

RABR

Rectangular fire damper



FIRE SAFETY



15/05/2024



Quick facts

- Fire resistance class E60S / E90S / E120S
- Sizes from 200 x 200 mm to 1500 x 1500 mm
- Prefitted safety actuator 24 V or 230 V
- Slip joint connection or Flange connection
- Installation in horizontal duct up to size 800 x 900 mm
- Installation against wall/joist structure up to size 1500 x 1500 mm in combination with wall penetration RBVG
- Available in MagiCAD
- CE-marked building product in accordance with 15650:2010

Use

Damper in combination with walls or joist structures for fire separation of HVAC systems in buildings. In accordance with the harmonised European standard EN 15650:2010. In designs in accordance with the associated documents and installation instructions and when the damper is used in combination with smoke detectors and monitoring system MRB or the like, the spread of smoke is prevented. No further action against the spread of smoke is required.

Performance

EEC certificate in accordance with EN 15650:2010

402-CPR-SC0899-13

Classification of fire resistance in accordance with

EN EN 13501-3

E120 (ve ho i <-> o) S

E90 (ve ho i <-> o) S

E60 (ve ho i <-> o) S



For complete classification, see the Declaration of Performance.

Installation

RABR is installed against horizontal or vertical building elements or horizontal ducts that pass through fire compartment separating building elements, in accordance with the adjoining installation instructions. Wall penetration RBVG is used for installation against building elements.

Actuator

RABR is always supplied with an electric safety actuator with spring return complete with thermal sensor with push-button for local manual function test. The sensor disconnects the power to the actuator if the temperature exceeds 72°C inside or outside the damper. 24 V actuators are always used with the MRB monitoring system. Dampers can also be supplied with 230 V electric actuators. Note that RABR is always supplied with an actuator.

Activation

According to Boverket's Building Regulations smoke detectors must be verified in accordance with the Swedish standard SS-EN 54-7 for damper activation. The mandatory 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. This must be fitted in the ventilation duct near the damper or in another suitable location. Smoke detectors are monitored by means of Bevent Rasch's 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. See www.bevent-rasch.com for further details.



Size

Installation in horizontal duct:

200 x 200 mm up to 800 x 900 mm

Installation against wall/joist structure in combination with wall penetration RBVG:

200 x 200 mm up to 1500 x 1500 mm

Design

RABR is supplied ready for external insulation, complete with factory-fitted, maintenance-free, 24 V electric safety actuator with thermal sensor featuring built-in signal contacts to indicate damper position.

Slip joint or flange connection.

Material and surface finish

As standard, casing and components of hot-dip galvanized steel sheet in accordance with environmental class C3. For a higher environmental class, stainless steel casing and components can be supplied.

Miscellaneous

All data refers to dampers in standard design.

This type of damper must not be confused with a pressure relief damper, which has the opposite function.

Accessories

RBVG	Wall Duct
BRAS	Circ. sleeve coupling for RABR
RCKB	Connection box
RCDU	MRB system, max. 2 dampers
RCBK4	MRB system, max. 4 dampers
RCMU8	MRB system, max. 8 dampers
RCKD/-RD	Smoke detectors
RCTU/RCTC	MRB3 system, max. 236 dampers
FENIX2	max 2 dampers
FENIX4 / FENIX+	max 16 dampers

Specification

Example:

