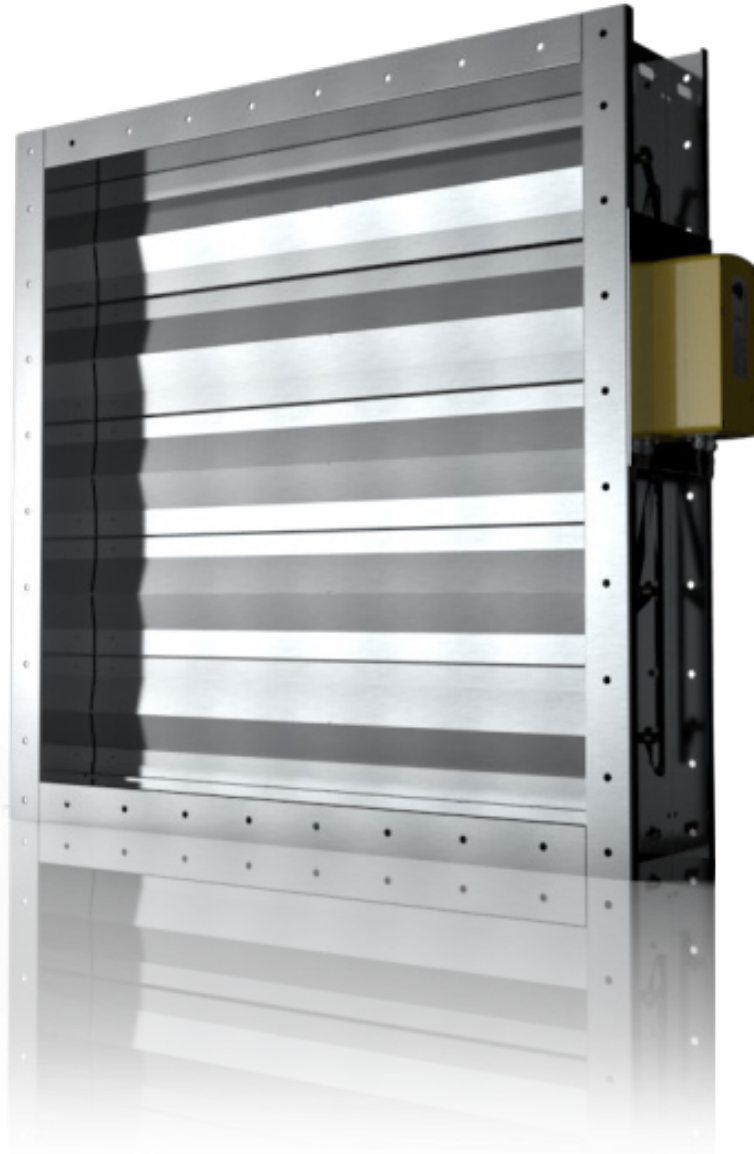




Marine Fire Damper (MFD)

Simplicity in design delivers long-life reliability with the Wozair MFD Marine Fire Damper / Fire and Gas Damper.



Marine Fire Damper

The stainless steel isolation seals, oil impregnated bearings and low leakage bearing assemblies prevent fire, gas and smoke spread through ventilation systems, maintaining the integrity of that division, bulkhead or deck. For smoke clearance, the damper has been tested at 572°F for 1 hour.

Manufactured using modern CNC laser cutting and folding processes, with metal to metal blade tip and blade edge sealing arrangements to achieve exceptional performance without the aid of gasket materials.

The MFD holds Type Approval Certification with a number of Class Administrations for cellulosic fire conditions, from A-0 to A-60.

The MFD is a tried and tested design, which has been supplied on hundreds of projects since 2003. It can be used in both safe and hazardous areas, and has a fully customisable design from simple control layouts to SIL2 compliant assemblies.

Technical Information

Minimum Size

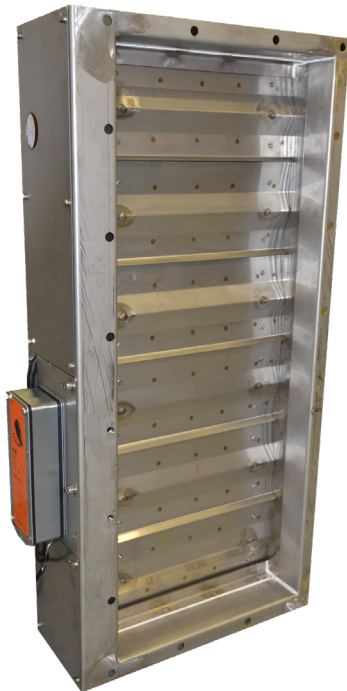
6"W x 6"H x 8"D
6"W x 6"H x 12"D

Maximum Size

98"W x 83"H x 8"D / 12"D mm A-0 / A-30 – bulkhead and deck
98"W x 48"H x 8"D / 12"D mm A-60 – bulkhead and deck

