BSKC6-VAP

Circular fire damper and Constant pressure damper

FIRE SAFETY

02/02/2022

BEVENT RASCH

AIR SOLUTIONS – FOR A BETTER TOMORROW

www.bevent-rasch.com

Shown with RCTU / MRB3 fitted.

Quick facts

- Fire resistance class EI60/EI60S
- Sizes from 100 mm to 630 mm
- Prefitted safety actuator 24V
- Easy constant pressure
- Low weight
- Easy installation
- Available in MagiCAD
- CE-marked building product according to 15650:2010

Two dampers in one!

Bevent Rasch has developed a fire damper in fire resistance class EI60 / EI60S which is also used for constant pressure retention in all types of ventilation plants whilst providing full protection against the spread of smoke.

Use

Dampers in combination with walls or joists for fire-sectioning of heating, ventilation and air conditioning installations in buildings. In accordance with the harmonised European Standard EN 15650:2010. Smoke spread is prevented when the damper system design in accordance with the associated documentation, assembly and fitting instructions is used in combination with smoke detectors and the MRB (or equivalent) monitoring system. No further measures against the spread of smoke are required.
As the damper also functions as a constant pressure retention damper, both these functions are combined in the same damper. This saves both time, space and money for installations in, for example, hotels, office and shopping complexes, where both these functions need to be solved.

Performance

EC certificate according to EN 15650:2010
402-CPD-SC0900-13

Classification of fire resistance according to EN 13501-3
EI60 (ve ho i <–> o) S

For complete classification, see the Declaration of Performance.

Mounting

BSKC6-VAP is mounted on the bushing of building parts in accordance with the associated mounting instructions. If mounted as a final device, the damper must be fitted with steel meshing.

Design

BSKC6-VAP is supplied complete with a factory mounted, maintenance-free, 24 V electric safety actuator with thermal sensor featuring built-in signal contacts to indicate the damper position. The actuator is Belimo's specific VAV motor for stable and safe regulation. BSKC6-VAP is supplied prepared for possible overinsulation of 50 mm. BSKC6-VAP is supplied calibrated from the factory. Nominal pressure is 100 Pa or 300 Pa depending on the pressure sensor's range of measurement. Desired reference values are set using the regulator's potentiometer between 30-100% of nominal pressure. The reference value can be remotely set with a 2-10V signal from the DUC, for example. The device can be force-controlled to different operational requirements. In case of of a power failure, the damper closes with actuator spring return.

Activation

The BBR regulations state a requirement for smoke detectors verified in accordance with SS-EN 54-7 for activation of dampers. The obligatory thermal sensor closes the damper at 72°C in accordance with ISO 10294-4.

Control and monitoring

When the damper is used to prevent the spread of fire and smoke it must be closed via impulses from the smoke detector or thermal sensor. This must be fitted in the ventilation duct near the damper or in another suitable location. Smoke detectors are monitored by means of the Bevent Rasch MRB system or the like. The MRB monitoring system also performs automatic function tests on the damper every 48 hours and is designed so that faults are indicated immediately and the damper closes. For further information refer to the technical section on the website.

The following Bevent Rasch monitoring units can be used:

- MRB3 with RCTC/RCTU

Size

Ø100 – 630 mm.

Design

BSKC6-VAP is supplied calibrated from the factory. Nominal pressure is 100 Pa, or 300 Pa depending on the measurement range of the pressure sensor. Desired reference values are set using the regulator's potentiometer between 30-100% of nominal pressure. The reference value can also be remotely set with a 2-10V signal from the DUC, for example. The device can be force-controlled to different operational requirements.

Material and surface finish

Casing and components of galvanized steel sheet according to environmental class C3. Fabric seals. EPDM spiral duct connections. Blade and casing of solid fire protection materials.

Miscellaneous

All data presented are for dampers in standard versions. This type of damper shall not be confused with a Pressure Relief Damper, which has the opposite function.