Fire damper **RABR - 600 - 400 - 1 - 1 - 1**

Size

Width x Height (W x H), mm

Connection, see dimensional drawing

Slip joint (max. 800 x 900) = 1

Flange = 2

Slip joint/Flange = 3

Material

Galvanized sheet steel = 1

Stainless AISI 316L – EN 1.4404 = 3

Actuator

Electric, 24V with thermal sensor = 1

Electric, 230V with thermal sensor = 3

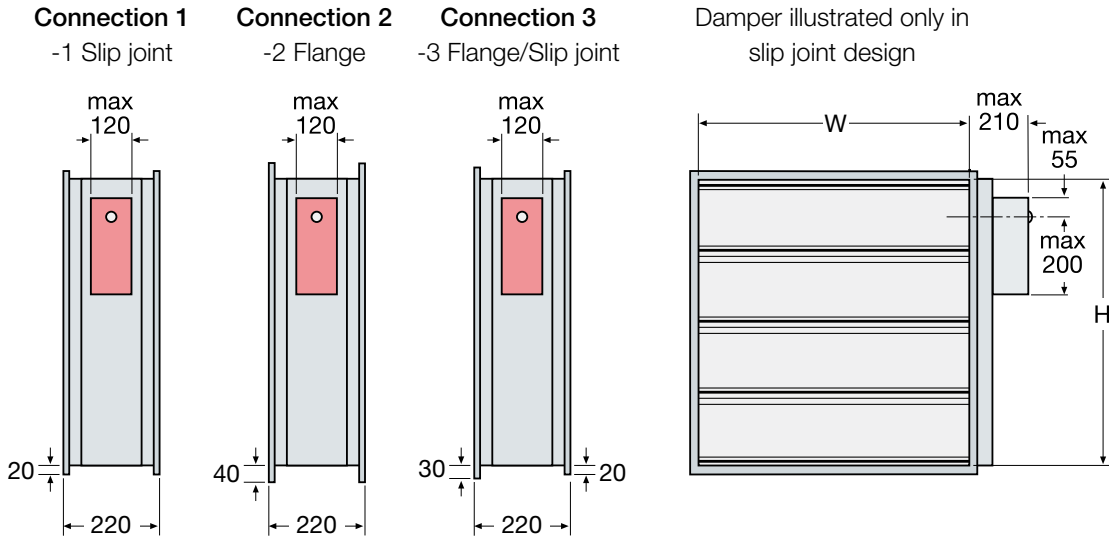
Electric, 24V incl. RCTU = 5

Factory-fitted actuator always included.

Note! Slip joint/Flange designed for installation with wall duct RBVG. For installation against wall or joist structure.



Dimensions and weight



RABR for installation in combination with RBVG supplied with connection type 3 Slip joint/Flange. RABR 250, 450, 650 etc. in height is supplied with a raised slip joint or flange connection.

No. of damper blades

Size W or H	No. of blades
200	1
300	2
400	2
500	3
600	3
700	4
800	4
900	5
1000	5
1100	6
1200	6
1300	7
1400	7
1500	8

Weight incl. actuator, kg

H	W													
	200	300	400	500	600	700	800	900	1000	1100	1200	1300	1400	1500
200	8	9	11	13	15	17	19	23	26	30	32	37	40	43
300	9	11	13	15	17	19	22	26	28	33	35	41	44	46
400	11	13	15	17	19	22	24	29	32	36	39	45	48	50
500	13	15	17	19	22	24	26	34	37	41	46	51	54	57
600	15	17	19	22	24	26	28	35	38	43	46	52	55	58
700	17	19	22	24	26	28	30	38	40	46	49	56	59	62
800	19	22	24	26	28	30	32	41	44	49	52	60	63	66
900	22	24	26	28	30	32	35	44	47	52	56	63	66	70
1000	24	26	28	30	32	34	36	47	50	56	59	67	70	74
1100	26	28	30	32	34	36	38	50	53	59	62	70	74	77
1200	28	30	32	34	36	38	40	53	56	63	66	74	78	82
1300	30	32	34	36	38	40	42	56	59	66	69	78	82	85
1400	32	34	36	38	40	42	44	59	62	69	73	82	86	89
1500	34	36	38	40	42	44	46	62	65	72	76	85	89	93



Electrical data

(values in brackets refer to 230V)

Actuator type BF..

