

BSKC6R

Circular regulating fire damper



FIRE SAFETY



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www.bevent-rasch.com



BEVENT RASCH

AIR SOLUTIONS – FOR A BETTER TOMORROW



Quick facts

- Fire resistance class EI60/EI60S
- Sizes from 100 mm to 630 mm
- Prefitted safety actuator 24V or 230V
- Easy flow regulation
- Low weight
- Easy installation
- Available in MagiCAD
- CE-marked building product according to 15650:2010

Two dampers and actuator in one!

Bevent Rasch has developed a fire damper, fire class EI60/EI60S with regulating actuator. This means it is possible to regulate the air flow from 0-100% with a control signal 2-10V, use it as an adjustment damper or boosting damper while providing complete protection against the spread of combustion gases.

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.

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.



Installation

Regulating fire dampers may be 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.

Actuator

BSKC6R is always supplied with an electric safety actuator with spring return complete with thermal sensor with push-button for local manual operating test. The sensor breaks the power supply to the actuator device if the temperature exceeds 72°C inside or outside the damper.

For dampers $\leq \text{Ø}400$ mm, the actuator type BFL24-SR-T is used and for larger dampers the actuator type BRS24-T. Both actuators have micro switch for closed and open damper. Control signal 0-10V. 24 V actuators are always used with the MRB monitoring system. Note that the BSKC6R damper is always supplied with an actuator. A fitted MRB-box is available as an accessory.



Activation

Smoke detectors must be verified according to SS-EN 54-7 to activate dampers. The mandatory thermal sensor closes the damper at 72 °C according to ISO 10294-4.

Control and monitoring

When the damper is used to prevent the spread of combustion gases it should be closed via impulses from a smoke detector or thermal sensor, mounted in the ventilation duct in the vicinity of the damper or in another appropriate position or from a fire alarm centre and is monitored by the Bevent Rasch MRB system or equivalent. The MRB monitoring system performs automatic function tests every 48 hours and is designed so that faults are indicated immediately. The RCRS control unit is used for the function tests. Other MRB panels cannot be used for this type of damper. A damper and smoke detectors can be connected to RCRS. In addition, there are inputs for control signal 2-10V, external forced closure from e.g. a fire alarm centre, external forced opening and external function tests. There are outputs for alarms and actual value signals. Settings for max-min flow can be made on RCRS. Detailed information about RCRS, see Monitoring system MRB. The Bevent Rasch MRB3 system can also be used.

Size

Ø100 – 630 mm.

Design

The regulating fire/combustion gas damper is supplied prepared for external insulation. The control signal can come from e.g. room controllers, air quality sensors, or other devices that give a 2-10V DC output signal. The actuator provides an actual value signal of 2-10V DC depending on the damper position. In the event of a power failure, the damper closes with the actuator's spring.

Material and surface finish

Casing and components of galvanized steel sheet according to environmental class C3. Fabric seals. EPDM spiral duct connections.

Miscellaneous

All data presented are for dampers in standard versions. When setting the max.-min. flows it is appropriate to use the measuring units type BRRM/BRMR.

Specification

Example:

Regulating fire damper **BSKC6R - 250 - 1 - 0**

Size

Nom. diameter Ød, mm

Material

Galvanized sheet steel

= 1

Stainless AISI 3041 – EN 1.4301

= 2

Stainless AISI 316L – EN 1.4404

= 3

MRB-unit

Without MRB unit

= 0

With MRB unit fitted (RCRS)

= 1

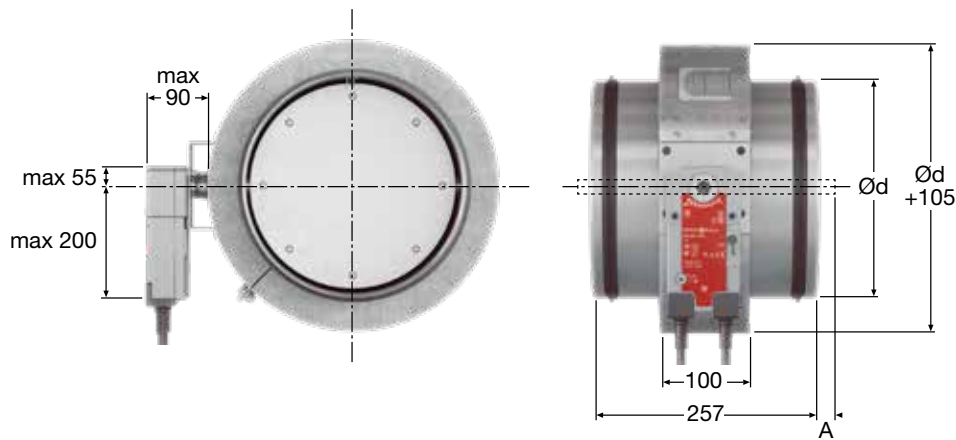
With MRB unit fitted (RCTU)

= 5

Note Factory-fitted actuator device is always included.