Specification

Example:

Fire damper **BSKC6-VAP - 250 - 1 - 0 - 3**

Size
Nom. diameter Ød, mm

Material
Galvanized sheet steel = 1
Stainless AISI 316L – EN 1.4404 = 3

MRB-unit
Without MRB unit = 0
With MRB unit fitted (RCTU) = 5

Pressure sensor
30-100 Pa = 1
90-300 Pa = 3

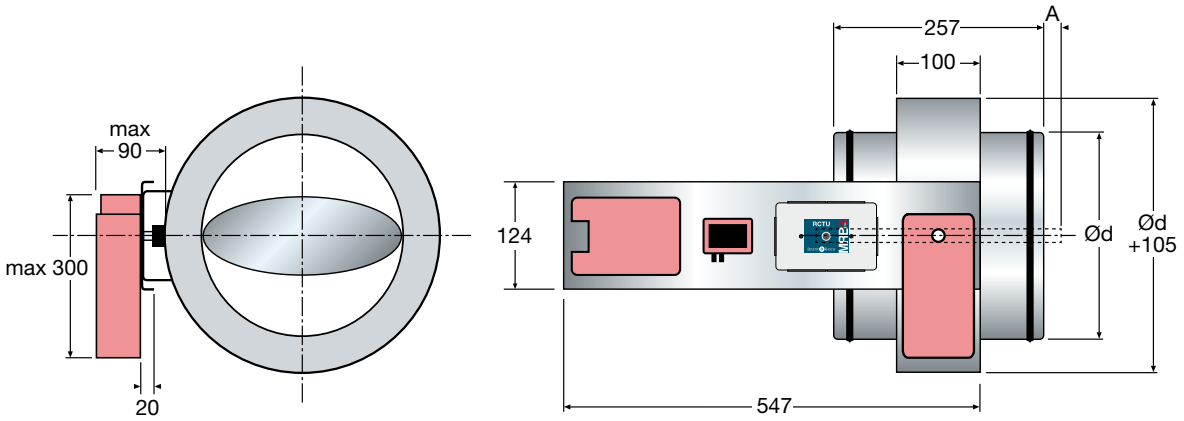
Note Factory-fitted actuator device is always included.

Accessories

RCKD/-RD	Smoke detectors
BRRM/BRMR	Measuring unit
RCTU	Damper module for the MRB3 system

Dimensions and weight

The illustration shows RCTU / MRB3 fitted.



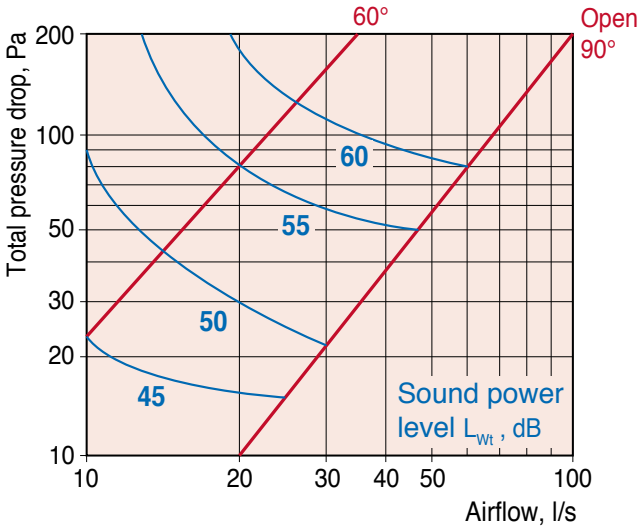
Size Ød	100	125	160	200	250	315	400	500	630
A	–	–	–	–	–	35	75	125	190
Weight, incl, actuator, kg	3,4	3,7	4,3	5,0	6,0	7,2	10,6	13,0	17,0

Electrical data

	BSKC6-VAP	VRP-STP
Sizing, max	10 VA - BF24-V	2,6 VA
Running time;		
– motor opening	120-300 s	
– spring return, max	approx. 20 s	
Protection class	IP 54	
Power supply	24V~ ±20%, 50/60 Hz	
- Control signal Y		DC 2-10 V DC 0-10 V (option)
- Measuring signal U		DC 2-10 V DC 0-10 V (option)
0-100% U nom		
Ambient temperature		0° to +50°C
End position contacts:		
- load ≤ 300 mW	min 1 mA/5V=, max 100 mA/250V~	
Applicable after exceeding the above values:		
- load > 300 mW	min 100 mA, max 3 A/250~	
Sound level		
- when opening	approx. 45 dB(A)	
- with spring return	approx. 62 dB(A)	