Rating, max 10 VA (12,5 VA)

Running time;

- motor opening, max. approx. 140 s
- spring return, max. approx. 20 s

Protection class IP 54

Power supply 24V~ ±20%, 50/60Hz
 24V= ±10%
 (220-240V~ , 50/60Hz)

Ambient temperature -30° to +50°C

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

Trigger temperature
 with thermal sensor 72°C

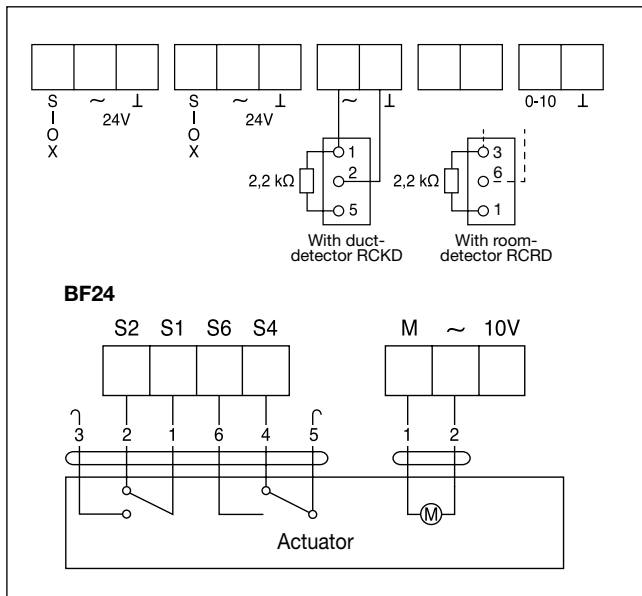
End position contacts
 - load ≤ 300 mW min. 1 mA/5V,
 max. 100 mA/250V~

After exceeding the above values, the following apply:
 - load > 300 mW min. 100 mA,
 max. 3 A/250V~

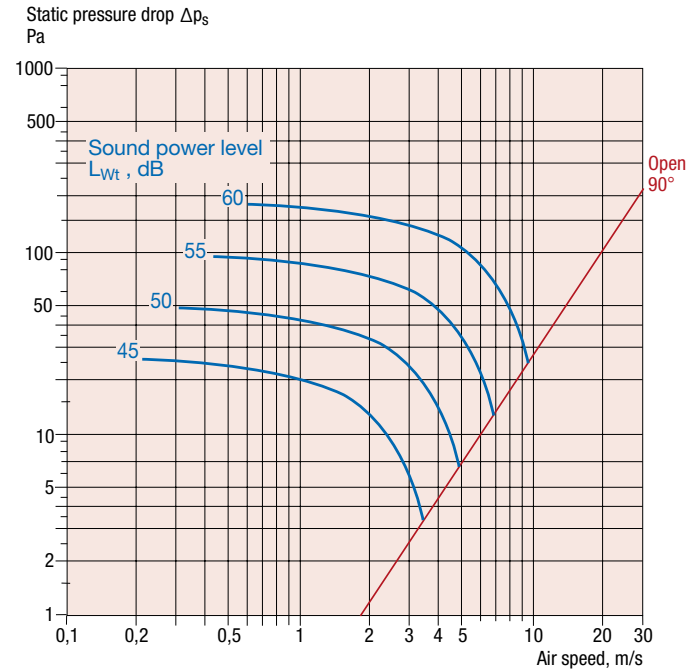
Sound level when opening .. approx. 45 dB(A)

Sound level when closing .. approx. 62 dB(A)

Connection to RCTU



Size chart



Only applies to standard sizes.

Sound data

Correction of sound power level, L_{W1} , for different sizes,
 $L_W = L_{W1} + K_1$

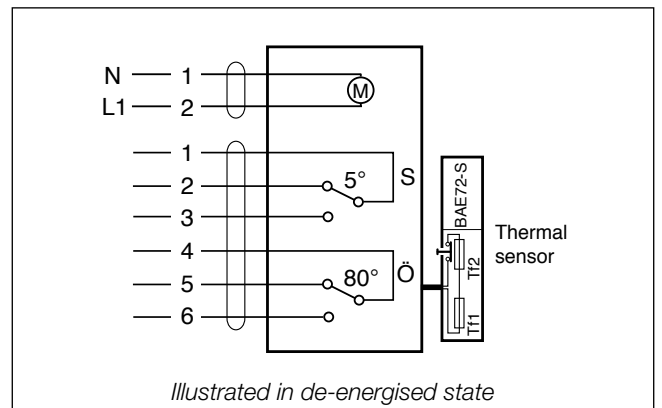
Damper area, m ²	0,08	0,16	0,32	0,5	1,0	2,0	3,0	4,0
K1	-3	0	3	4,5	7,5	10,5	12	12,8

