

# 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
Upstream/downstream airtightness according to EN 1751		Not classified	Class 3 - B from W 450 mm x H 450 mm Lower dimensions : Class 2 - B
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 150 x H 150 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	150, 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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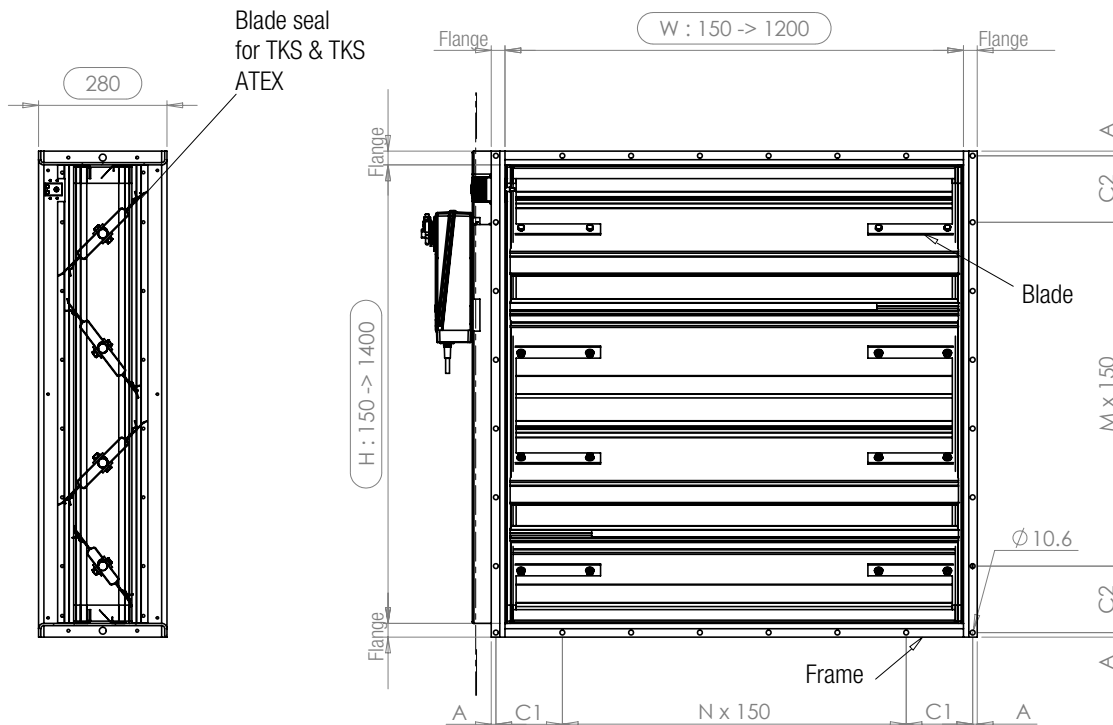
## TKO-TKS

### MATERIAL

	Frame	Blades
Material	Galvanized steel or crude steel + hot dip Galvanizing according to the thickness	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 150 to 1200 mm with a 50 mm pitch  
 Height H from 150 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	10 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 <sup>2</sup>	3 mm
0.075 m <sup>2</sup> ≤ S ≤ 0.45 m <sup>2</sup>	4 mm
S > 0.45 m <sup>2</sup>	5 mm

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### ACTUATORS

**Electric** On/Off with spring return

- BELIMO : • BF24-TN-2                      • EF24A / EF24A-S2
- BF230-TN-2                      • EF230A / EF230A-S2

Height (mm)	Width (mm)	
	from 200 to 800	from 801 to 1200
from 150 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 / InMax-15-BF
- ExMax-30-BF / InMax-30-BF

Height (mm)	Width (mm)	
	from 200 to 1000	from 1001 to 1200
from 150 to 1000	Schischek ExMax 15 Nm	Schischek ExMax 30 Nm
from 1001 to 1400	Schischek ExMax 30 Nm	

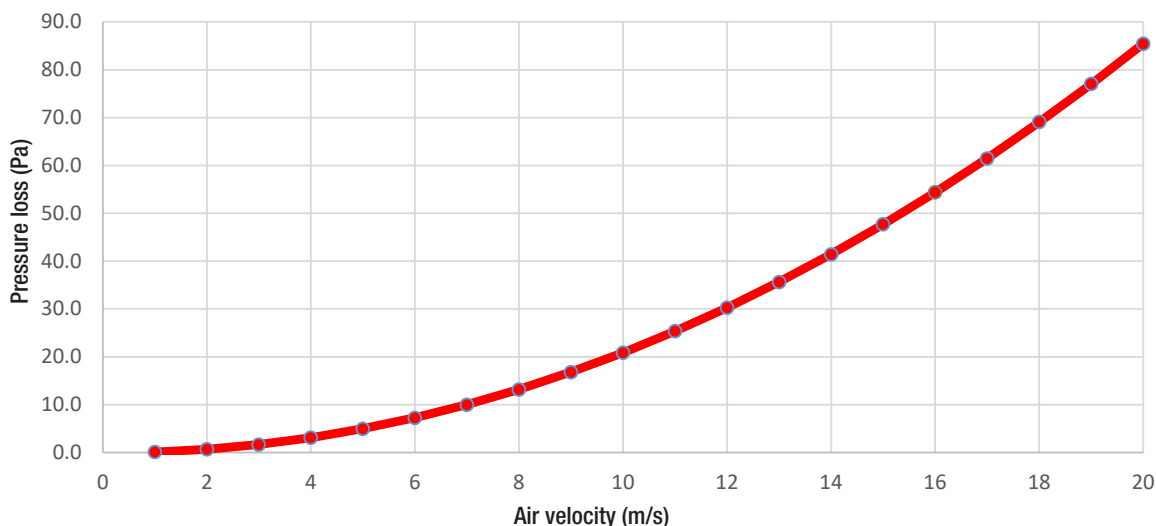
- PETZ INDUSTRIE (Version ATEX) : • QT.Ex-MFD03-SL (20-70 v AC/DC)
- QT.Ex-MFD03-SH (85-250 v AC/DC)

Height (mm)	Width (mm)
	de 150 à 800
from 150 to 1400	• QT.Ex-MFD03-SL • QT.Ex-MFD03-SH

### 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 150 mm to 1200 mm and from H 200 mm to 1400 mm

### PRESSURE LOSS WITH BLADES OPENED AT 90°



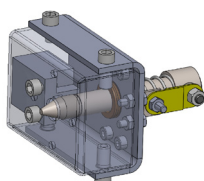
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### FUSES

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

- Triggering at +72°C for Electric actuator: BELIMO or SCHISCHEK fuse.
- Triggering at other temperature or for pneumatic actuator : on request up to 138° (please ask us).



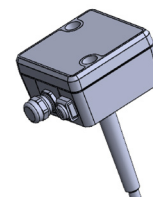
F2A's fuse  
(ATEX & non ATEX)



SCHISCHEK's fuse  
(ATEX & non ATEX)



BELIMO 's fuse  
(non ATEX)





PETZ Industrie's fuse  
(ATEX version)

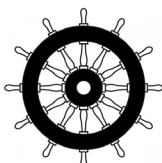
### ATEX CERTIFICATION

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

	II 2 GD c IIB T6 => T2
	II 2 GD c IIC T6 => T2 (on request)

### MED 2014/90/EU CERTIFICATION



2690 - 2020

Module B n°61472/A1 MED

Module D n° SMS.MED2.D/119345/A.1