Size chart

Size - 100



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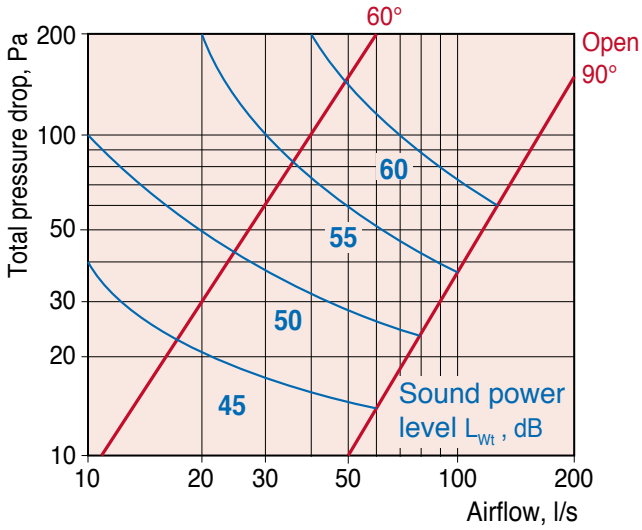

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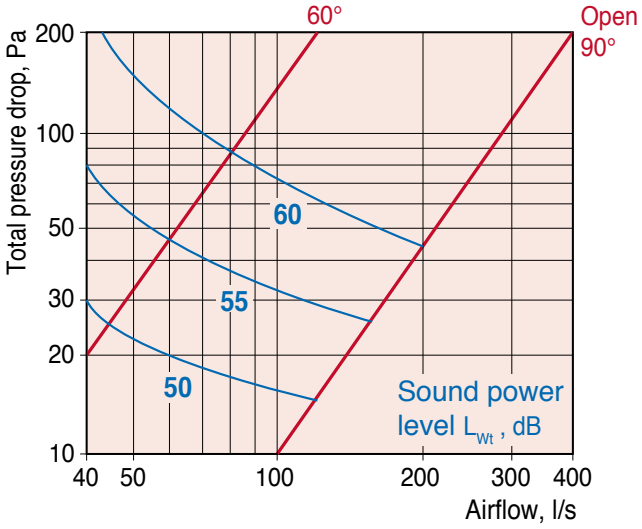

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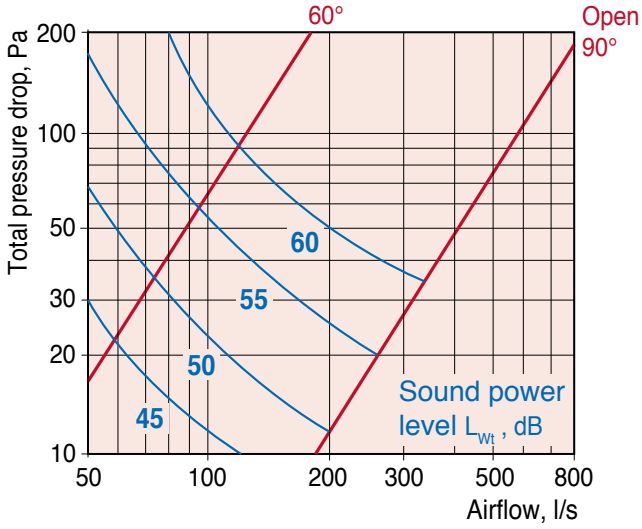

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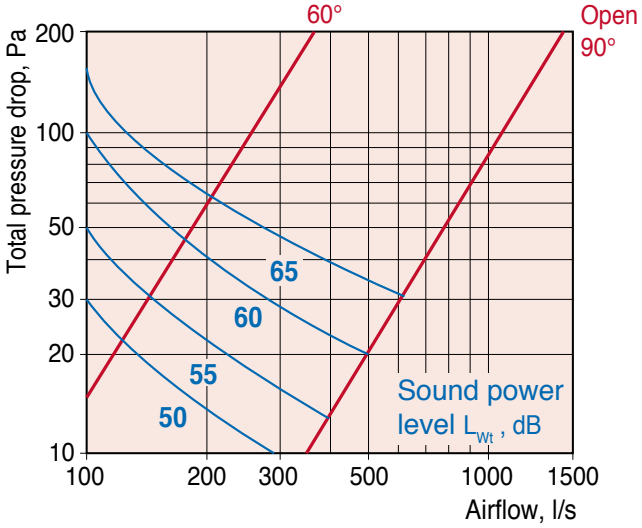