Correction of sound power level, L_{Wok1} in octave band,
 $L_{Wok} = L_W + K_{ok}$

Korrektion, K_{ok}

Öppningsvinkel	Mittfrekvens Hz						
	125	250	500	1K	2K	4K	8K
90°	-1	-8	-16	-18	-22	-30	-37
Tol. ± dB	3	2	2	2	2	2	3

Wiring diagram





Installation instructions for RABR together with wall duct RBVG

**Building element (wall or joist structure) of fire resistance class EI60, EI120.
Damper's fire resistance class: E60 (ve ho i <-> o) S, E120 (ve ho i <-> o) S.
EC certificate 0402-CPR-SC0899-13**

Option 1

Duct connected to appropriate connection system

Reinforcement frame, see section 1

Damper's nom. dim. + 10 mm

Duct

RBVG

Plasterboard insulated with mineral wool $\geq 40\text{kg/m}^3$.
Or equivalent wall of fire resistance class $\geq EI60$.

Min. thickness 95 mm

Seal with fire stopping sealant, e.g. Intumex AN

Sizes up to 1500 x 1500 mm

Option 2

Damper's nom. dim. + 10 mm

RBVG

Duct

Duct connected to appropriate connection system

Leight weight concrete min. thickness 125 mm

Seal with fire stopping sealant, e.g. Intumex AN

Duct

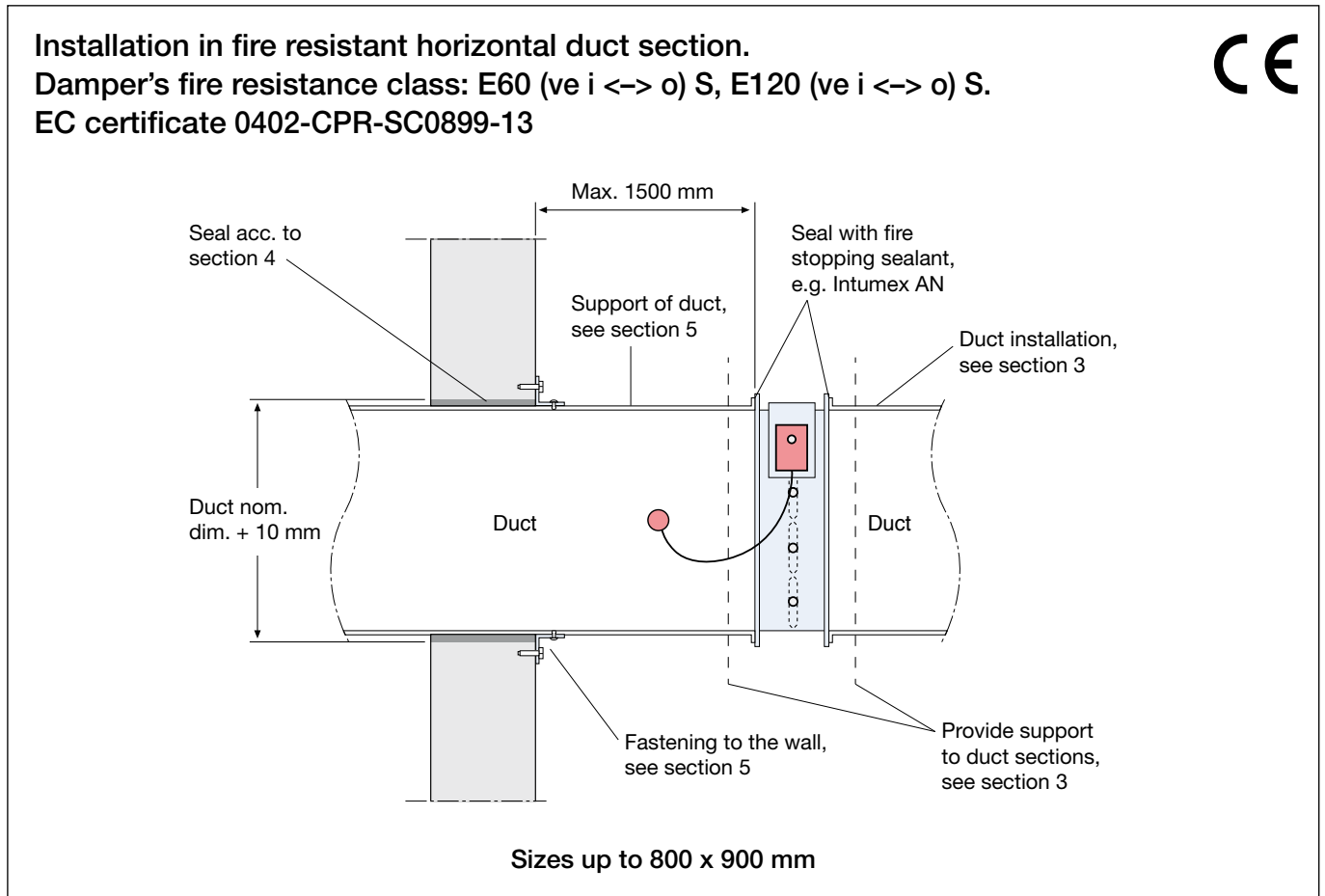
Sizes up to 1500 x 1500 mm

Options 1 and 2

1. Install wall duct RBVG in accordance with instructions (see separate installation instructions).
2. Apply fire stopping sealant around the edge of the wall penetration flange.
3. Affix the damper in wall duct RBVG using M 8x12 screws.
4. Install the thermal sensor in the air stream without obstructing the movement of the damper blades.
5. If the fire damper is not connected to the duct system, fit non-combustible grilles designed for the damper on the unconnected sides.
6. Connect the actuator to the control unit and perform a function test.
7. Install the duct system in accordance with applicable requirements. Ensure that the connecting duct does not affect the damper when under a fire load.
 - Minimum distance between dampers must be 200 mm.
 - Minimum distance to joist structure/wall must be 75 mm.
 - Install damper spindle horizontally