Accessories

RCRS	MRB system for 1 damper
RCKD/-RD	Smoke detectors
BRRM/BRMR	Measuring unit
RCTU	Damper module for the MRB3 system

**Dimensions and weight**

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

	Actuator type BRS...	BFL...
Sizing, max	10 VA	6,5 VA
Running time;		
- motor opening	150 s	60 s
- spring return, max	approx 20 s	20 s at -10 to +55°C 60 s at -30 to -10°C

Protection class IP 54

Power supply 24V~ ±20%, 50/60 Hz

- Control signal Y DC 0-10V @input resistance
100 kΩ(0,1 mA)

- Operating range DC 2-10V (control signal Y)

- Measuring signal U DC 2-10V @max. 0,5 mA
(for 0-100% opening angle)

Ambient temperature -30° to +50°C

Safety temperature..... -30° to +75°C
(24 hrs. guaranteed safety)

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)

Sound level when closing approx 62 dB(A)

Actuator - damper sizes

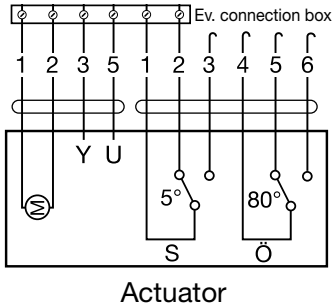
Actuator BFL24-SR-T is supplied to damper sizes Ø100-315 mm.

Actuator BRS24-T is supplied to damper sizes Ø400-630 mm.



