

BSK6R

Rectangular regulating fire damper



FIRE SAFETY



CE

20/06/2024



Quick facts

- Fire resistance class EI60/EI60S
- Sizes from 200 x 200 mm to 800 x 800 mm
- Prefitted safety actuator 24V
- 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 FENIX, MRB3 and MRB (or equivalent) monitoring system. No further measures against the spread of smoke are required.

Performance

EC certificate according to EN 15650:2010

0402-CPR-SC1299-13

Classification of fire resistance according to EN 13501-3

EI60 (ve ho i <-> o) S

For complete classification, see the Declaration of Performance.



Installation

BSK6R is installed in fire cell separating walls or joist systems, according to the adjoining installation instructions. Should not be installed outdoors or in damp areas.

Actuator

BSK6R 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.

Note that BSK6R is always supplied with a 24V actuator.

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

Dampers for protection against the spread of fire and combustion gases shall be closed via impulses from a smoke detector. Smoke detectors are mounted in ventilation ducts or monitored spaces. Fire dampers, smoke detectors and ventilation units are connected to the FENIX, MRB3 or MRB control unit for complete ventilation fire protection. FENIX, MRB3 and MRB perform functional checks of the fire protection in accordance with current regulations.

See www.bevent-rasch.com for further details.

Size

Size from 200 x 200 mm to 800 x 800 mm, in increments of 50 mm.

Design

The BSK6R comes complete with an electrical safety actuator and thermal sensor. The actuator is maintenance-free and has integrated signal contacts for indication of the damper blade position. The standard version of the damper is supplied with a slip joint connection.

Material and surface finish

- Shell and details in hot-dip galvanized steel plate in accordance with environmental class C3.
- Blade sealing of fibre glass reinforced canvas.
- Blades and casing of calcium silicate.

Specification

Example:

Fire damper **BSK6R - 600 - 400 - 1 - 0**

Size

Width x Height (W x H), mm

Material

Galvanized sheet steel = 1

Stainless EN 1.4016 = 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

BRAS	Circular sleeve coupling for BSK6R
RCKB	Connection box
RCRS	MRB system for 1 damper
RCKD/-RD	Smoke detectors
RCTU/RCTC	MRB3 system, max 236 dampers
FENIX2	max 2st spjäll
FENIX4 / FENIX+	max 16st spjäll
BRRM/BRMR	Measuring unit

Installations options for BSK6R

Size	Fire class	Wall of drywall EI90 Group A, SS-EN1363-1	Solid wall	Joist system*
200 - 800 mm	EI60S	√	√	√

*125 mm lightweight concrete

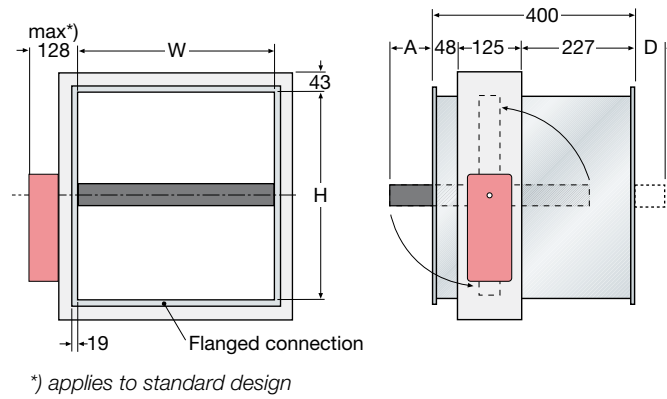
Product data for BSK6R

Size	Pressure class AMA VVS & Kyl 19	Casing tightness SS-EN1751	Tightness over damper blades SS-EN1751	2-position actuator On-Off	Regulating actuator 0°-90°	Actuator type
200 - 800 mm	B	B	2	√	√	Belimo BFN24-SR-T

Pressure class B:
2500Pa



Dimensions and weight



Dimensions, mm

H	A	D
200	0	0
250	25	0
300	50	0
350	75	0
400	100	0
450	125	0
500	150	0
550	175	0
600	200	20
650	225	45
700	250	70
750	275	95
800	300	120