 - Make sure the diagonal measurements of the duct are equal.



Installation instruction



1. Install the damper in the duct with connection for slide joint or flange. Seal with fire stopping sealant, e.g. Intumex AN.
 2. Install the thermal sensor with the sensor body in the air stream without obstructing the movement of the damper blade.
 3. Install the duct system according to applicable requirements. Make sure the connecting duct does not affect the damper at fire load. Ensure duct sections are supported immediately on both sides of damper.
 4. Duct going through building element, is sealed according to applicable requirements, such as caulking with mineral wool, min 40 kg/m³ and fire stopping sealant.
 5. Duct is fastened/supported according to applicable requirements.
 6. Protect the duct according to applicable requirements using instructions from the fire rated duct supplier.
- When installed inside a fire cell, protect duct according to applicable requirements to prevent thermal damage to the structure (duct system).
- *Minimum distance between dampers must be 200 mm.*
 - *Minimum distance to joist structure/wall must be 75 mm.*
 - *Horizontal installation of the damper spindle.*
 - *Make sure the diagonal measurements of the duct are equal.*



Quick facts

- Sizes from 200 x 200 mm to 1500 x 1500 mm

Use

Wall duct in combination with walls or joist structures to achieve an optimal damper or duct system connection. The wall duct creates a tidy, sealed connection to the building element and requires neither refinishing nor painting. Also used in combination with smoke dampers for the fire separation of ventilation systems in buildings.

Design

The wall duct is supplied complete with fixings for a flange connection and extenders for connection to a duct system.

Material and surface finish

As standard, casing and components of hot-dip galvanized steel sheet in accordance with environmental class C3. For a higher environmental class, stainless steel casing and components can be supplied.

