

BXC

DEMAND CONTROLLED EXHAUST UNIT FOR MEV



A multifunctional exhaust unit to optimise indoor air quality and energy efficiency in MEV applications

The BXC incorporates all of the functions one could want in an air exhaust unit: various activation modes, such as humidity sensitive, presence detection, switch, and even CO₂ are available to adapt the ventilation to occupants' needs. The exhaust airflow is automatically modulated, in silent operation. The range of variable airflows can be set at installation to meet special needs, or to compensate for a lack of pressure; commissioning is also facilitated by the presence of a pressure plug, which allows measurement and easy calculation of the airflow.

Airflow '+': airflow can be set at time of installation (1)

The BXC lets you set the airflow according to the pressure available or to specific regulation requirements. The fixed shutter can be set to 6 positions, with an average step of +10 m³/h (maximum = +50 m³/h).

Pressure plug to help commissioning (2)

The built-in pressure plug makes it easy to measure the pressure using a manometer, then calculate airflow using a table in the installation instructions.

Advanced special versions (3)

The BXC was the first exhaust unit in the world offering the possibility of having built-in CO₂ and VOC sensors, for example. These innovations are especially well suited to applications in schools, offices, gymnasiums, mobile homes, etc. A remote control version is also available.

Exhaust unit



Humidity sensitive, presence detector and switch versions: modulates the airflow according to the various needs of the dwelling.

Airflow '+': possibility of setting the airflow levels at installation: up to + 50 m³/h on the max. airflow.



Advanced special versions: CO₂, VOC, and remote control versions.



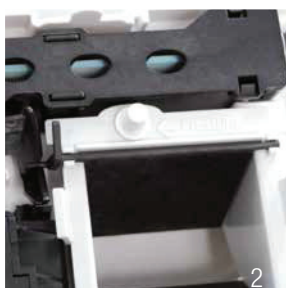
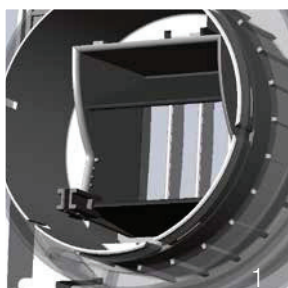
Silent working: silent auxiliary airflow activation.

Battery indicator: buzzer to indicate low battery level.

Pressure plug: allows pressure measurement to determine the airflow.



Easy to maintain: removable shutter case and front cover for easy cleaning.





BXC Exhaust unit for MEV

Standard code

Airflow characteristics

Humidity sensitive

Boost airflow

Boost airflow activated by switch

Boost airflow activated by presence detection

Other activation modes

Airflow @ 100 Pa (min.-max.) (1)

Airflow '+' - maximum available airflow @ 100 Pa (2)

Acoustics

Sound pressure level Lp @ 2 m, 100 Pa, 80 m³/h, min. airflow '+' setting

Dn,e,w (C, Ctr) Acoustic insulation, RH = 65 %, min. airflow '+' setting

Power supply

2 x 1.5 V AAA LR03 batteries (not supplied)

Buzzer (low battery charge)

12 VAC supply with specific transformer (ref. CAL261)

Characteristics

Colour

Material (main)

Installation

Round duct compatibility with integrated spigot

Round duct compatibility with accessory spigot (3)

Round duct compatibility - bracket version (min.-max.)

Rectangular duct compatibility - bracket version (min.-max.)

