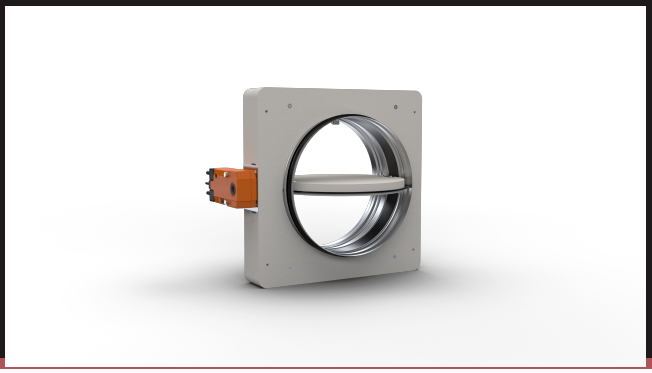
KTQ-O

ROUND FIRE DAMPER



Characteristics:
A fire damper for general ventilation installations, with an electric actuator with spring return and a mounting collar made of fire-resistant board, designed for quick installation.

SO SL RAL

version: 20/03/25

Intended use

KTQ-O fire dampers are designed for installation in general ventilation systems as isolating barriers, separating the fire engulfed zone from from the rest of the building (normally open). The function of these dampers is to prevent the spread of fire, heat, and smoke.

KTQ-O fire dampers are certified by the Maritime Advanced Research Centre, **Certificate of Constancy of Performance No. 2434-CPR-0382.**

The dampers are designed, manufactured and tested in accordance with the following standards: **PN-EN 15650** "Ventilation for buildings – Fire dampers" and **PN-EN 13501-3** "Fire classification of construction products and building elements – Part 3: Classification using data from fire resistance tests on products and elements used in building service installations: fire resisting ducts and fire dampers." The effectiveness of the dampers is confirmed by tests according to **PN-EN 1366-2** "Fire resistance tests for service installations – Part 2: Fire dampers." The KTQ-O fire damper is classified as **tightness class C** (Case leakage class of the damper installed in accordance with the Technical Documentation) on the basis of tests carried out according to **PN-EN 1751** "Ventilation for buildings. Air terminal devices. Aerodynamic testing of dampers and valves."

Classification

KTQ-O fire dampers are classified in the following fire resistance classes and may be installed in the following building partitions:

EI 120 (V_e i↔o) S

- rigid walls with a thickness of 100 mm or more and EI120 or a higher fire resistance class (e.g. concrete walls, solid brick walls, cellular concrete block walls, hollow masonry unit walls or concrete slab walls),
- flexible walls with a thickness of 100 mm or more and EI120 or a higher fire resistance class (thicker, higher density, more board layers).

The KTQ-O fire dampers may also be installed in buildings partitions with a lower fire resistance rating. In this case, the damper fire resistance rating is equal to the partition fire resistance rating, subject to the smoke leakage criterion.

Where:
E - fire integrity,
I - fire insulation,
S - smoke leakage,
V_e - damper mounted directly on the wall,
h_o - damper mounted directly in the ceiling,
i↔o - performance criteria are met from inside to outside (fire inside) and from outside to inside (fire outside),
120/90/60/30 - time during which the criteria E, I, and S are met, expressed in minutes.

Description

KTQ-O fire dampers with an electric actuator with spring return consist of a housing of a round cross-section, a moving, single-axis isolating blade, an actuating mechanism with a release device and a mounting collar.

The damper housing and its interacting elements are made of galvanised steel sheet. Both ends of the housing are adapted for male connection, allowing easy connection between the ducts and the damper.

There are intumescent seals on the inner surface of the housing, in the place of perforation, around the closed isolating blade. Their characteristic feature is that their volume increases at high temperatures, tightly filling all leaks between the baffle and the body.

Around the housing, there is a rectangular collar made of calcium-silicate board, which allows for quick mounting of the damper on the wall surface.

The isolating blade of the damper is made of calcium-silicate board, and a rubber seal is installed on its perimeter, ensuring the damper integrity at ambient temperature.

The KTQ-O damper is provided with an electric actuator with spring return of the BFL series manufactured by BELIMO, and the BAT thermal triggers (72°C), constituting the damper's drive system supplied by the 230 V AC or 24 V AC/DC voltage. After the voltage has been supplied, the actuator rotates the blade to the open position. The blade closes due to voltage loss or when the thermal trigger is activated (the return spring in the actuator closes the blade by returning to the non-stressed position).

During normal operation of the system, the KTQ-O dampers are in the open position. If a fire breaks out, the damper blade rotates to the closed position.

The permissible flow rate in a connection duct for the KTQ-O dampers with an actuator is 12 m/s.

Manufacturing versions

The range of dampers covers diameters from DN100 to DN315. The primary type series includes the following sizes: DN100, DN125, DN150, DN160, DN200, DN250, DN300, DN315.

KTQ-O fire dampers are designed for male connection optionally equipped with a gasket. The length of the KTQ-O dampers is 165 mm.