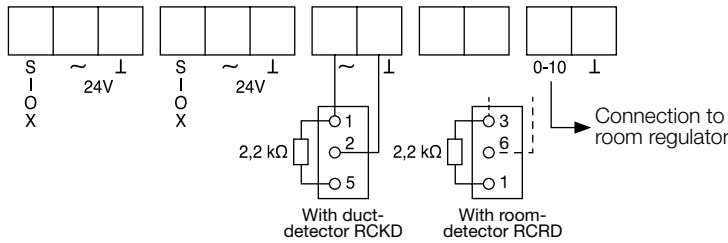
Wiring diagram

Option 1 – Connection to superior system

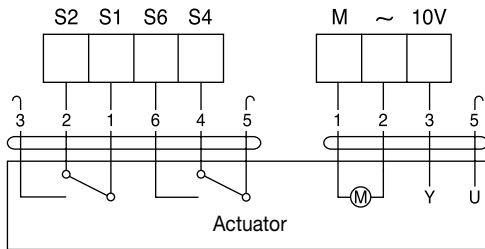


Actuator

Option 2 – Connection to RCTU

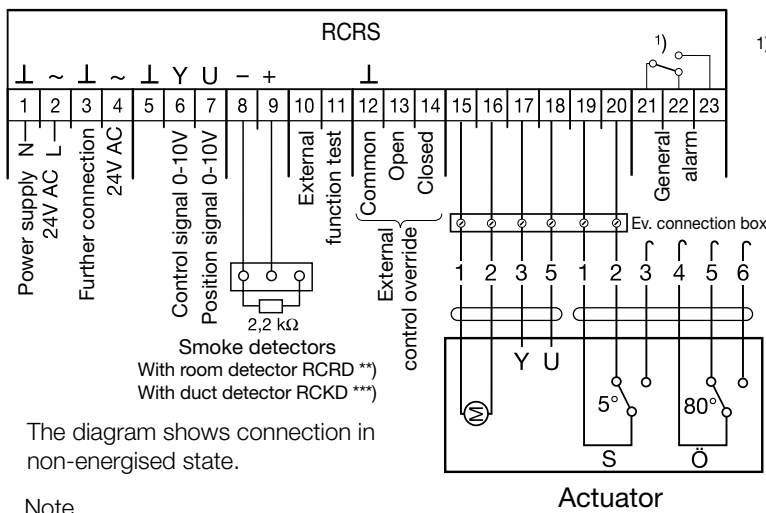


BF24-SR, BRS24, BFL24-SR



Actuator

Option 3 – Connection to RCRS

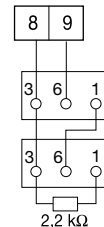


Actuator

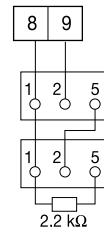
1) Potential-free contact max. 24V AC, 3A. Drawn in voltage-free/alarm mode.

*) Limit switch for Open position is only included on BRS24-actuators

**) With room detector RCRD connected in series



***) With duct detector RCKD connected in series



The diagram shows connection in non-energised state.

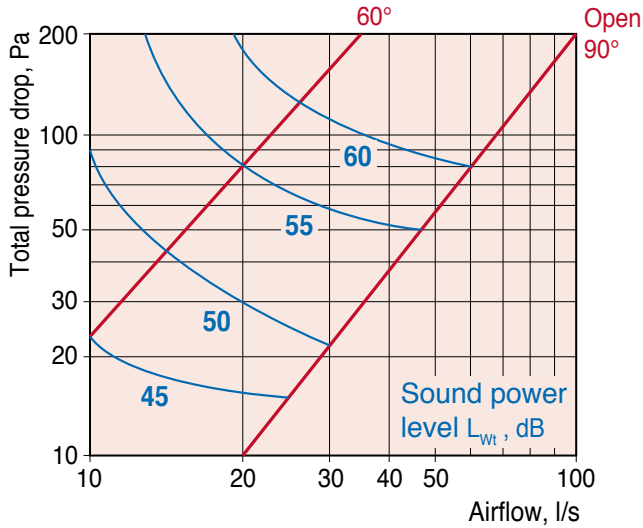
Note

- For 2 position operation: The damper assumes min-position when the control signal is 0V or broken and max-position when 10V in-signal or 24V AC direct on block 6.
- Measurement and control signal are connected to common system 0.