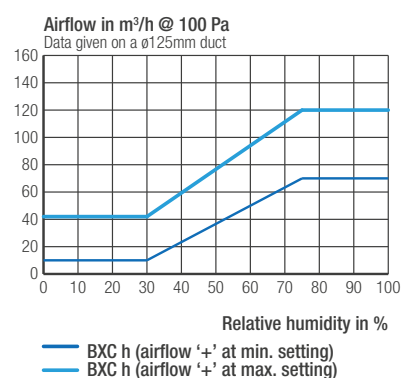
Other functions

60" delay to activate the presence boost airflow

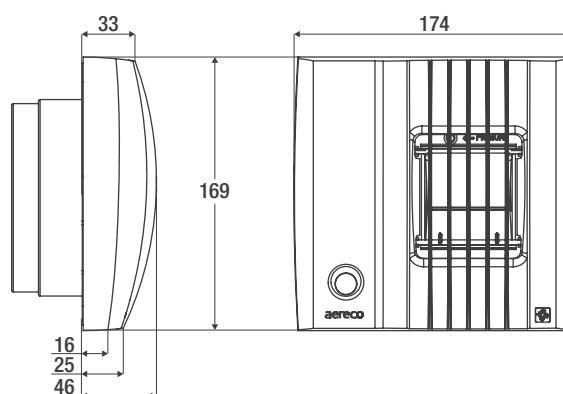
Pressure plug

	BXC h	BXC p	BXC hi	BXC hp	BXC pd
Standard code	BXC273	BXC276	BXC215	on request	BXC299
Humidity sensitive	■	-	■	■	-
Boost airflow	-	■	■	■	■
Boost airflow activated by switch	-	-	■	-	-
Boost airflow activated by presence detection	-	■	-	■	■
Other activation modes	-	-	-	-	-
Airflow @ 100 Pa (min.-max.) (1)	m³/h 12-70	m³/h 12-70	m³/h 12-70	m³/h 12-70	m³/h 12-70
Airflow '+' - maximum available airflow @ 100 Pa (2)	m³/h 120	m³/h 120	m³/h 120	m³/h 120	m³/h 120
Sound pressure level Lp @ 2 m, 100 Pa, 80 m³/h, min. airflow '+' setting	dB(A) 28.3				
Dn,e,w (C, Ctr) Acoustic insulation, RH = 65 %, min. airflow '+' setting	dB 57 (-2 ; -4)	-	dB 57 (-2 ; -4)	dB 57 (-2 ; -4)	-
2 x 1.5 V AAA LR03 batteries (not supplied)	-	⊗	⊗	⊗	⊗
Buzzer (low battery charge)	-	■	■	■	■
12 VAC supply with specific transformer (ref. CAL261)	-	⊗	⊗	⊗	⊗
Colour	white	white	white	white	white
Material (main)	PS / ABS	PS / ABS	PS / ABS	PS / ABS	PS / ABS
Round duct compatibility with integrated spigot	mm Ø125	mm Ø125	mm Ø125	mm Ø125	mm Ø125
Round duct compatibility with accessory spigot (3)	mm Ø100	mm Ø100	mm Ø100	mm Ø100	mm Ø100
Round duct compatibility - bracket version (min.-max.)	mm Ø85 - Ø90	mm Ø85 - Ø90	mm Ø85 - Ø90	mm Ø85 - Ø90	mm Ø85 - Ø90
Rectangular duct compatibility - bracket version (min.-max.)	mm 67 x 60 - 67 x 66	mm 67 x 60 - 67 x 66	mm 67 x 60 - 67 x 66	mm 67 x 60 - 67 x 66	mm 67 x 60 - 67 x 66
60" delay to activate the presence boost airflow	-	-	-	-	■
Pressure plug	■	■	■	■	■

Airflow characteristics



Dimensions in mm



BXC hpd	BXC co ₂	BXC voc	BXC hrc	BXC rc	BFX	BXC s
BXC275	BXC401	BXC402	BXC406	BXC404	BXC371	BXC403
■	-	-	■	-	-	-
■	■	■	■	■	-	■
-	-	-	-	-	-	⊗
■	-	-	-	-	-	-
-	CO ₂ level	VOC level	remote control	remote control	-	BXC CO ₂ or VOC
12-70	12-80	12-80	12-80	12-80	12 / 120 (4)	12-80
120	130	130	130	130	120	130
			28.3			
57 (-2 ; -4)	-	-	57 (-2 ; -4)	-	-	-
⊗	-	-	⊗	⊗	-	⊗
■	-	-	■	■	-	⊗
⊗	■ (CAL included)	■ (CAL included)	⊗	⊗	-	■
white	white	white	white	white	white	white
PS / ABS	PS / ABS	PS / ABS	PS / ABS	PS / ABS	PS / ABS	PS / ABS
ø125	ø100	ø100	ø100	ø100	ø125	ø100
ø100	ø125	ø125	ø125	ø125	ø100	ø125
ø85 - ø90	ø85 - ø90	ø85 - ø90	ø85 - ø90	ø85 - ø90	ø85 - ø90	ø85 - ø90
67 x 60 - 67 x 66	67 x 60 - 67 x 66	67 x 60 - 67 x 66	67 x 60 - 67 x 66	67 x 60 - 67 x 66	67 x 60 - 67 x 66	67 x 60 - 67 x 66
■	-	-	-	-	-	-
■	■	■	■	■	■	■

Note: airflows given for a ø125 mm duct

■ standard / included - ⊗ compatible

(1) Default setting.