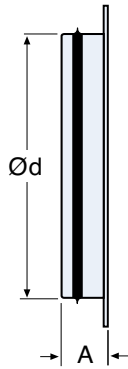
Weight incl. 24V actuator, kg

H	W												
	200	250	300	350	400	450	500	550	600	650	700	750	800
200	12	13	15	16	17	18	20	21	22	24	25	27	28
250	13	15	16	17	18	20	21	22	24	25	27	28	30
300	15	16	17	18	20	21	22	24	25	27	28	30	32
350	16	17	18	20	21	22	24	25	27	28	30	32	33
400	17	18	20	21	22	24	25	27	28	30	32	33	35
450	18	20	21	22	24	25	26	28	30	32	33	35	36
500	20	21	22	24	25	26	28	30	32	33	35	36	38
550	21	22	24	25	26	28	29	32	33	35	36	38	39
600	22	24	25	26	27	29	30	33	35	36	38	39	41
650	24	25	26	27	29	30	31	35	36	38	39	41	42
700	25	26	27	29	30	31	33	36	38	39	41	42	44
750	26	27	29	30	31	33	34	38	39	41	42	44	45
800	27	29	30	31	33	34	35	39	41	42	44	45	47

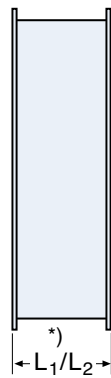


Installation

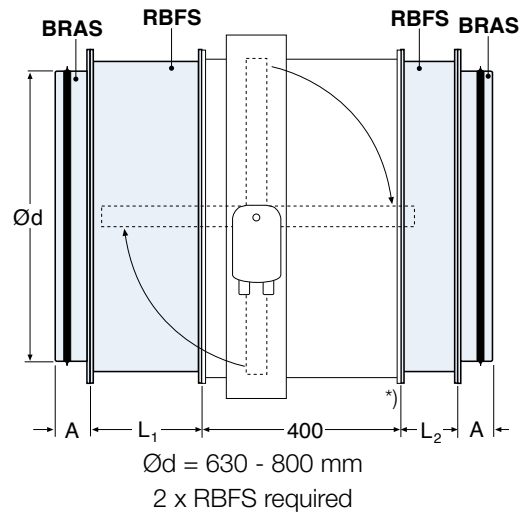
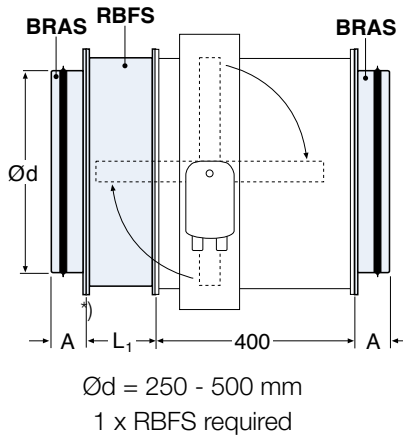
Connection spigot
BRAS



Extension spigot
RBFS



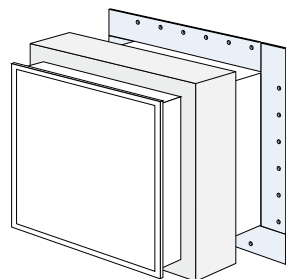
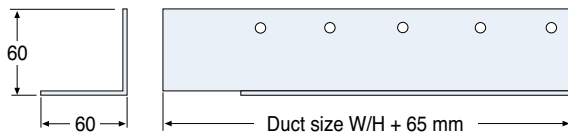
BRAS Ød	Min. damper size	A	RBFS	
			L ₁	L ₂
100	200 x 200	50	-	-
125	200 x 200	50	-	-
160	200 x 200	50	-	-
200	200 x 200	50	-	-
250	250 x 250	50	155	-
315	350 x 350	65	155	-
400	400 x 400	80	155	-
500	500 x 500	80	330	-
630	650 x 650	80	330	155
800	800 x 800	80	330	155



*) Length as per the table above

Note. For circular dampers first use the BSKC6 damper.