Specification

Example:

Wall Duct **RBVG - 500 - 300 - 300 - 0 - 1**

Size
Width x Height (W x H), mm _____

Length, mm _____

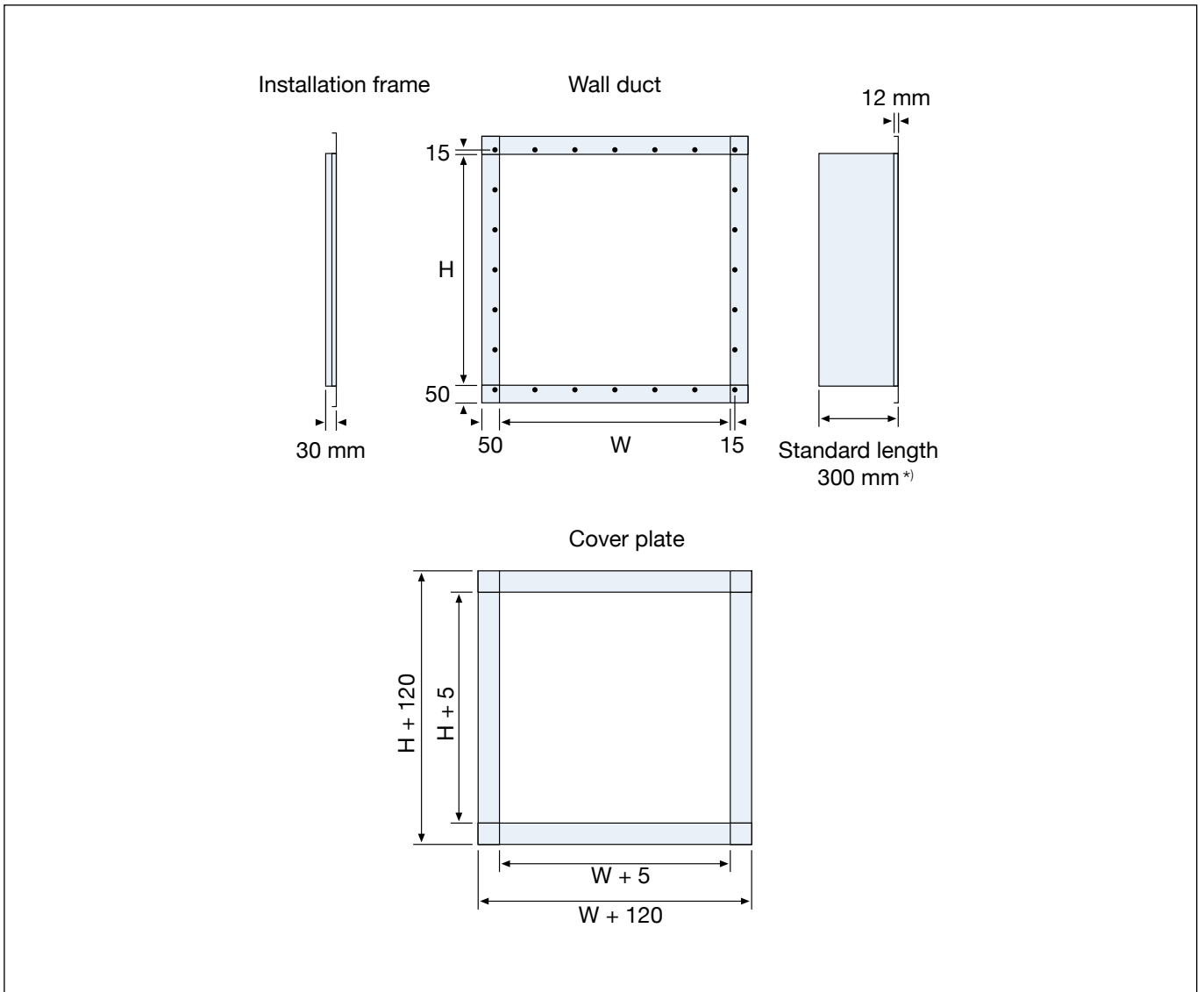
Insulation,
Without insulation = 0 _____

Connection, see dimensional drawing
Flange, 30 mm = 1 _____

Note. Lengths other than 300 mm shall be clearly specified.