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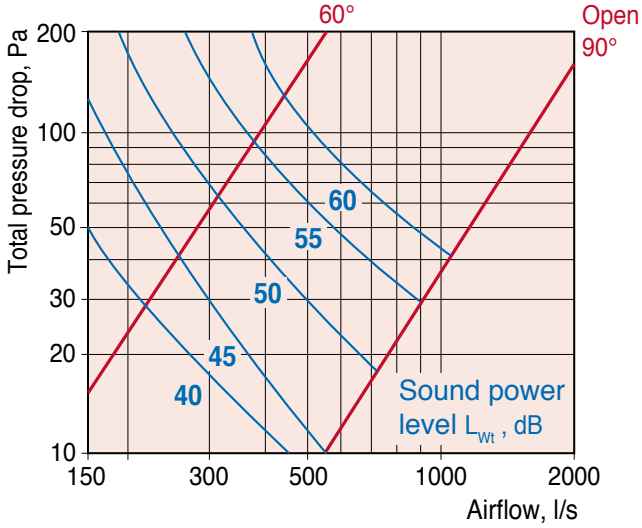
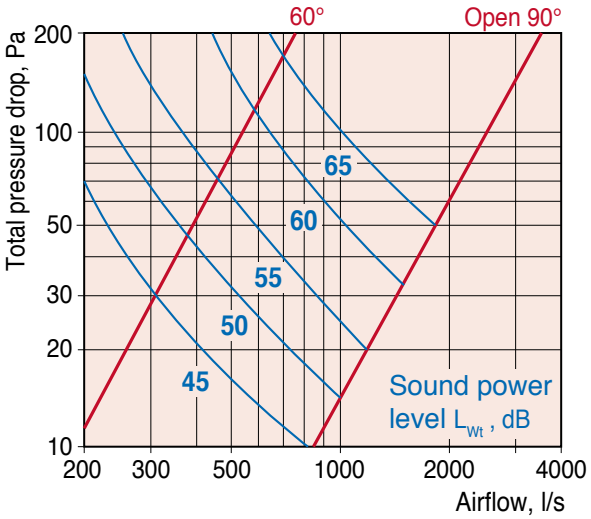


Size chart

Size - 400



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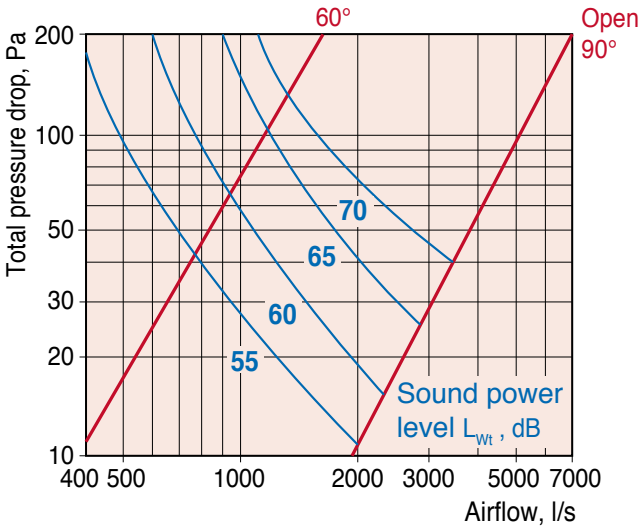
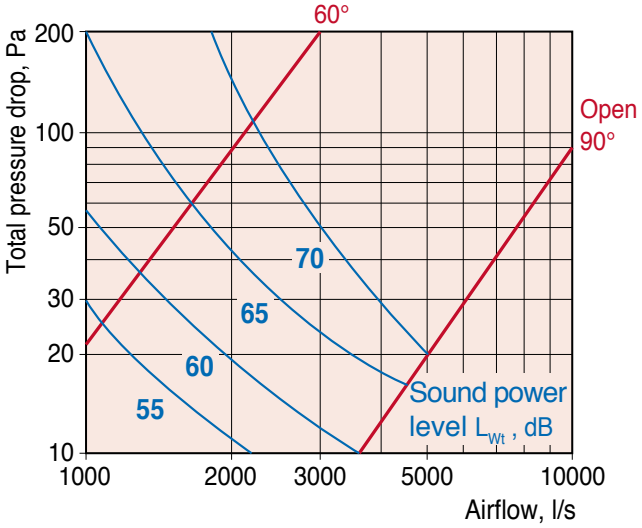


