FDO A0(A60) FIRE AND GAS DAMPER

For offshore, marine and navy ventilation systems

MATERIALS

PART	MATERIAL	FINISHING
Frame	Carbon steel	Painted or galvanised
Frame	Stainless steel EN 1.4301 (AISI304), EN 1.4404 (AISI316L), EN 1.4432 (AISI316L)	-
Blades	Steel	Galvanised
Blades	Stainless steel EN 1.4301 (AISI304), EN 1.4404 (AISI316L), EN 1.4432 (AISI316L)	-
Maintenance-free bearings	Stainless steel EN 1.4404 (AISI316L)	-
Shafts	Stainless steel EN 1.4404 (AISI316L)	-

FDO PRODUCT OPTIONS

Halton FDO is available with following actuators:

- FDO-EL: Electrical spring return motor; standard actuators being 24 V or 230 V or 120 V. The motor contains built-in open-closed limit switches. Separate junction box included in the EL-model. A wide range of Ex actuators available, including a one second closing time function as an option.
- FDO-PNR: Pneumatic rotating actuator
- FDO-SP: Manual spring-actuated damper with fusible link

DOT: manual override function available for PNR and EL models.

HSO: Halton Smart Override function for HVAC damper black-start available for PNR and EL models. With automatic reset function when power and/or pneumatic air supply is reinstated.

A wide range of accessories available.

APPLICATIONS

Halton FDO fire dampers are type-approved class A0(A60) fire dampers for use in in offshore, marine and navy ventilation systems. The FDO can be installed in circular ducts. All fire dampers have a fusible link and they prevent the spread of fire within the ventilation ductwork. When the blade is 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.

FEATURES

- Type-approved by the most recognized classification societies: class A0 - A60 fire damper when suitably insulated
- Fixed frame of painted, galvanized or stainless steel. Blades stainless or galvanized steel. Flanges available as an option
- The blade contains seals (effective up to 270 °C)
- The nominal fuse release temperature is 50 °C, 74 °C or 100 °C. Other temperatures available
- Very low leakage. See below table
- Automatic electrical, pneumatic or spring operation system available
- Maximum duct pressure for damper construction
- 5000 Pa and maximum air velocity 15 m/s
- The normal operating temperature for the damper is between -50 °C to +80 °C. Actuator and component selection can affect this temperature range. Other temperatures available on request
- Available as ATEX approved
- SIL 2 safety assessment certificate available on specific terms

