

MARINE / OIL & GAS FIRE DAMPER

TKO-TKS

TKO and TKS fire dampers are class A0/A60 according to code FTP and certified MED 2014/90/EU in accordance to SOLAS international convention. These equipments prevent fire and gas from spreading in offshore and marine ventilation systems.



CODIFICATION

- TK** ———> **Fire damper** - Marine / Oil&Gas application
- X** ———> **0** - Fire rated
- S** - Fire rated and gas-tight

CHARACTERISTICS

| | | TKO damper | TKS damper |
|--|------------|---|---|
| Upsteam/downstream airtightness according to EN 1751 | | Not classified | Class 3 from W 450 mm x H 450 mm Lower dimensions : Class 2 |
| Certified according to code FTP from OMI | | A60/A0 Fire dampers class | A60/A0 Fire & Gas dampers class |
| Acceptable pressure for 1200 mm blades | Accidental | 10 000 Pa | |
| | Constant | 6 000 Pa | |
| Certifications & tests | | Fire tests : EFECTIS (France) authorized ISO 17025 | |
| | | ATEX certification : LCIE (France) authorized ISO 17025 | |
| | | Certification MED 2014/90/EU (Bureau Veritas) | |
| Dimensions | | W 200 x H 200 to W 1200 x W 1400 mm in 1 part | |
| Air cross section | | Up to 88% in full opening | |
| Operating velocity | | Up to 25 m/s | |

CONSTRUCTION

| | | TKO damper | TKS damper |
|---------|-----------|---|--|
| Frame | Thickness | 3 à 5 mm according to SOLAS | |
| | Depth | 280 mm | |
| | Flange | If W x H < 1000 x 1000 : 30 mm flange If W or H ≥ 1000 : 80 mm flange <i>Option</i> : according to ISO 15138 (cf. table B page 2) | |
| | Drilling | 150 mm pitch | |
| Blades | Thickness | 2 x 1.5 mm | |
| | Height | 200 and 250 mm pitch | |
| | Bearings | Bronze insert <i>Option</i> : Stainless steel | |
| | Shafts | Stainless steel Ø 20 mm | |
| Seals | | AISI 304 stainless steel side seals - 1.4301 | AISI 304 stainless steel side seals - 1.4301 Silicon blade seals flaming resistance UL94-V0 |
| Linkage | | Opposed blade operation | |

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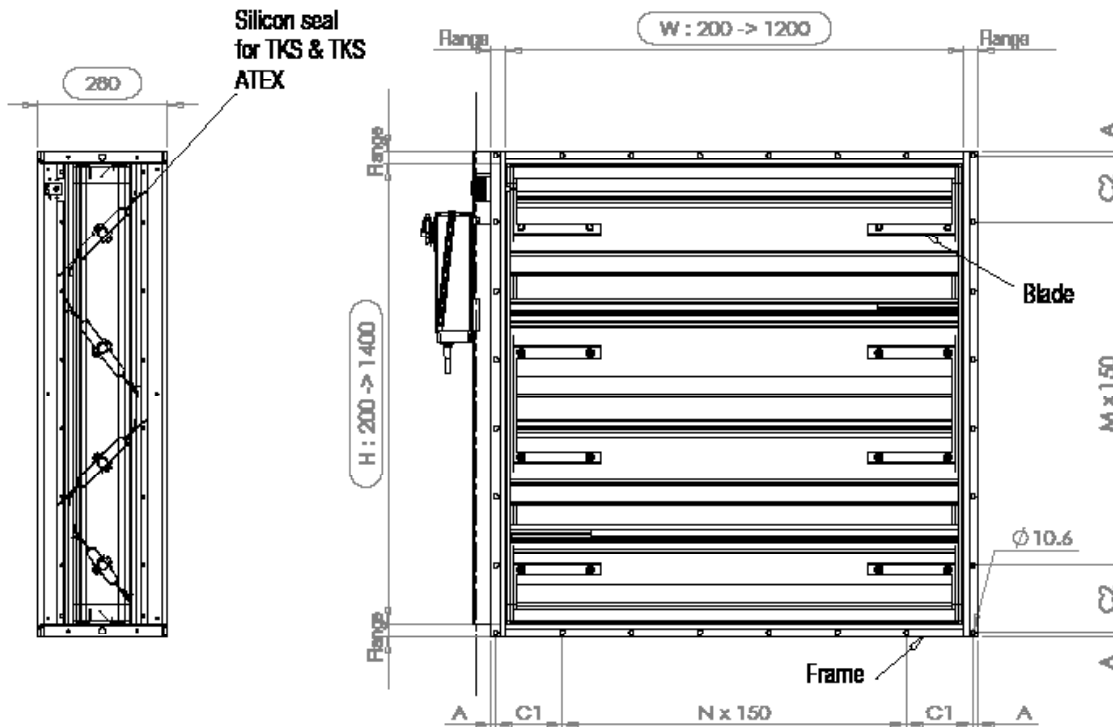
TKO-TKS

MATERIAL

| | Frame | Blades |
|----------|--|--------|
| Material | Galvanized steel Z275 according to EN 10346 | |
| | Stainless steel AISI 304L - 1.4307 according to EN 10088 | |
| | Stainless steel AISI 316L - 1.4404 according to EN 10088 | |

DIMENSIONS

Width W from 200 to 1200 mm with a 50 mm pitch
 Height H from 200 to 1400 mm with a 50 mm pitch
 Intermediate dimensions on request