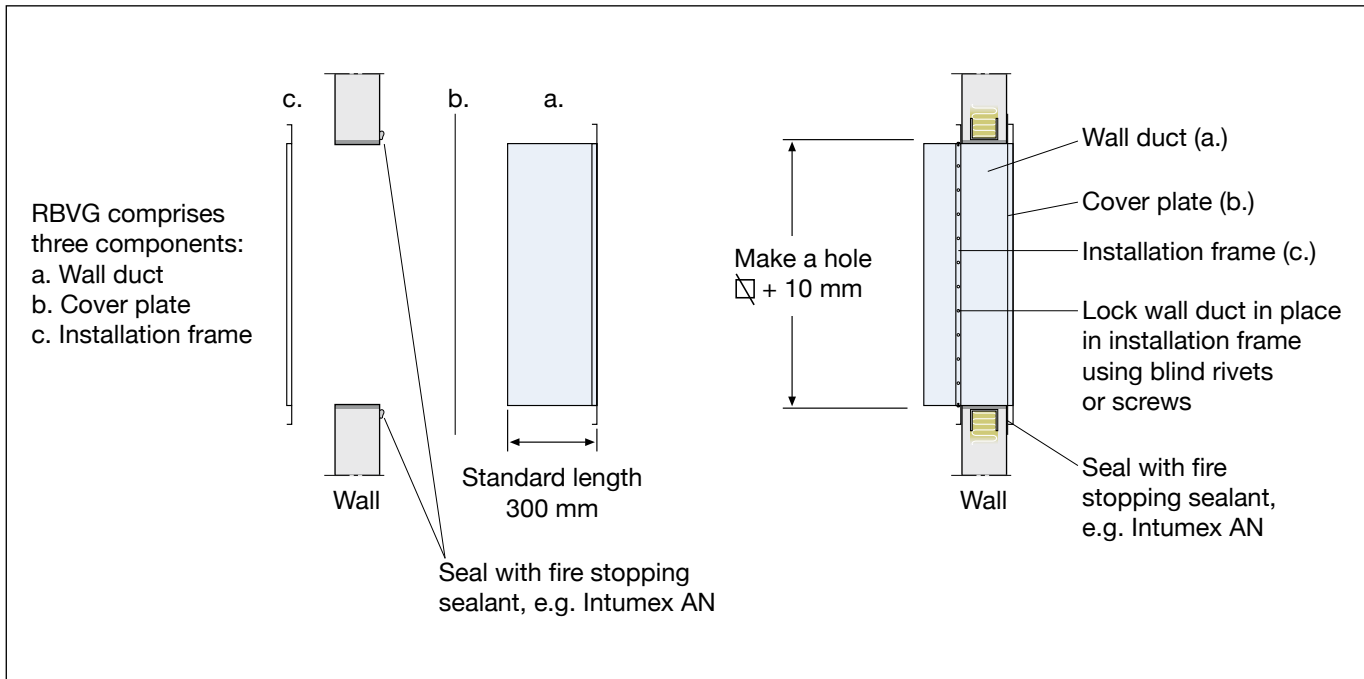
Dimensions and weight



*) Clearly specify lengths other than 300 mm when ordering.



Installation instructions for wall duct RBVG



1. Make a hole, corresponding to the duct's nominal dimensions + 10 mm, in the building element.
If installing in plasterboard, a steel reinforcement frame must be used.
2. Apply fire rated sealant (such as Intumex AN) to the building element around the hole, approx. 10 mm from the edge.
3. Fit the cover plate over the wall duct and affix the unit to the building element with the fire rated sealant.
4. Slide on the installation frame from the opposite side and affix with clamps or the like. Ensure that the cover plate and the fire rated sealant comprise a tight seal against the building element.
5. Lock the wall duct in place in the installation frame with screws or blind rivets spaced 100-150 mm apart.
6. Attach the appropriate joint for the duct and connect.
7. If the duct system is not connected, for example, when installed as a termination device or transfer air device, 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.