Size - 630



Sound data

Correction of sound power level, L_{Wok}, in octave band

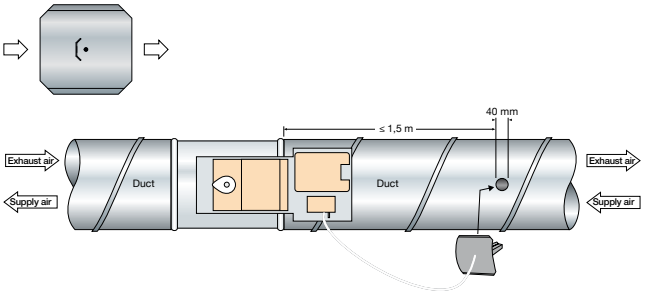
$L_{wok} = L_{Lwt} + K_{ok}$

Correction, K_{ok}

Size Ø mm	Centre Frequency Hz							
	63	125	250	500	1000	2000	4000	8000
100	-4	-6	-7	-12	-17	-24	-26	-33
125	-5	-5	-8	-14	-22	-25	-27	-35
160	-5	-4	-8	-13	-17	-20	-28	-34
200	-3	-6	-10	-14	-15	-19	-27	-40
250	-1	-11	-15	-20	-22	-23	-29	-37
315	-2	-8	-11	-12	-13	-19	-23	-29
400	-2	-8	-14	-12	-15	-22	-30	-41
500	-2	-8	-13	-13	-15	-21	-28	-36
630	0	-15	-23	-23	-28	-35	-41	-48
Tol. ± dB	2	3	4	4	6	7	9	9

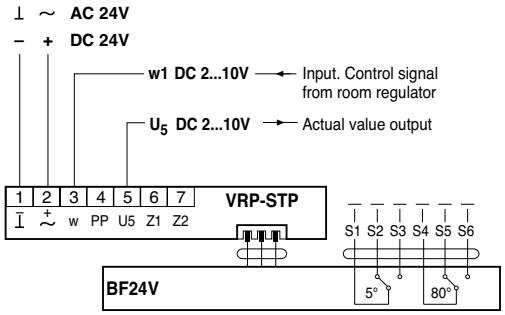
Installation

The pressure sensor should be mounted in a representative position in the duct downstream of the damper with the arrow in the direction of the air flow. The measuring hose must be fixed in the duct and in the static pressure sensor on the damper. If the damper is placed in the exhaust air duct the measuring tube shall be moved to the minus spigot on the static pressure sensor. The pressure sensor is calibrated and mounted in a vertical position. When mounting in another position, post-adjustment on-site is possible.

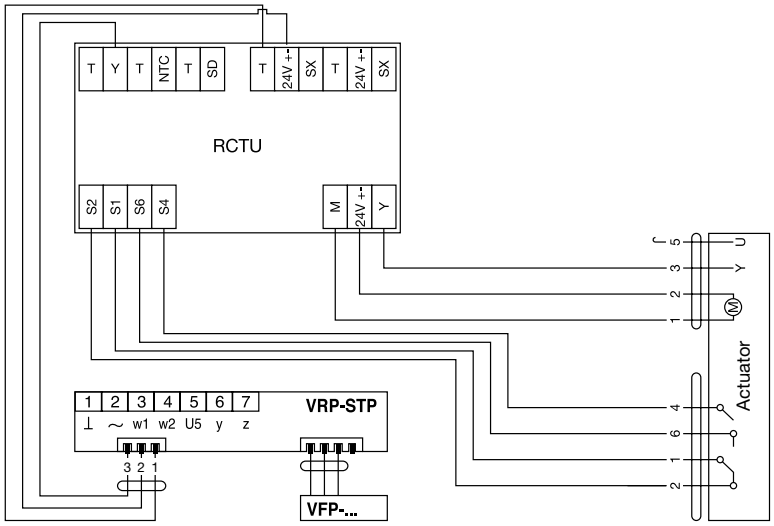


Wiring diagram

Option 1 – Connection to master system



Option 2 – Connection to RCTU



Caution!
When connecting several VAV-devices to the same transformer, it is important that all system phases are connected to (~) and all system neutrals are connected to (⊥,