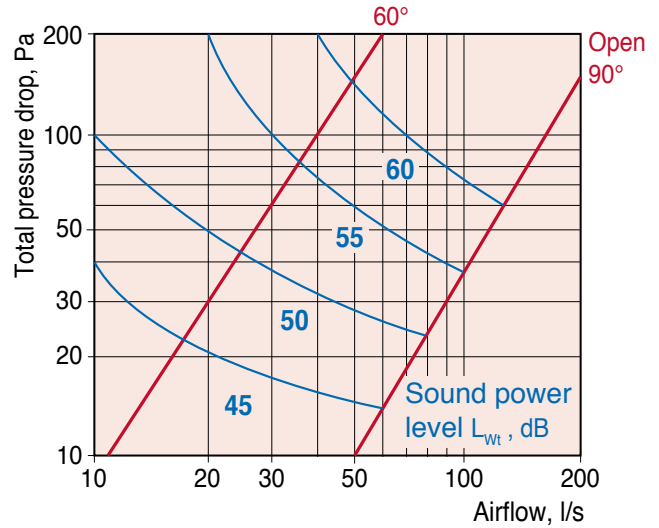


Size chart

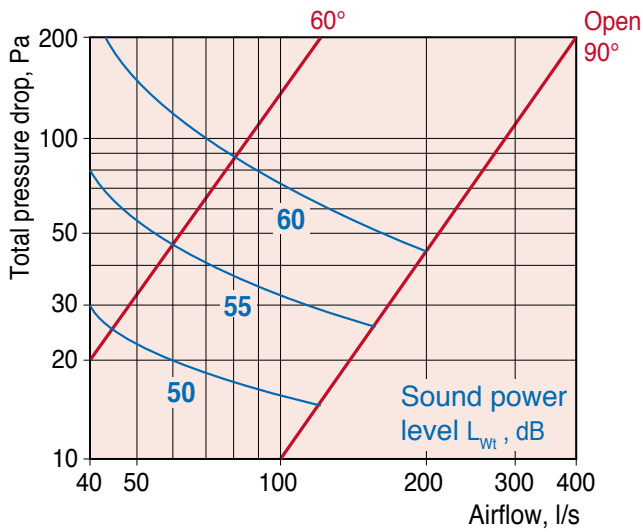
Size - 100



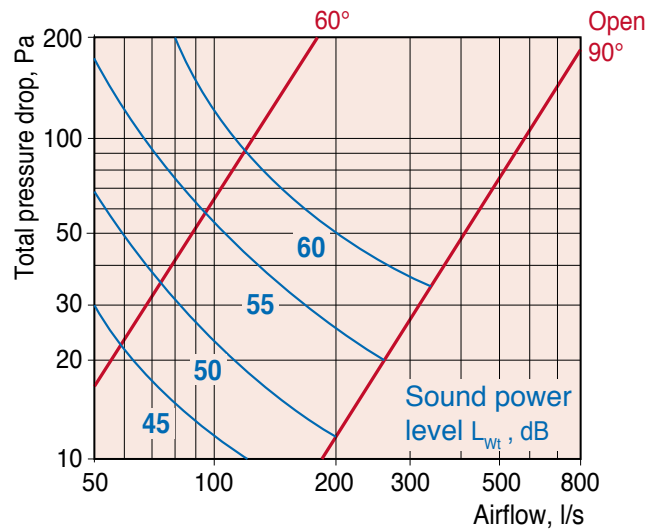
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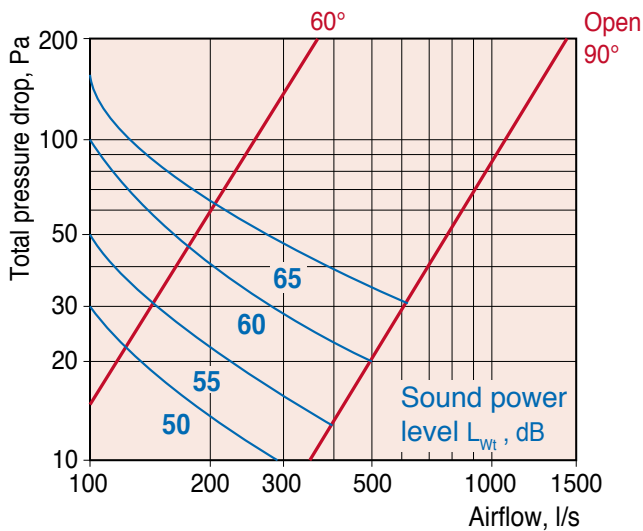
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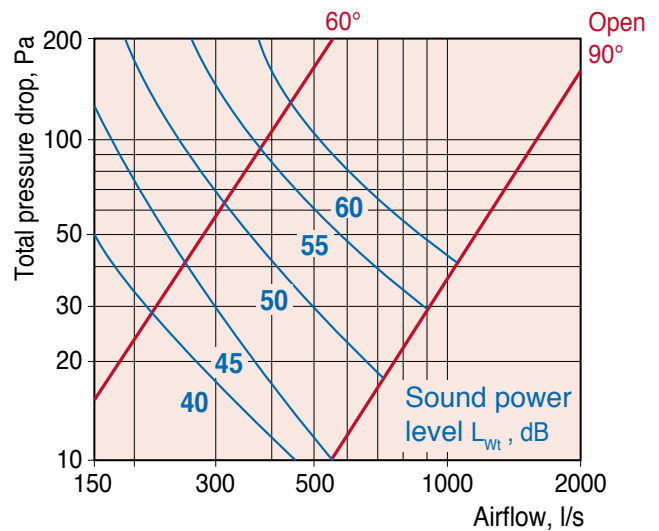
Size - 200