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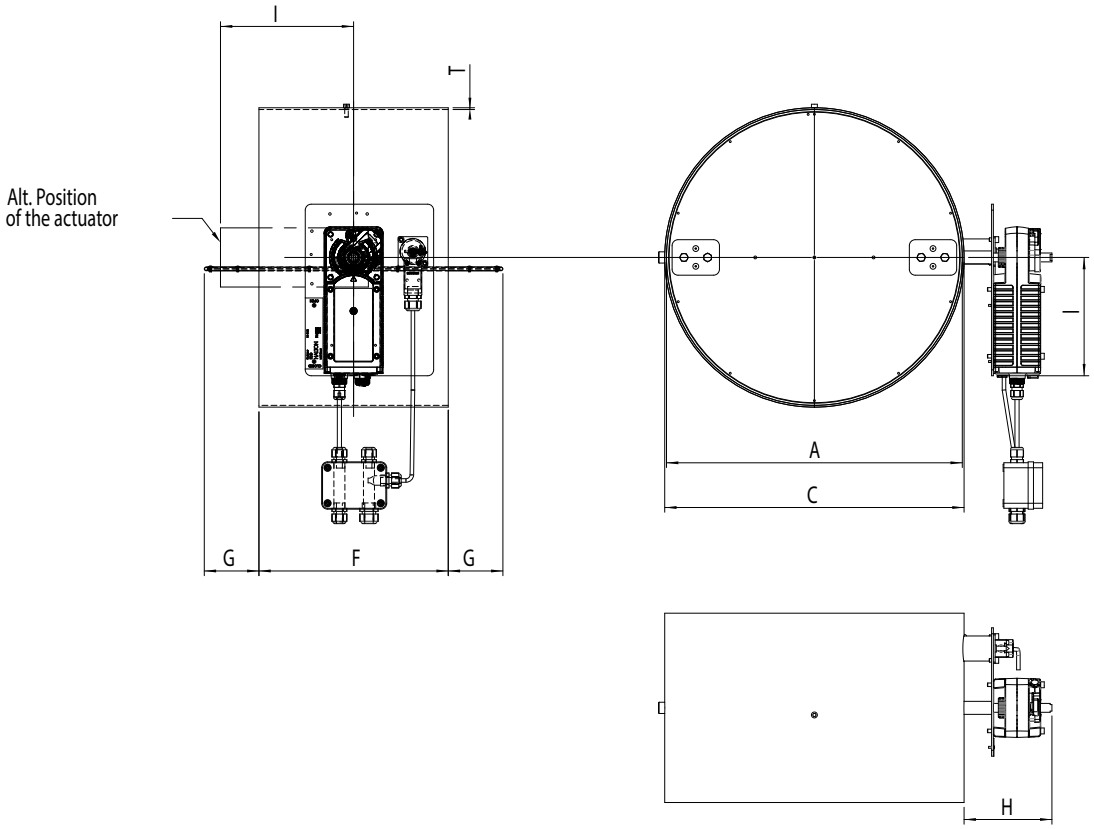
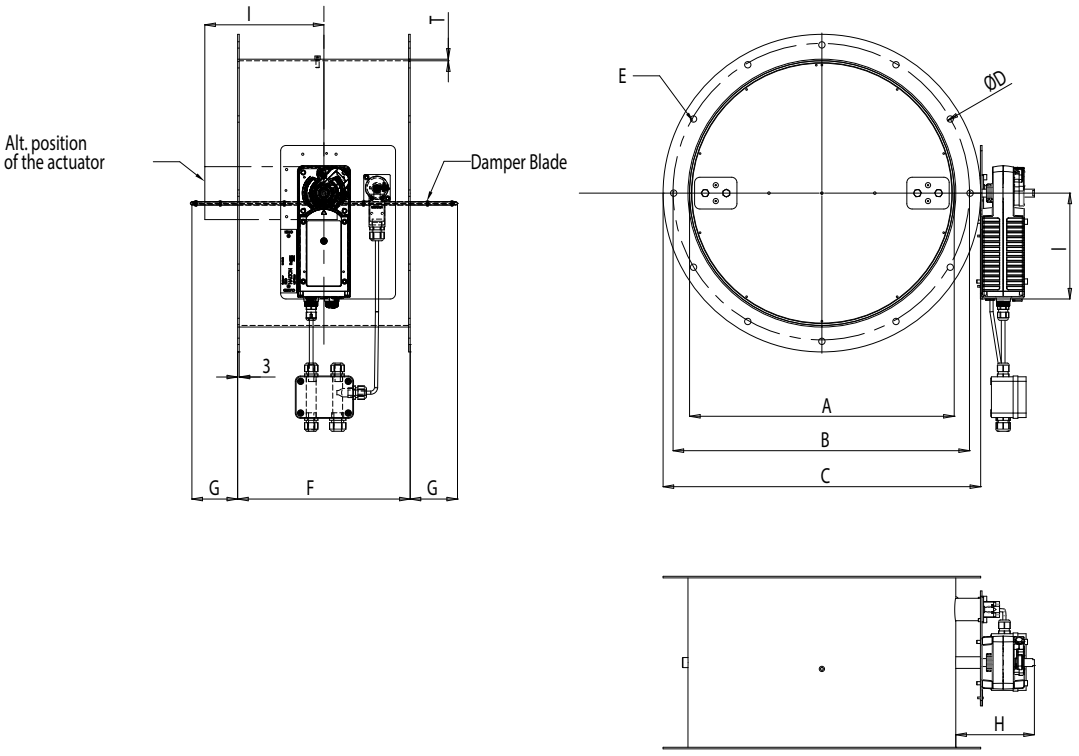
GENERAL FDO DRAWINGS