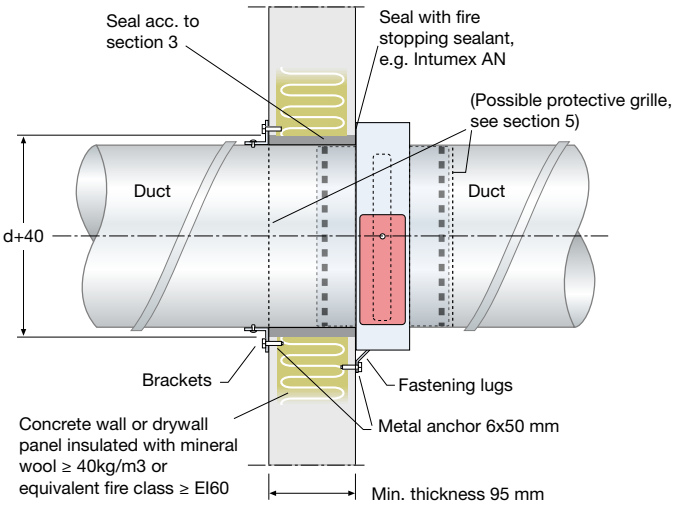
In case of alarm and function tests, the 24V supply must be disconnected!

Installation instruction

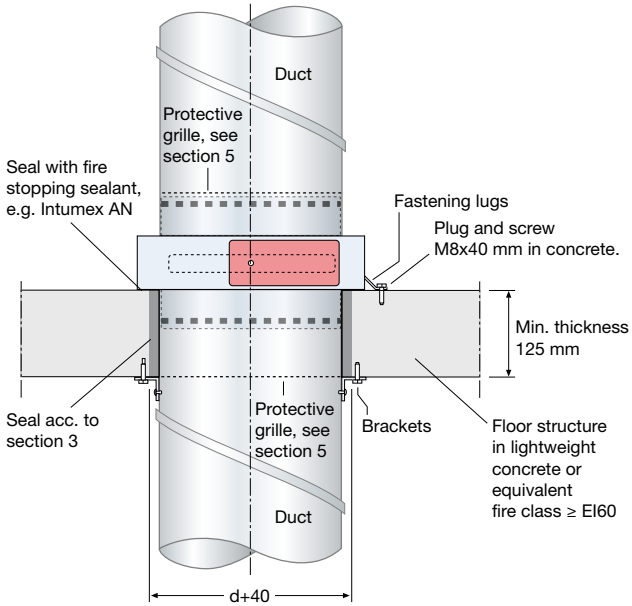
Supporting construction (wall or floor) in fire resistance class EI60.
Damper's fire resistance class: EI60 (ve ho i <-> o) S.
EC certificate 0402-CPD-SC0900-13

CE

Option 1



Option 2



Options 1 and 2

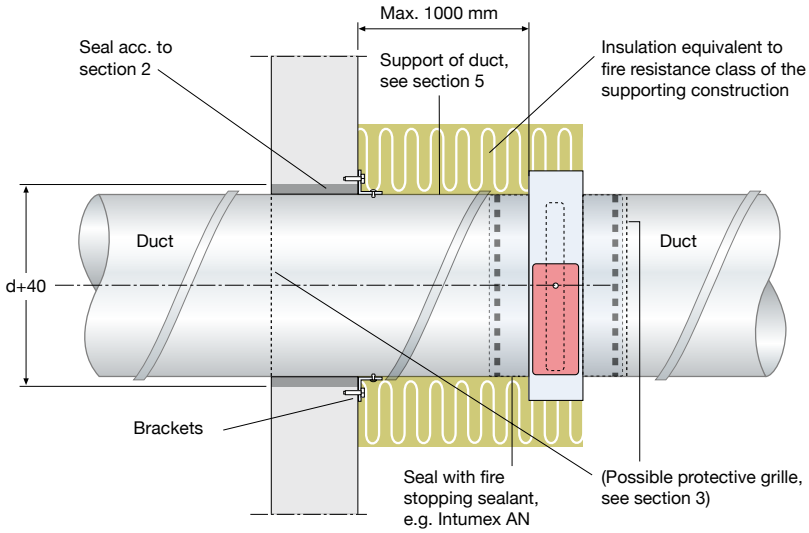
1. Install and join the damper in the ventilation duct that ends at the wall or floor face (after the lead-through).
2. The damper is secured flat and tight using fire stopping sealant (Intumex AN) against the wall/floor structure with the fastening lugs, which are opened out.
3. Sealing is carried out by caulking with mineral wool, min 40 kg/m^3.
4. Use brackets to fasten the duct to the wall.
5. If fire damper is not connected to the duct system, fit non-combustible grilles designed for the damper on the unconnected sides. The minimum distance between the damper blade in the open position and the grille is 50 mm.
6. Install the thermal sensor with the sensor body in the air flow without obstructing the movement of the damper blade.
7. Install the duct system according to applicable requirements.