(2) Airflow '+': the airflow can be increased from +10 m³/h to + 50 m³/h (6 available positions). This function can be used to adapt to lower pressures or to specific regulations imposing higher airflows. Standard is position 0 (minimum airflow = 12 m³/h @ 100 Pa).

(3) Delivered in specific versions or available as accessory (A4260: 100mm adaptor for BXC; AEA317: 125mm adaptor for BXC).

(4) Total of 18 configurations available for airflow setting for BFX version.

BXC

Demand controlled extract unit
for mechanical ventilation

Technical specifications



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The BXC gathers all the functions one can request from an air extract unit. At the installation first, as the airflow levels can be set to adapt to special airflow requirements or to compensate a lack of pressure: a neutral position of the "fix" shutter can be easily determined. The commissioning is also facilitated by the presence of a pressure plug which enables measurements and easy calculation of the airflow.

During the use of the product, the occupant can benefit from different functions (humidity sensitive, presence detection, switch, CO₂, COV, slave or remote control) to adapt automatically the extracted airflow. The boost airflow is provided in a total silent: a new motor equips all the electrical versions. Its single part front cover ensures perfect colour homogeneity.



Main functions

- Different activation modes (humidity sensitive, presence, switch, remote control, CO₂, COV and slave)
- Boost airflow
- Possibility to set the airflow levels at the installation: up to +50 m³/h (@ 100 Pa) on the maximum airflow
- Silent boost airflow activation (new motor)
- Special buzzer to indicate low level battery
- Front cover in one part to enable different designs and to guarantee colour homogeneity
- Installation in bracket or spigot (Ø100 mm in standard, Ø125 mm with accessory)¹
- Possibility to measure the pressure to calculate the airflow (pressure plug)

1. Some version are directly equipped with Ø125 mm spigot.

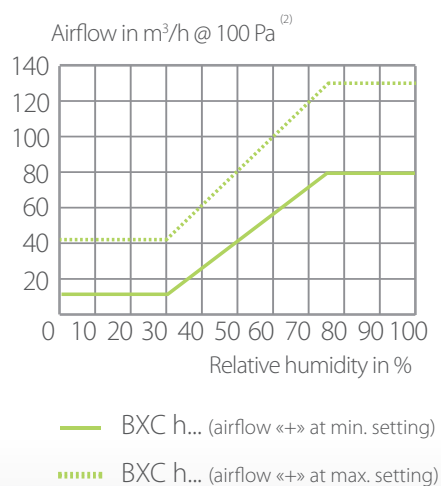
Aeraulics

Versions

		BXC h	BXC p	BXC hi	BXC hp	BXC pd	BXC hpd	BFX	BXC co ₂	BXC cov	BXC rc	BXC s
Airflow characteristics												
Humidity sensitive		■	-	■	■	-	■	-	-	-	-	-
With boost airflow		-	■	■	■	■	■	-	■	■	■	■
Boost airflow activated by switch		-	-	■	-	-	-	-	-	-	-	■
Boost airflow activated by presence detection		-	■	-	■	■	■	-	-	-	-	-
Other activation modes		-	-	-	-	-	-	-	CO ₂ level	COV level	remote control	BXC co ₂ BXC cov
Humidity sensitive airflow (min - max) @ 100 Pa ⁽²⁾	m ³ /h	12-80	-	12-80	12-80	-	12-80	-	-	-	-	-
Min. airflow @ 100 Pa ⁽²⁾	m ³ /h	12	12	12	12	12	12	12	12	12	12	12
Max. airflow @ 100 Pa ⁽²⁾	m ³ /h	80	80	80	80	80	80	130	80	80	80	80
Airflow «+» - maximum available airflow @ 100 Pa (ø100 mm) ⁽²⁾	m ³ /h	130	130	130	130	130	130	130	130	130	130	130

■ : standard - : not available

Humidity sensitive airflow



Boost airflow

- 80 m³/h at position 0 of the fix shutter
- Up to 130 m³/h at the maximum position of the fix shutter
- **Timing:** 20 mn +/- 1 mn after last action

BFX (fixed airflow version)

The BFX can be set at the installation to determine the airflow among different levels from 12 to 130 m³/h @ 100 Pa (18 configurations available)



