

BSK6R

Rectangular regulating fire damper



FIRE SAFETY



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BEVENT RASCH

AIR SOLUTIONS – FOR A BETTER TOMORROW



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 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

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

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

Design

The regulating fire 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 are supplied as standard in galvanized sheet steel in accordance with environmental class C3. For higher environmental classes the casing and components can be supplied in stainless steel.

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 **BSK6R - 600 - 400 - 1 - 0**

Size

Width x Height (W x H), 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

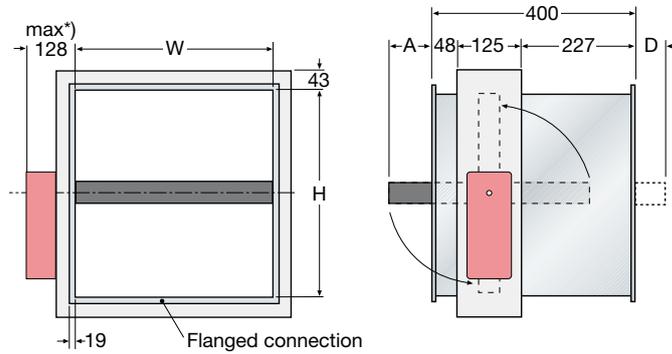
Note Factory-fitted actuator device is always included.

Accessories

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



Dimensions and weight



*) applies to standard design

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

Ød = 250 - 500 mm
1 x RBFS required

Ød = 630 - 800 mm
2 x RBFS required

*) Length as per the table above Note. For circular dampers first use the BSKC6 damper.

Assembly plate (incl. in delivery)

Supplied unassembled



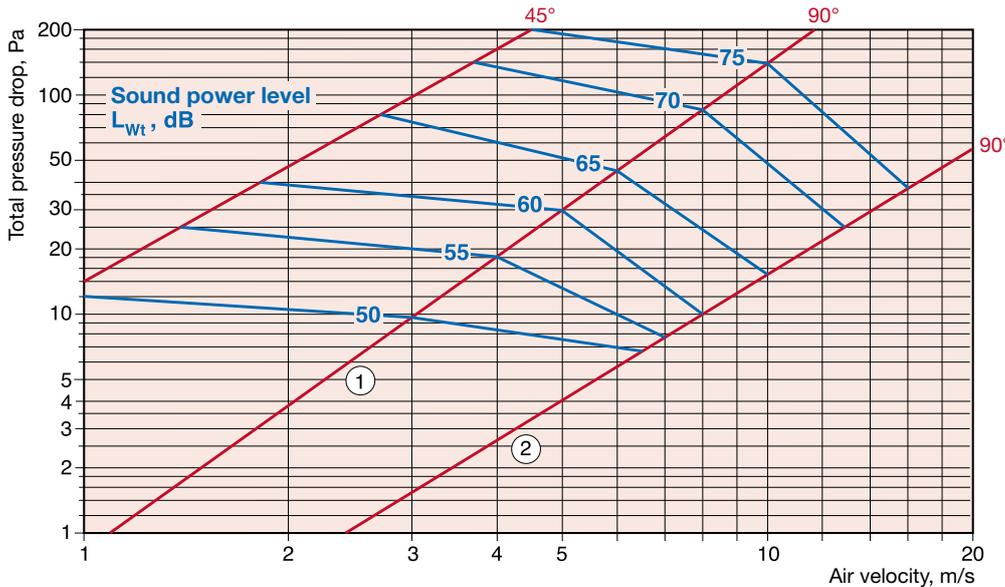
Technical data

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_{Wt} , for different sizes use curves ① - ② according to: $L_W = L_{Wt} + K_1$

Damper height mm	Damper area, m ²				
	0,04	0,08	0,16	0,32	0,64
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

Sizing, max 10 VA - BRS24-T

Running time;

- motor opening 150 s
- spring return, max approx. 20 s

Protection class IP 54

Power supply 24V~ ±20%, 50/60 Hz

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

- Working range DC 2-10V (at control signal Y)

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

Ambient temperature -30° to +50°C

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

End position contacts:

