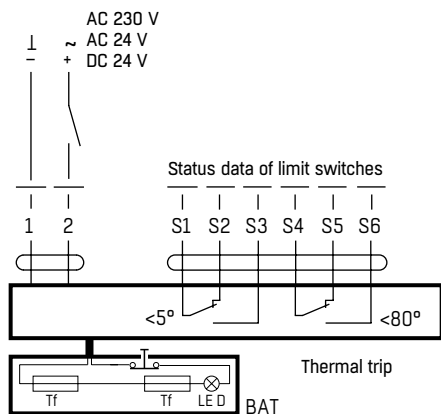
0150x0150 ... 1200x1200

other sizes available on request

## WIRING

### WIRING DIAGRAM FOR DAMPER MOTOR

Power supply



Cable colours:

1 = black

2 = red

S1 = violet

S2 = red

S3 = white

S4 = orange

S5 = pink

S6 = grey

Tf: Thermal fuse



### ACTUATOR ELECTRICAL DATA

Actuator model	Fire damper size	Voltage	Equipment	Max power hold/drive	Power for wire sizing
Belimo BFN-T	If W and H ≤ 600	24V AC/DC 230 AC	Thermal trip Thermal trip	1.4 W / 4 W 2.1 W / 5 W	6 VA 10 VA
Belimo BF-TN	If W or H > 600	24V AC/DC 230 AC	Thermal trip Thermal trip	2 W / 7 W 3 W / 8.5 W	10 VA 11 VA

Storage temperature of fire damper actuator should not exceed +50 °C





## EXCELLENCE IN SOLUTIONS

FläktGroup is the European market leader for smart and energy efficient Indoor Air and Critical Air solutions to support every application area. We offer our customers innovative technologies, high quality and outstanding performance supported by more than a century of accumulated industry experience. The widest product range in the market, and strong market presence in 65 countries worldwide, guarantee that we are always by your side, ready to deliver Excellence in Solutions.

### PRODUCT FUNCTIONS BY FLÄKTGROUP

Air Treatment | Air Movement | Air Diffusion | Air Distribution | Air Filtration  
Air Management & ATD's | Air Conditioning & Heating | Controls | Service

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