Assembly plate (incl. in delivery)



Supplied unassembled



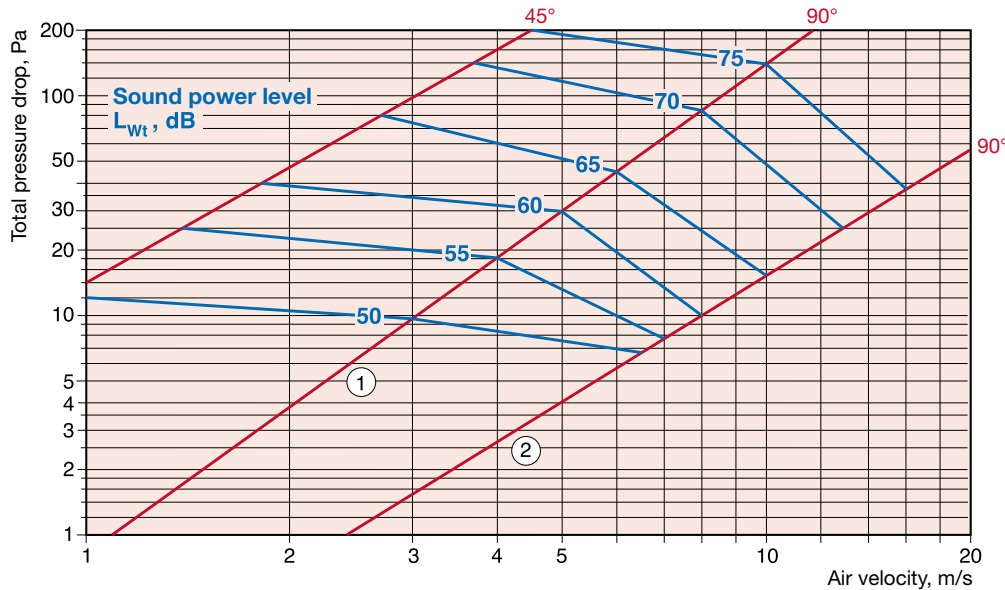
Technical data

Sound data

The speed is calculated on the damper's gross area, i.e. a BSK6R - 400 x 400 has a gross area of 0.16 m².

The specified pressure drop applies to the damper without accessories.

Due to the thickness of the damper blades, noise and pressure drop data differs in the smaller sizes compared to the larger when the damper is fully open. When damper blade is angled, the same pressure drop line is used for all sizes and the sound power level is corrected by damper area.



Valid for open damper

- ① Damper height H < 400 mm
- ② Damper height H ≥ 400 mm

Correction of sound power level, L_w, for different sizes use curves ① - ② according to: $L_w = L_{wt} + K_1$

Damper height mm	Damper area, m ²				
	-	0,08	0,16	-	-
200 as per ①	-	0,08	0,16	-	-
≥400 as per ②	0,08	0,16	0,32	0,64	1,28
K ₁	-3	0	3	6	9

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

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

Correction, K_{ok}

Opening angle	Centre frequency Hz							
	63	125	250	500	1000	2000	4000	8000
90°	-1	-11	-18	-23	-26	-28	-32	-38
Tol. ± dB	1	2	3	4	6	6	6	6

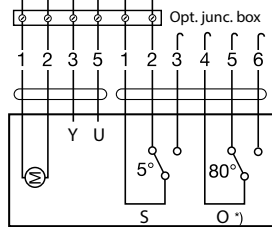
Electrical data

Actuator type	BFN24-SR-T
Sizing, max	8,5 VA
Running time. - motor opening, max; - spring return, max	60 s 20 s at -10 to +55°C < 60 s at -30 to -10°C
Protection class	IP 54 in all installation positions
Supply voltage	24V~ ±20%, 50/60Hz
Control signal Y	DC 0-10V
Working range	DC 2-10V
Position reversal U	DC 2-10V
Design	I _{max} 8,3A @ 5ms
Ambient temperature	-30° to +55°C
Thermal sensor tripping temperature	72°C
Mode contacts (Load)	1mA...3 (0,5 inductive) A, AC250V
Sound level when opening	< 55 dB (A)
Closing noise level	< 67 dB (A)
Maintenance	Maintenance free