- load ≤ 300 mW min. 1 mA/5V=, max. 100 mA/250V~

After exceeding the above values, the following applies:

- load > 300 mW min. 100 mA, max. 3 A/250~

Sound level when opening approx. 45 dB(A)

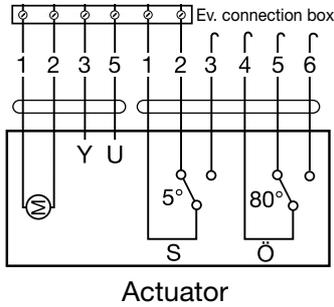
- with spring return approx. 62 dB(A)

Note: BRS24-T has end-position contacts for Open and Closed.

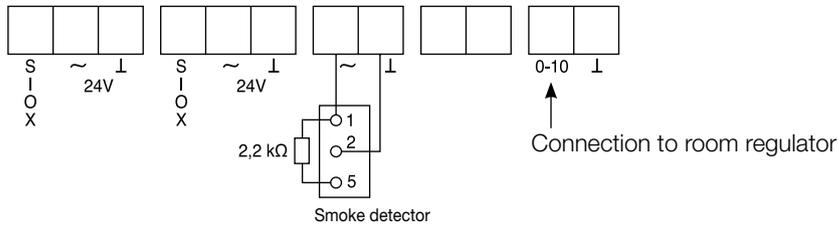


Wiring diagram

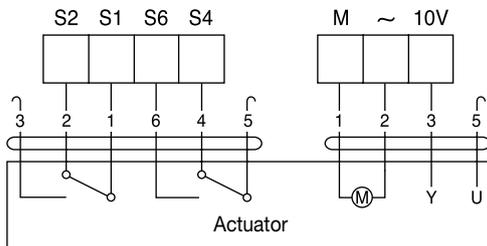
Option 1 – Connection to superior system



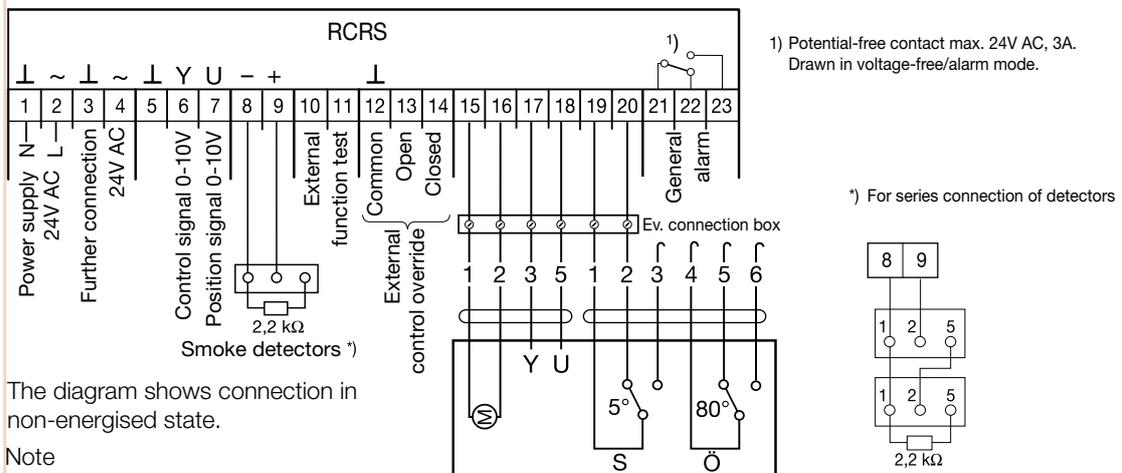
Option 2 – Connection to RCTU



BF24-SR, BRS24



Option 3 – Connection to RCRS



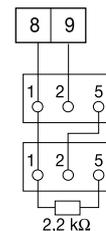
The diagram shows connection in non-energised state.

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.