Size - 250



Size - 315





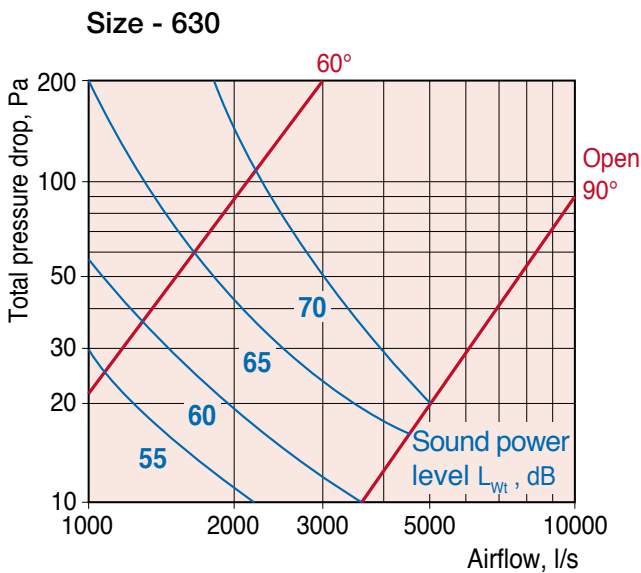
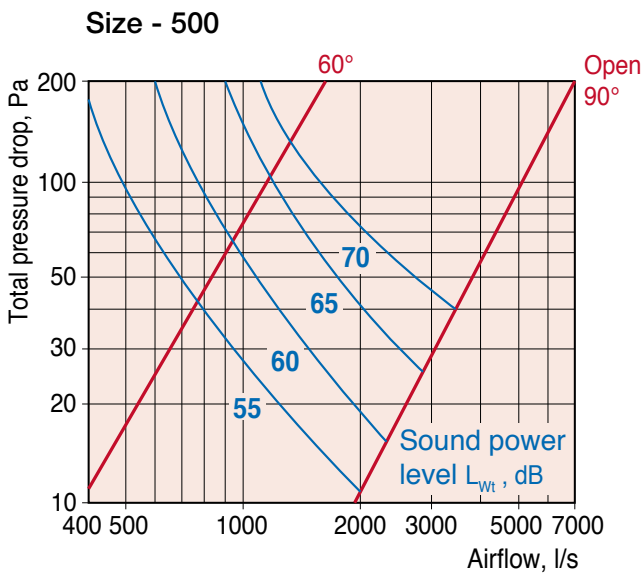
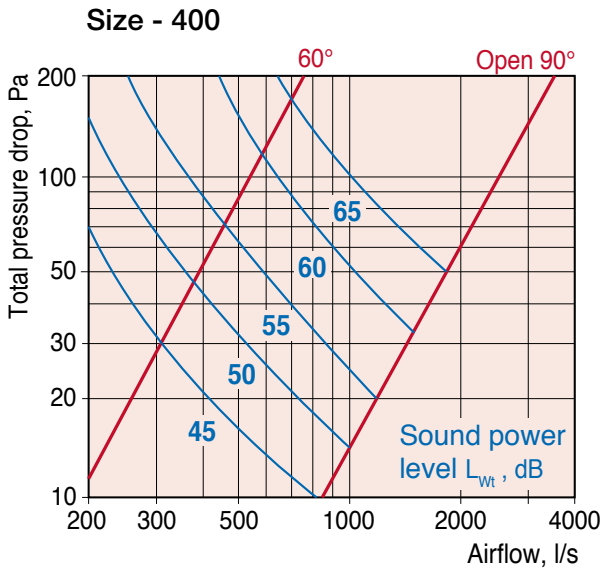
Sound data