- *Minimum distance between dampers must be 200 mm.*
- *Minimum distance to joist structure/wall must be 75 mm.*

Installation instruction

Installation in horizontal duct.
Damper's fire resistance class: EI60 (ve i <–> o) S.
EC certificate 0402-CPD-SC0900-13

CE



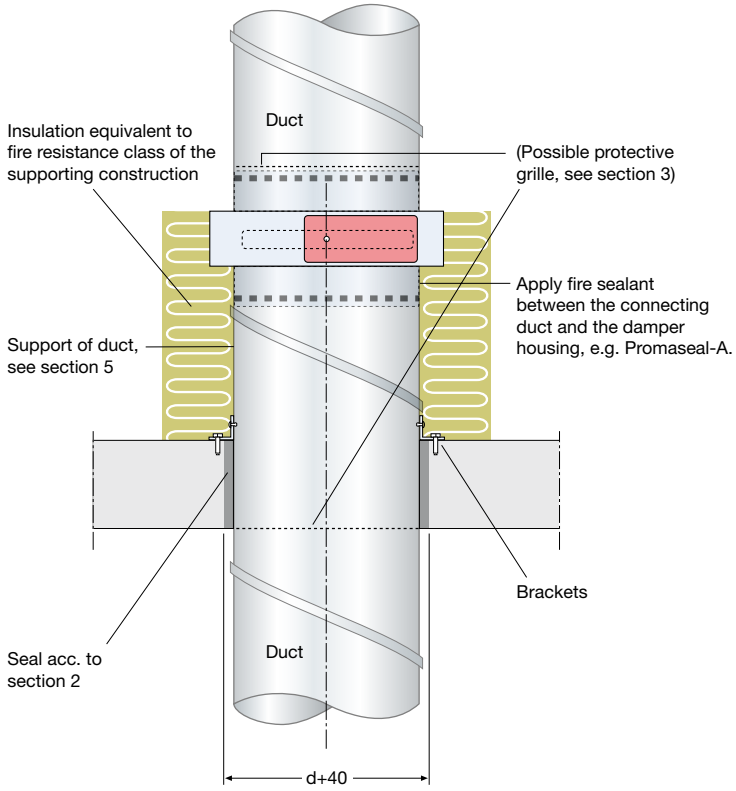
1. Install the damper in the duct.
2. Duct going through supporting construction, is fastened using brackets. Seal according to applicable requirements, such as caulking with mineral wool, min 40 kg/m^3 and fire stopping sealant.
3. If fire damper is not connected to the duct system, fit non-combustible grilles designed for the damper on the unconnected sides. The minimum distance between the damper blade in the open position and the grille is 50 mm.
4. Install the thermal sensor with the sensor body in the air flow without obstructing the movement of the damper blade.
5. Duct is fastened/supported according to applicable requirements.
6. Insulate the duct according to applicable requirements using instructions from the insulation supplier, min. 80 mm and 55 kg/m^3. Note that insulation must cover the damper.

- *Minimum distance between dampers must be 200 mm.*
- *Minimum distance to joist structure/wall must be 75 mm.*
- *The damper spindle may be installed in any position.*

Installation instruction

Installation in vertical duct.
Damper's fire resistance class: EI60 (ve i <–> o) S.
EC certificate 0402-CPD-SC0900-13

CE



1. Install the damper in the duct.
2. Duct going through supporting construction, is fastened using brackets. Seal according to applicable requirements, such as caulking with mineral wool, min 40 kg/m^3 and fire stopping sealant.
3. If fire damper is not connected to the duct system, fit non-combustible grilles designed for the damper on the unconnected sides. The minimum distance between the damper blade in the open position and the grille is 50 mm.
4. Install the thermal sensor with the sensor body in the air flow without obstructing the movement of the damper blade.
5. Duct is fastened/supported according to applicable requirements.
6. Insulate the duct according to applicable requirements using instructions from the insulation supplier, min. 80 mm and 55 kg/m^3. Note that insulation must cover the damper.

- *Minimum distance between dampers must be 200 mm.*
- *Minimum distance to joist structure/wall must be 75 mm.*
- *The damper spindle may be installed in a tilted duct or supporting construction.*

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