A/ F2A's standard flange

| Standard width | Standard flange width | A | C1 / C2 | Ø |
|------------------|-----------------------|----|---------------|------|
| W or H < 1000 mm | 30 mm | 10 | 75 < Cx ≤ 150 | 10.6 |
| W or H ≥ 1000 mm | 80 mm | 40 | 75 < Cx ≤ 150 | 10.6 |

B/ ISO 15138 flange

| ISO 15138 | Flange width | A | C1 / C2 | Ø |
|---------------------|--------------|-------|---------------|----|
| W or H ≤ 350 | 40 mm | 20 mm | 75 < Cx ≤ 150 | 10 |
| W or H > 350 ≤ 1000 | 50 mm | 20 mm | 75 < Cx ≤ 150 | 12 |
| W or H > 1000 | 80 mm | 40 mm | 75 < Cx ≤ 150 | 14 |

| Frame sheet thickness According to Solas | |
|--|-----------------------|
| Internal section «S» = W x H | Frame sheet thickness |
| S < 0.075 m ² | 3 mm |
| 0.075 m ² ≤ S ≤ 0.45 m ² | 4 mm |
| S > 0.45 m ² | 5 mm |

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ACTUATORS

Electric On/Off with spring return

- BELIMO : • BF24
 - BF230
 - EF24A / EF24A
 - EF230A / EF230A-S2

| Height (mm) | Width (mm) | |
|------------------|--------------------------|--------------------------|
| | from 200 to 800 | from 801 to 1200 |
| from 200 to 800 | Belimo BF 24/230 - 12 Nm | Belimo EF 24/230 - 30 Nm |
| from 801 to 1400 | Belimo EF 24/230 - 30 Nm | |

- SCHISCHEK (ATEX version) : • ExMax-15-BF
 - ExMax-30-BF

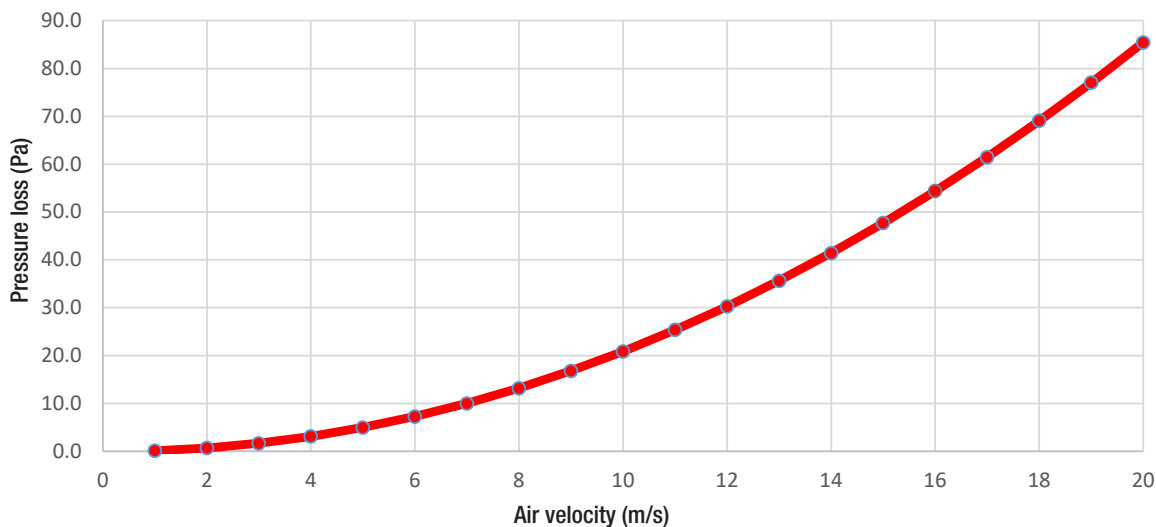
| Height (mm) | Width (mm) | |
|-------------------|-----------------------|-----------------------|
| | from 200 to 1000 | from 1001 to 1200 |
| from 200 to 1000 | Schischek ExMax 15 Nm | Schischek ExMax 30 Nm |
| from 1001 to 1400 | Schischek ExMax 30 Nm | |

Pneumatic

- AIRTORQUE AT201US10A : single effect actuator 22 Nm with an operating pressure of 5 Bar

Available for fire dampers TKO or TKS for W from L 200 mm to 800 mm and from H 200 mm to 800 mm

PRESSURE LOSS WITH BLADES OPENED AT 90°



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FUSES

When the temperature rises inside the ventilation duct, the actuator is triggered by fuses to close the damper :

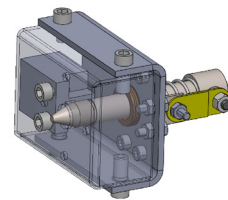
- Triggering at +72°C for Electric actuator: BELIMO or SCHISCHEK fuse.
- Triggering at other temperature or for pneumatic actuator : F2A fuse.



BELIMO's fuse



SCHISCHEK's fuse

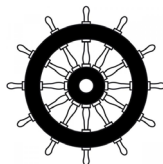


F2A's fuse

ATEX CERTIFICATION

Fire dampers exist in ATEX version :

- Damper TKO ATEX : A60/A0 Fire dampers for explosive Atmospheres
- Damper TKS ATEX : A60/A0 Fire & Gas dampers for explosive Atmospheres



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