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

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

Correction, K_{ok}

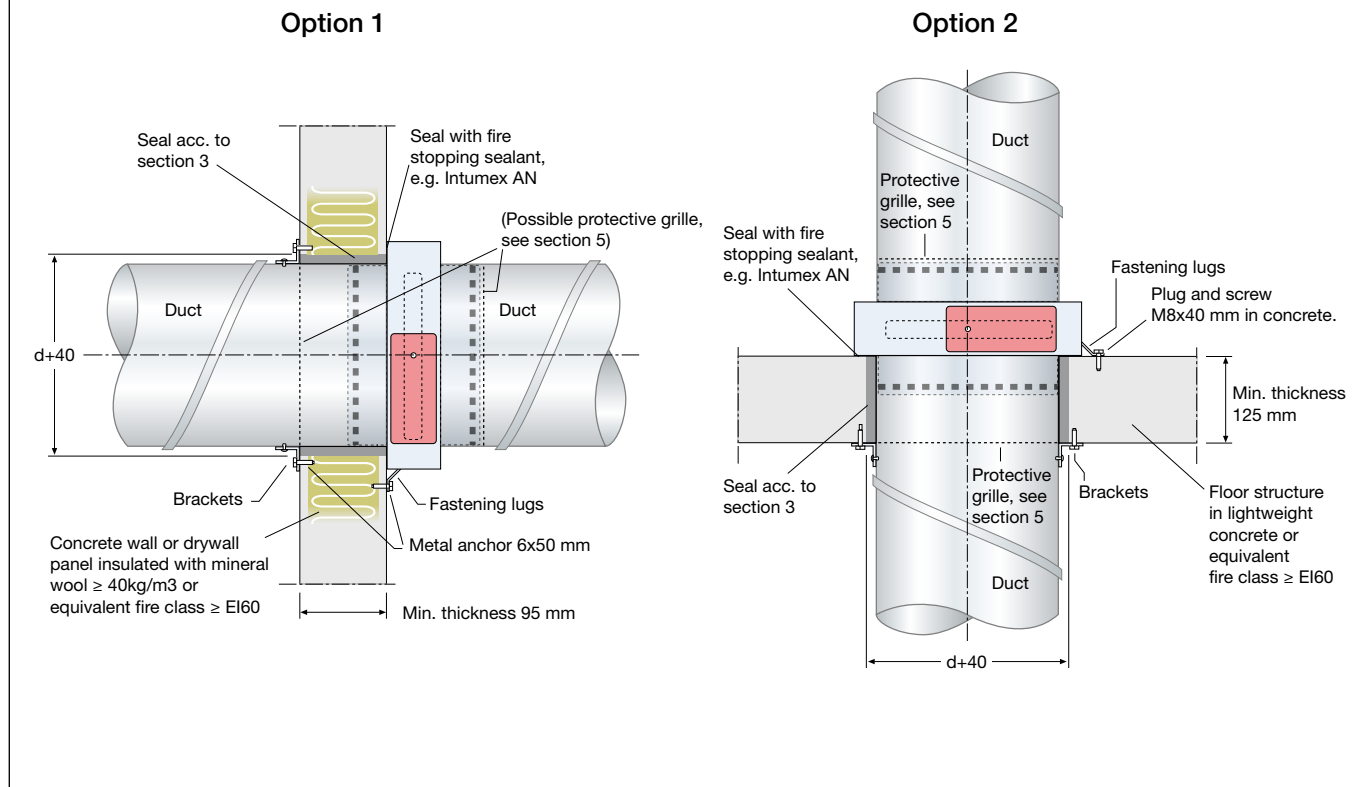
Size Ø mm	Centre Frequency Hz							
	63	125	250	500	1000	2000	4000	8000
100	-4	-6	-7	-12	-17	-24	-26	-33
125	-5	-5	-8	-14	-22	-25	-27	-35
160	-5	-4	-8	-13	-17	-20	-28	-34
200	-3	-6	-10	-14	-15	-19	-27	-40
250	-1	-11	-15	-20	-22	-23	-29	-37
315	-2	-8	-11	-12	-13	-19	-23	-29
400	-2	-8	-14	-12	-15	-22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



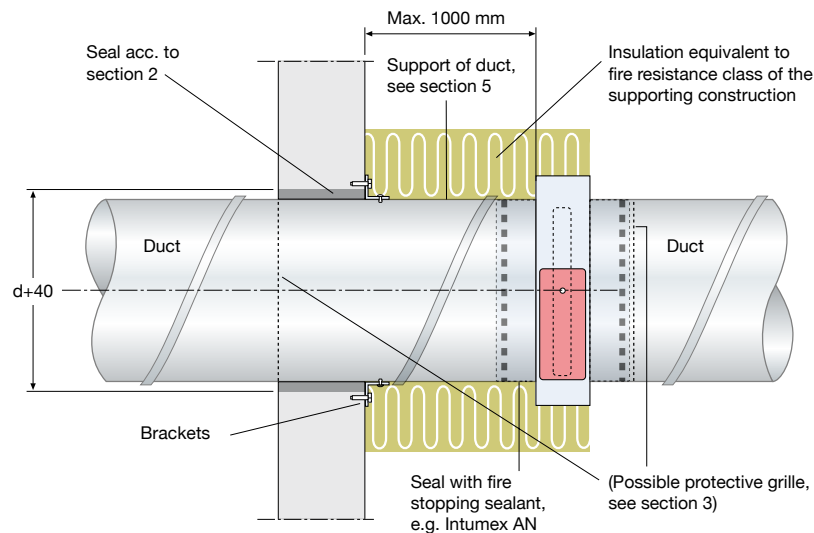
Options 1 and 2

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/m³.
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



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/m³ 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/m³. 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.*