WITHOUT FLANGES



WITH FLANGES



FDO LEAKAGE CLASS ACCORDING TO STANDARD EN1751:2014

SIZE ØD (mm)	CLOSED DAMPER LEAKAGE	CASING LEAKAGE
100	2	C
125	2	C
160	3	C
200	3	C
250	3	C
315	3	C
400	3	C
500	4	C

FDO DIMENSIONS AND MATERIAL THICKNESS

FDO fire dampers meet international standards for circular ducts (Ø100-500 mm). Sizes Ø100 and Ø125 are not available of stainless steel. Sizes starting from Ø160 can be manufactured with 1 mm division. Flanges and drilling available as an option and according to ISO 15138 standards. Special flanges and drilling available on request. Frame material thickness 3 mm or according to SOLAS. Flap is made of two sheets, each of being 1 mm thick (riveted together).

FDO DIMENSIONS WITHOUT FLANGES (STANDARD)

						FDO-EL				FDO-PNR				FDO-SP	
Damper size	Inside dimensions	Outside dimensions	Material thickness	Housing Lenght	Blade	Elodrive CSQP /Schischek		Belimo BF		Air Torque AT50		Air Torque AT100		Spring	
Ø	A	C	T	F	G	H	I	H	I	H	I	H	I	H	I
100	100,8	108	3,6	200	-	150	200	115	200	145	215	165	215	150	115
125	125	133	4	200	-	150	200	115	200	145	215	165	215	150	115
160	160	166	3	200	-	150	200	115	200	145	215	165	215	150	115
200	200	206	3	320	-	150	200	115	200	145	215	165	215	150	115
250	250	256	3	320	-	150	200	115	200	145	215	165	215	150	115
315	315	321	3	320	-	150	200	115	200	145	215	165	215	150	115
400	400	408	4	320	43	150	200	115	200	145	215	165	215	150	115
500	500	508	4	320	93	150	200	115	200	145	215	165	215	150	115

FDO DIMENSIONS WITH FLANGES (AS AN OPTION)

									FDO-EL				FDO-PNR		FDO-SP	
Damper size	Inside dimensions	Bolt circle	Outside dimensions	Material thickness	Bolt holes	Bolt holes Qty	Housing Lenght	Blade	Elodrive CSQP/ Schischek		Belimo BF		Air Torque AT 50		Spring	
Ø	A	B	C	T	D	E	F	G	H	I	H	I	H	I	H	I
100	100,8	120	200	3,6	8,5	4	206	-	150	200	115	200	135	105	150	115
125	125	150	225	4	8,5	4	206	-	150	200	115	200	135	105	150	115
160	160	185	260	3	8,5	4	206	-	150	200	115	200	135	105	150	115
200	200	225	300	3	8,5	4	326	-	150	200	115	200	135	105	150	115
250	250	280	350	3	12	4	326	-	150	200	115	200	135	105	150	115
315	315	355	415	3	12	8	326	-	150	200	115	200	135	105	150	115
400	400	450	500	3	12	8	326	40	150	200	115	200	135	105	150	115
500	500	560	600	3	12	12	326	90	150	200	115	200	135	105	150	115

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OPERATION PRINCIPLE

In the event of a temperature rise in ductwork:

- FDO-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.
- FDO-PNR: 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 re-established.
- FDO-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.

WEIGHTS

STANDARD HALTON FDO DAMPERS (KG) WITHOUT AN ACTUATOR

FDO WEIGHT WITHOUT FLANGES	
Size ØD (mm)	**KG**
100	4
125	4,5
160	4,6
200	7,5
250	9
315	12
400	17
500	22,5

FDO WEIGHT WITH FLANGES	
Size ØD (mm)	**KG**
100	5
125	5,7
160	6,1
200	9,5
250	11
315	14,5
400	20,1
500	26,3

Weights stated above do not include flanges or any actuator.
Examples of actuator weights: FDO-EL CSQP +3,5 kg, BF230 +3,2 kg, BLF230 +1,7 kg, ExMax or RedMax or InMax +3,5 kg, FDO-PNR AT100 (AISI) +6,2 kg, AT50 (AISI) +3 kg, FDO-SP +1 kg.