Fire Rating

Fully tested to SOLAS / IMO 2010 FTP Code and A754 (18) for A-0 to A-60 bulkhead and deck divisions with extended stability and integrity testing for 4 hours



Leakage

Closed blade leakage to Class 2 EN1751 / Class 3 as an option
Case leakage to Class B EN1751

Explosive Atmosphere

ATEX/IECEX SGS Baseefa/SGS Fimko Oy

Reliability Assessment

Functional Safety SIL 2 CSA SIra Certificate

Materials of Construction

Casing and Flanges:

Materials

Stainless Steel 304L/316L (1.4307/1.4404); Galvanised Sheet Steel (GSS), carbon steel (GAM)
Other Stainless Steel grades available on request

Thickness

Minimum 14G (at 8" deep) 11G - 6G thick (at 12" deep)
Thickness following SOLAS
Fully welded

Flange drilling detail to ISO 15138 standard
Custom flanges as option

Blades:

Materials

Stainless Steel 304L/316L (1.4307/1.4404)
Other Stainless Steel grades available on request

Thickness

Minimum 18G double skin
Plug welded to solid shafts

Shafts:

Ø3/4" continuous solid shaft in Stainless Steel 316/316L (1.4401/1.4404)

Bearings:

Oil impregnated sintered bronze. Low temperature option to -76°F and low leakage bearing assembly option available

Side Seals:

Stainless Steel 316L (1.4404)

Linkage:

Stainless Steel 316L (1.4404)
6G thick link bars arranged to provide opposed blade motion

Blade Gasket:

N/A; metal to metal forms the seal

Mechanical Options

The following options can be incorporated if required:

- Increased flange thickness
- Stainless Steel bearings in place of sintered bronze (as standard)
- Transitions; various options for fitting into circular ductwork
- Earth bosses
- Lifting lugs
- Switch boxes for local testing either side of bulkhead

Type Approval Certification

DNV GL, ABS and Bureau Veritas CE Marking Construction Products Regulation EN15650 USCG (Mutual Recognition Agreement with MED)

MED

Module B Type Examination with DNV GL Verification Module D Conformity to Type based on quality assurance of the production process with DNV GL (UK / Houston).
Module F Conformity to Type based on product verification available at other locations (Singapore).

Control Options

Wozair dampers can be operated with electric or pneumatic actuators. The pneumatic and electric controls will be selected based on your exacting requirements.

Dampers can be designed to close or open on loss of power when fitted with an electric or pneumatic actuator. The electric actuators options are Petz, Schischek, Belimo and Johnson Controls and pneumatic actuator by Powertork.

The actuator will be selected following your technical needs:

- Electric or pneumatic actuation system
- Requested closing time (1, 2 or 3 seconds closing time or longer)
- Class I, II, III Division 1 BCDEFG T6 and zone 1, 2, 21, 22
- Class I, II, III Division 2 ABCDEFG T6 and zone 2, 22
- ATEX and IECEx Zone 1, 21 (II 2GD) and 2, 22 (II 3GD) or non hazardous area, based on actuator selection
- Design Temperature (from -76°F/-60°C to +158°F/+70°C)
- NEMA / IP rating
- Environment (High corrosion resistance)

Weights

MFD Bare Shaft Damper Weight Matrix - 8"D (14G thick)

| lb | H (in) | | | | | | | | | | | |
|--------|--------|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| | 6 | 12 | 18 | 24 | 30 | 35 | 41 | 47 | 61 | 75 | 83 | |
| W (in) | 6 | 20 | 29 | 37 | 46 | 55 | 62 | 71 | 77 | 110 | 132 | 146 |
| | 12 | 29 | 44 | 53 | 64 | 73 | 82 | 90 | 101 | 146 | 172 | 185 |
| | 18 | 40 | 53 | 68 | 79 | 93 | 101 | 112 | 123 | 183 | 212 | 227 |
| | 24 | 49 | 66 | 84 | 97 | 110 | 121 | 134 | 146 | 218 | 251 | 269 |
| | 30 | 57 | 79 | 99 | 115 | 130 | 143 | 157 | 170 | 256 | 291 | 309 |
| | 35 | 68 | 93 | 115 | 130 | 148 | 163 | 176 | 192 | 291 | 331 | 351 |
| | 41 | 77 | 104 | 130 | 148 | 168 | 183 | 198 | 214 | 328 | 370 | 392 |
| | 47 | 86 | 117 | 146 | 165 | 185 | 203 | 220 | 238 | 364 | 410 | 432 |
| | 61 | 123 | 168 | 212 | 243 | 276 | 304 | 333 | 364 | 520 | 593 | 631 |
| | 75 | 157 | 207 | 258 | 291 | 331 | 362 | 392 | 425 | 613 | 692 | 736 |
| | 89 | 183 | 240 | 298 | 335 | 377 | 412 | 448 | 483 | 699 | 787 | 833 |
| | 98 | 201 | 262 | 324 | 366 | 410 | 448 | 485 | 522 | 761 | 853 | 904 |