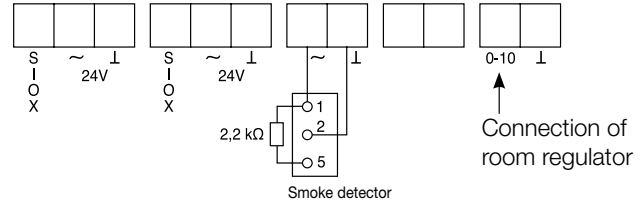
Wiring diagram

Option 1 – Connection to parent system

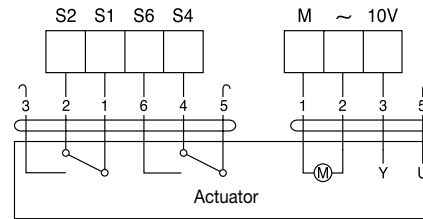


Actuator

Option 2 – Connection to RCTU



BF24-SR, BRS24

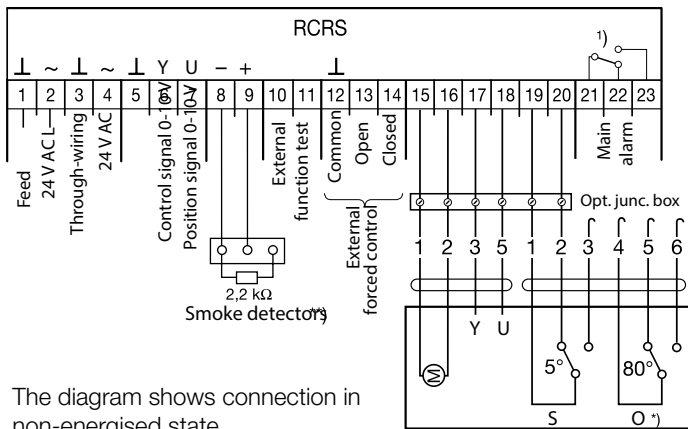


Smoke detector

0-10
↑
Connection of room regulator

Actuator

Option 3 – Connection to RCRS

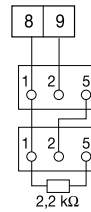


Actuator

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

*) Microswitch for O only included on BRS24-actuator

**) With detectors connected in series.

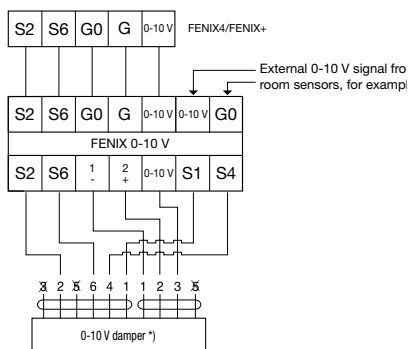


The diagram shows connection in non-energised state.