In a special version, resistant to aggressive environments, for the painted version (SL), the damper body is powder-coated in a selected RAL color, and the damper blade is impregnated with a fire-resistant board impregnation, and smaller steel components including connecting elements are made of stainless steel.

Dimensions

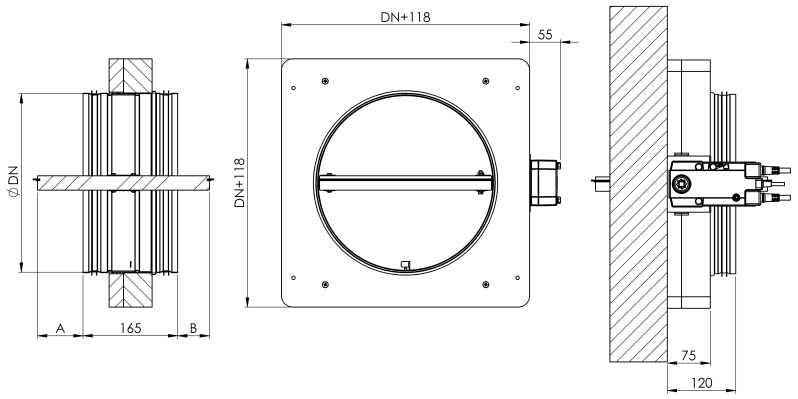


Figure 1. Dimensions of KTQ-O fire dampers

Table 1. Dimension of the partition outside the housing

DN [mm]	KTQ-O	
	A [mm]	B [mm]
100	-	-
125	-	-
150	-	-
160	-	2
200	-	22
250	23	47
300	48	72
315	56	80

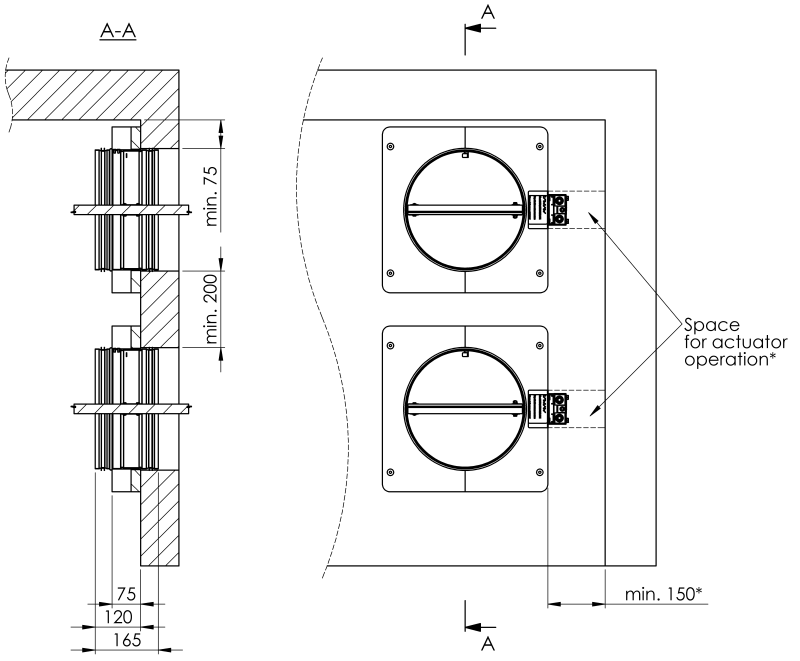
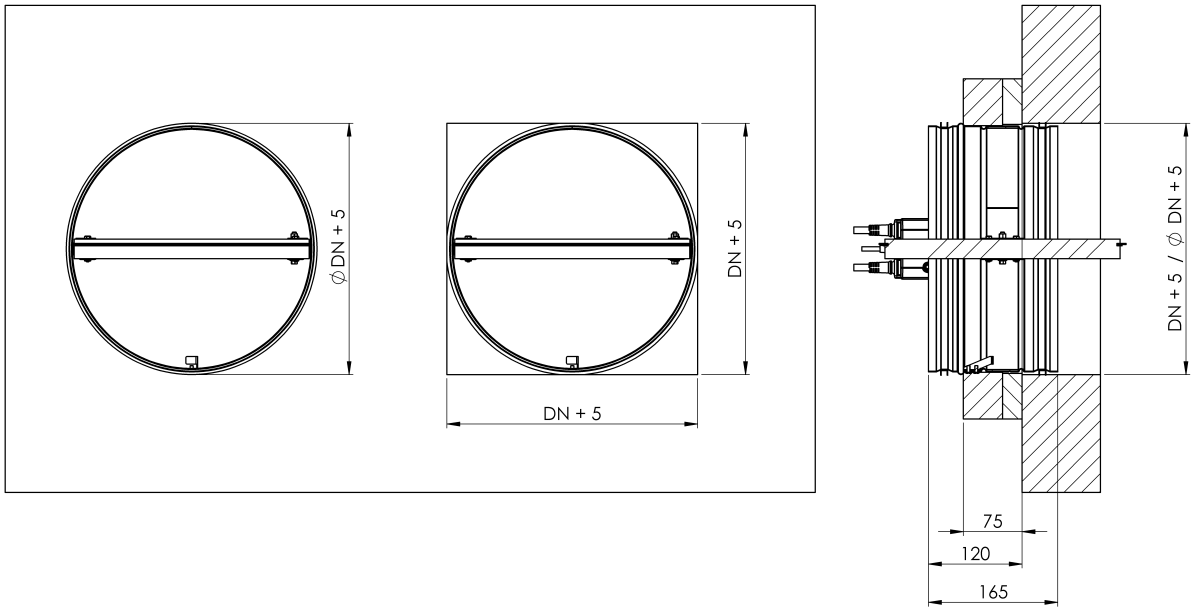