Additional nominal weights:

Manual handle 7lb

Belimo or Johnson Controls actuator with junction box 7lb

Petz or Schischek actuator with junction box 11lb

Pneumatic actuator and components with controls enclosure 33lb

MFD Bare Shaft Damper Weight Matrix - 12"D (11G thick)

| lb | H (in) | | | | | | | | | | | |
|--------|--------|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| | 6 | 12 | 18 | 24 | 30 | 35 | 41 | 47 | 61 | 75 | 83 | |
| W (in) | 6 | 24 | 35 | 46 | 57 | 66 | 75 | 84 | 93 | 132 | 159 | 172 |
| | 12 | 35 | 49 | 62 | 75 | 88 | 97 | 108 | 119 | 172 | 201 | 216 |
| | 18 | 46 | 64 | 79 | 95 | 110 | 119 | 132 | 143 | 212 | 243 | 262 |
| | 24 | 57 | 77 | 95 | 115 | 132 | 143 | 157 | 170 | 254 | 287 | 306 |
| | 30 | 71 | 93 | 112 | 134 | 154 | 165 | 183 | 194 | 293 | 328 | 353 |
| | 35 | 82 | 108 | 130 | 154 | 174 | 187 | 207 | 220 | 333 | 370 | 397 |
| | 41 | 93 | 121 | 146 | 172 | 196 | 209 | 231 | 245 | 373 | 412 | 441 |
| | 47 | 104 | 137 | 163 | 192 | 218 | 231 | 256 | 269 | 414 | 456 | 487 |
| | 61 | 146 | 192 | 231 | 276 | 315 | 340 | 373 | 399 | 575 | 644 | 690 |
| | 75 | 181 | 236 | 280 | 331 | 375 | 401 | 441 | 467 | 679 | 750 | 802 |
| | 89 | 212 | 273 | 324 | 379 | 430 | 456 | 500 | 529 | 774 | 851 | 911 |
| | 98 | 231 | 300 | 353 | 414 | 467 | 496 | 545 | 573 | 842 | 922 | 985 |

Additional nominal weights:

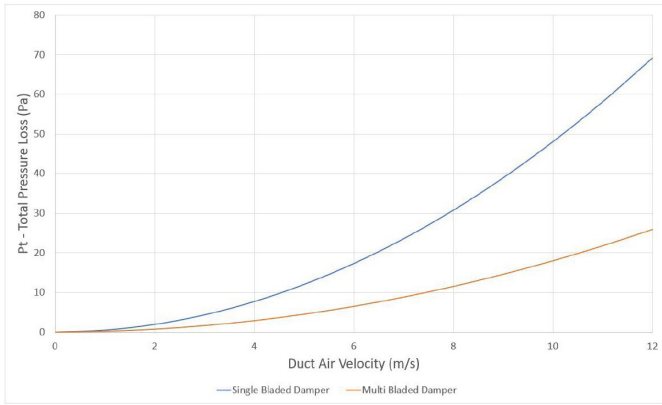
Manual handle 7lb

Belimo or Johnson Controls actuator with junction box 7lb

Petz or Schischek actuator with junction box 11lb

Pneumatic actuator and components with controls enclosure 33lb

Performance



Full aerodynamic performance data is presented above and is based on conclusive tests.

Total Pressure Loss - the difference in pressure measured across the Fire Damper when the blades are fully open.