Note

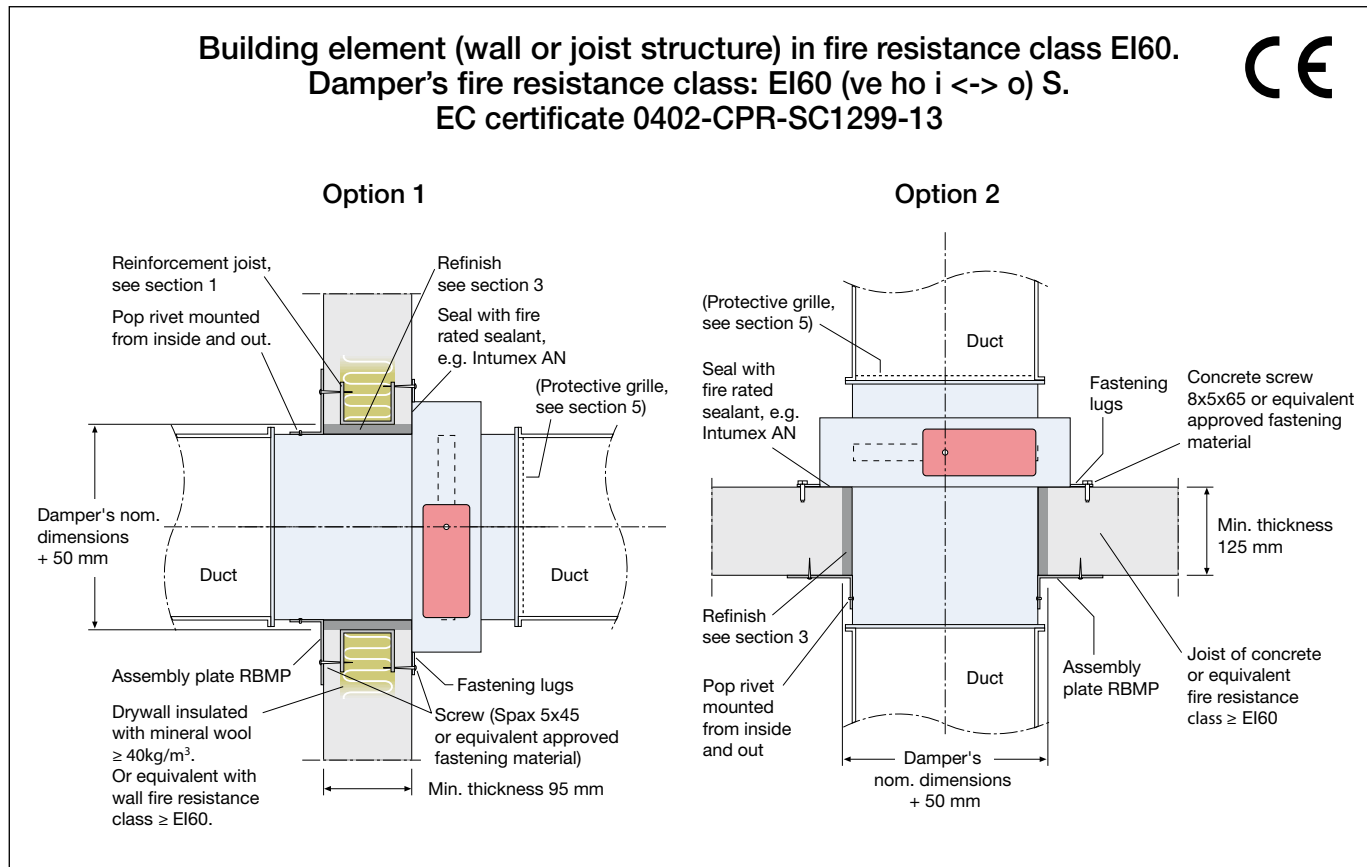
- For 2 position operation: The damper assumes min-position when the control signal is 0V or broken and max-position when 10V in-signal or 24V AC direct on block 6.
- Measurement and control signal are connected to common system 0.

Option 4 – Connection to FENIX 0-10 V module





Installation instruction



Options 1 and 2

1. Aperture equivalent to damper dimensions + 50 mm, is produced in the building element.
When mounted in a drywall, horizontal metal joists 45x45 mm shall be applied as a frame in the wall structure.
2. The damper is secured flat and tight using fire stopping sealant (Intumex AN) against the wall/joist structure with the fastening lugs, which are opened out.
When mounted in drywall, Spax screws shall be screwed in to the joists.
3. Make sure the gap between damper and wall is 25 mm all around. Sealing is carried out by caulking with mineral wool, min 40 kg/m³.
4. Fit the assembly plates RBMP on to the building element, using appropriate fastening material.
When mounted in drywall, Spax screws shall be screwed in to the joists. Attach the assembly plates on to the damper, using stainless steel pop rivets through the prepunched holes in the assembly plates.
Mount the pop rivets from the inside and out. Make sure nothing is obstructing the movement of the damper blade.
5. If fire damper is not connected to the duct system, fit non-combustible grilles designed for the damper on the unconnected sides. Connection piece RBFS may be needed from sizes 600 mm or larger.
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 stream without obstructing the movement of the damper blade.
7. Install the actuator according to applicable requirements.
8. Install the duct system according to applicable requirements. Make sure that the connected duct system does not impact on the damper in the event of a fire load.
 - Minimum distance between dampers must be 200 mm.
 - Minimum distance to joist structure/wall must be 75 mm.
 - Horizontal installation of the damper spindle.