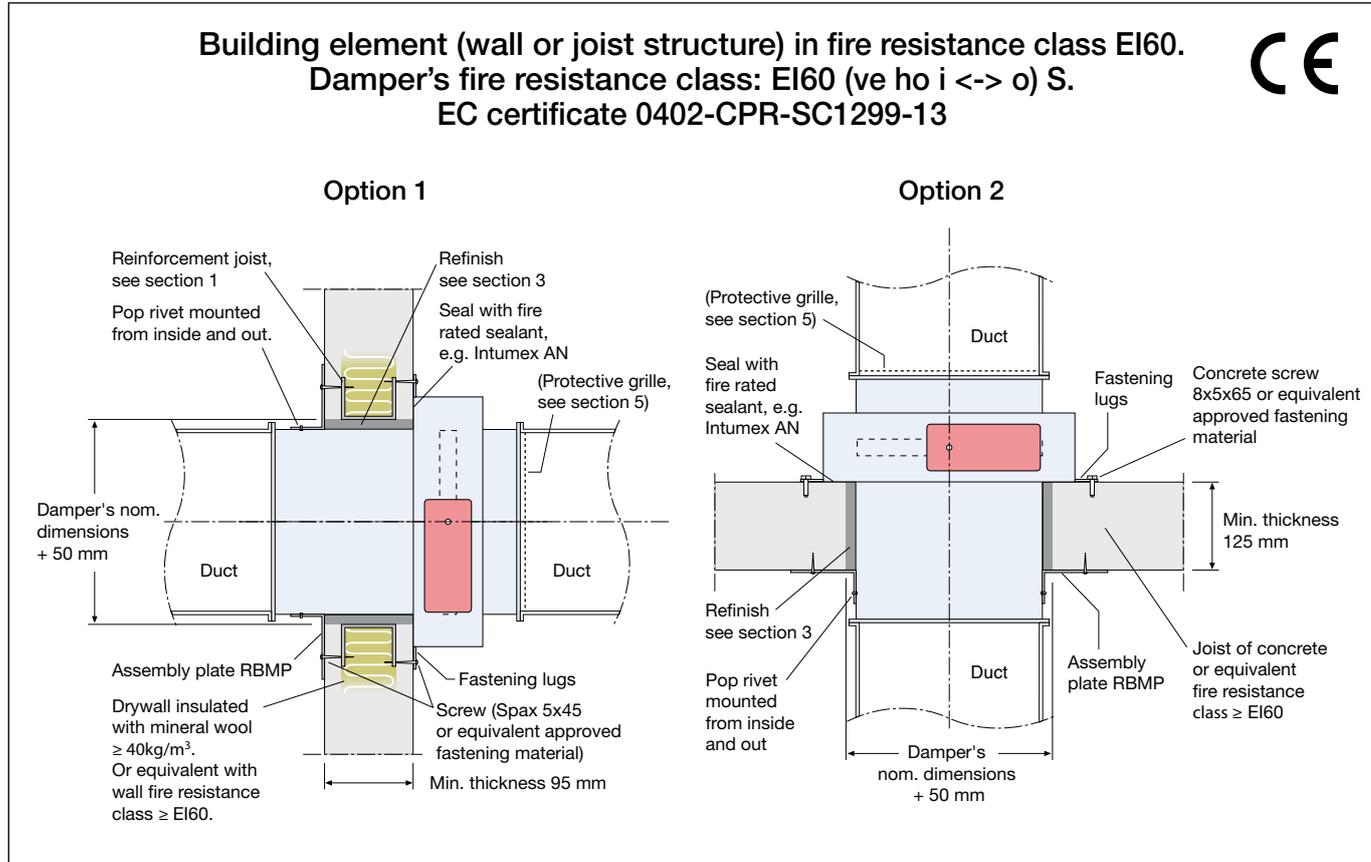
1) Potential-free contact max. 24V AC, 3A. Drawn in voltage-free/alarm mode.

*) For series connection of detectors





Installation instruction



Options 1 and 2

- 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.
- 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.
- 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.
- 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.
- 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.
- Install the thermal sensor with the sensor body in the air stream without obstructing the movement of the damper blade.
- Install the actuator according to applicable requirements.
- 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.