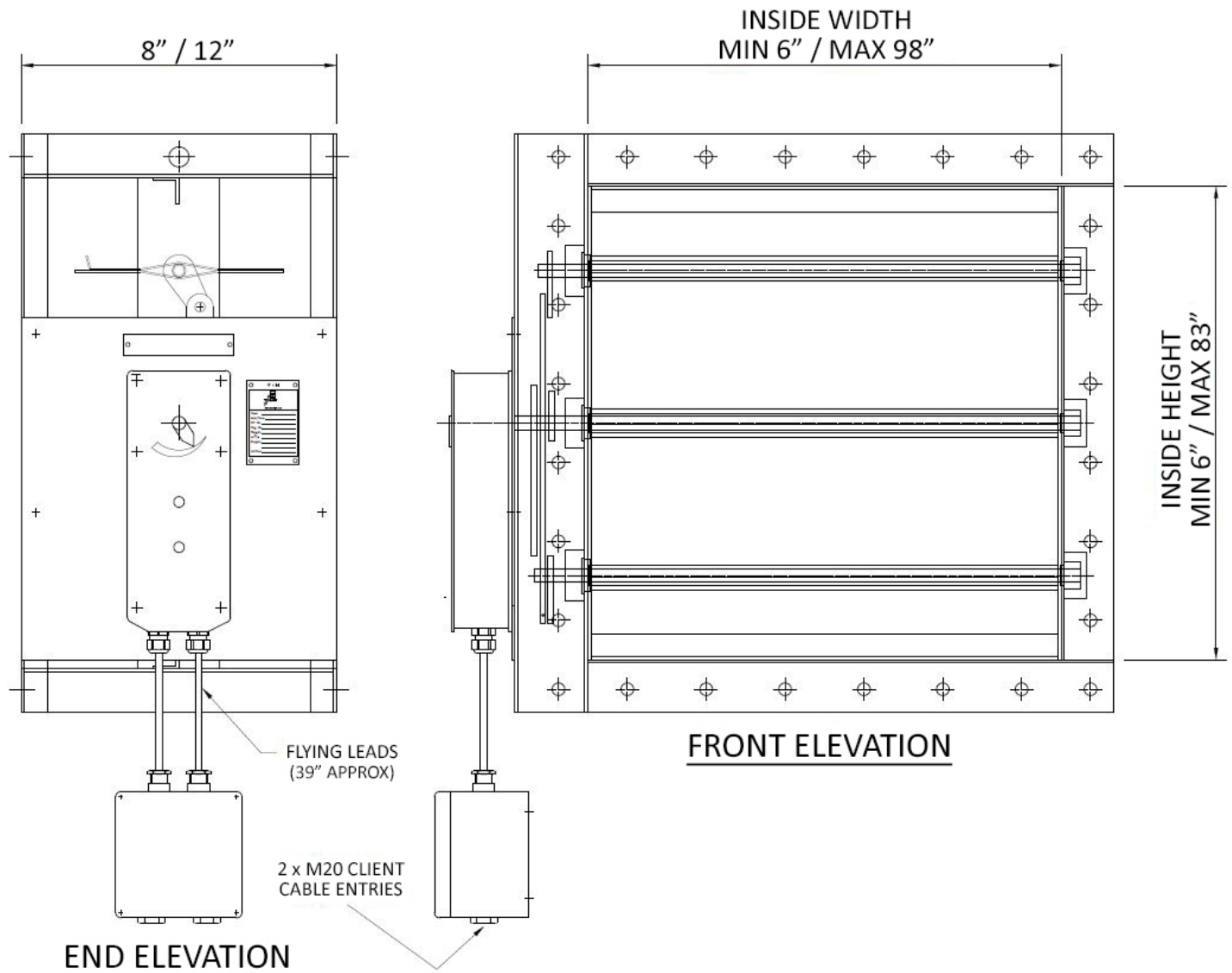
Ordering

| | | | |
|--------------------------------------------------------------------|---------------|--------------------|-----|
| Type: | MFD | Duct Width: | 20" |
| Duct Height: | 12" | Case Depth: | 8" |
| Type Wozair: Marine Fire Damper | | | |
| Case Material: | | | |
| <u>Stainless Steel</u> | | | |
| Low Carbon | 1.4307 = 304L | | |
| Low Carbon | 1.4404 = 316L | | |
| <u>Mild Steel Sheet</u> | | | |
| Pre-Galvanised FeP02 nac = GSS | | | |
| Galvanised after Manufacture = GAM | | | |
| Case Thickness: 14G to 3/8" with various case depth options | | | |
| <u>Controls Options</u> | | | |
| P = Pneumatic | | | |
| E = Electric | | | |
| Nominal: Clear inside duct dimensions | | | |
| Duct Size: 'Quote' (Width x Height) | | | |
| Order Code Example: | | | |
| MFD/316L/14G/20W/12H/8D/P | | | |

Additional Images



Dimension Drawing (Example with Electric Actuator)



Wozair (USA) Ltd

3601 North Loop
336 West
Conroe
Texas
77304
United States of America

Phone +1 936 521 5990

Email houstonhvac@wozair.com

Wozair Limited

Grosvenor Road
Gillingham Business Park
Gillingham
Kent
ME8 0SA
United Kingdom

Phone +44 (0)1634 790 336

Email hvac@wozair.com

Wozair (Asia) Pte Ltd

2 Venture Drive
8-23 Vision Exchange
608526
Singapore

Phone +65 6890 6506

Email hvac@wozair.com.sg

Wozair Middle East

JAFZA One
Tower B, Office 1316
Jebel Ali Free Zone
Dubai, UAE
P.O. Box 262404

Phone +971 (0) 4 887 0147

Email dubaihvac@wozair.com