Figure 2. Spacing required between the dampers.

The damper can be installed with a horizontal or vertical axis of rotation, with the actuator positioned in any orientation.

The thermal trigger must be mounted on the duct surface after installing the damper.

Installation



3. Opening dimensions

Technical data

Table 2. Net area and range of actuators used for KTQ-O fire damper

KTQ-O	
DN [mm]	**A [m^2]**
100	0,005
125	0,009
150	0,014
160	0,016
200	0,026
250	0,043
300	0,063
315	0,070

0,12 - **BFL actuator**

Table 3. Sound power level emitted by the KTQ-O damper to the duct, L_{WA} [dB(A)].

KTQ-O		Air velocity in the connection duct, v [m/s]				
		2	**4**	**6**	**8**	**10**
diameter DN [mm]	**100**	19	29	39	47	53
	125	18	29	39	45	51
	150	19	28	35	43	50
	160	19	28	34	42	49
	200	19	27	36	45	48
	250	18	27	36	43	47
	300	18	26	32	37	40
	315	18	26	31	35	38

Table 4. Pressure drop on KTQ-O damper, Δp [Pa].

KTQ-O		Air velocity in the connection duct, v [m/s]				
		2	**4**	**6**	**8**	**10**
diameter DN [mm]	**100**	3	11	25	45	70
	125	2	7	15	27	42
	150	1	6	12	20	31
	160	1	4	10	17	27
	200	<1	2	4	7	11
	250	<1	2	4	6	10
	300	<1	1	3	4	6
	315	<1	1	2	3	5

Table 5. Weight of KTQ-O fire dampers [kg]

DN [mm]	KTQ-O
	[kg]
100	3,3
125	3,8
150	4,3
160	4,6
200	5,5
250	6,8
300	8,3
315	8,7

Description of the product for projects

Product: fire damper type KTQ-O, manufacturer: Smay

The fire damper type KTQ-O is designed for use in general ventilation systems in places where ventilation systems pass through building partitions with a specified fire resistance. Its function is to prevent the spread of fire and smoke through ventilation systems by maintaining the criteria of fire tightness and/or fire insulation and/or smoke tightness.

The fire damper type KTQ-O has a fire resistance class EI120(ve i↔o)S. It can be installed in rigid walls or flexible walls.

The fire damper type KTQ-O is CE marked and is placed on the market based on the Certificate of Constancy of Performance No. 2434-CPR-0382, issued by the Maritime Advanced Research Centre for compliance with the PN-EN 15650 harmonized standard. The declared fire resistance parameters of the damper are determined during fire tests performed according to the PN-EN 1366-2 standard.

The fire damper type KTQ-O has a number of key features such as:
- fire resistance EI120(ve i<->o)S for installation in a rigid or flexible wall from 100mm thick,
- possibility of installation in round or square opening, without any filling or closing of the installation gap,
- quick installation carried out only from one side of the building partition, without mortar, mineral wool or plasterboards,
- no installation seasoning period,
- possibility of installation with a ready installation adjacent to the building partition from the opposite side (e.g. in shaft walls),
- possibility of mounting the actuator and, independently of it, the damper release in any orientation relative to each other and the installation (top / bottom / left / right)

KTQ-O - Round fire damper

When ordering, please provide information according to the following pattern:

KTQ-O- <F> - <D> - <S> - <UP> - <P> - <RAL>

Where:

F	type of the actuation system used	
	E - electric spring return actuator	
D	nominal diameter [mm]	
	100 ; 125 ; 150 ; 160 ; 200 ; 250 ; 300 ; 315	
S	type of actuator used	
	BFL- for DN ≥ 100 mm	**Product marking:** **24/230** – supply voltage **T** – thermoelectric tripping device **ST** – connection socket
UP	seals on connections*	
	none - no seals	
	UP - with seals	
P	finishing*	
	none - galvanized steel + fireproof panels	
	SL - coated steel + impregnated fireproof panels	
RAL	colour as per RAL code (for SL finishing)*	

*optional items – if not indicated, default values will be used

Sample product marking: **KTQ-O-E-125-BFL24-T-UP-SL-RAL9005**