BXC p, pd, hp, hpd, rc



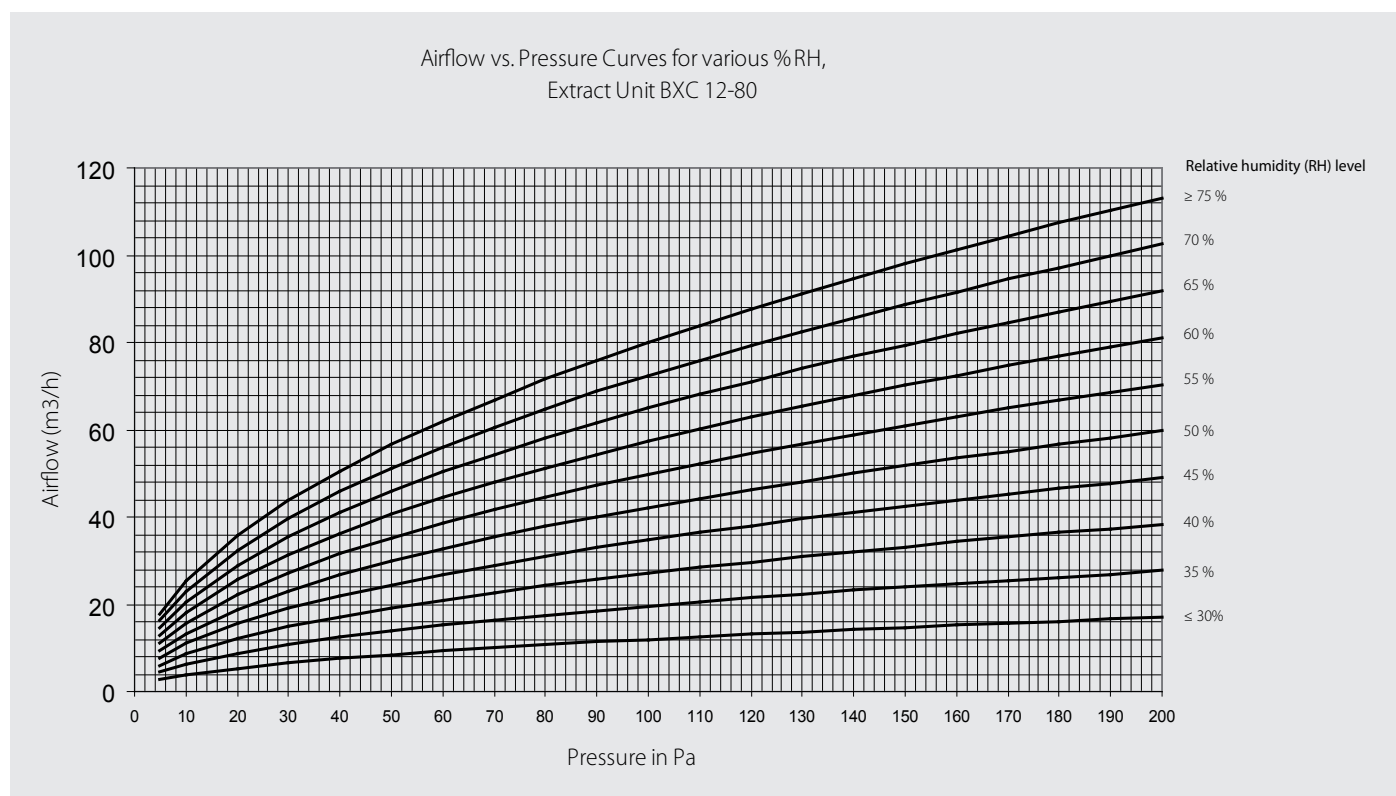
BXC h, BXC hi, BFX, BXC s



Operating diode of VOC and CO₂ versions

2. Data given on Ø100 mm duct. Max. 70 m³/h (up to 120 m³/h) when connected to a Ø125 mm duct (same minimum airflow). See « Settable airflow »

Airflow vs. Pressure for various % RH



Measures given on a Ø100 mm spigot version, for minimum position of the settable airflow (see § «settable airflow»).

Acoustics

Proper noise

Lw @ min airflow (min RH, airflow «+» at P0), 100 Pa = 24.9 dB(A)

Lw in dB(A) @ 100 Pa for various positions of the settable shutter, at maximum RH:

Position of the settable shutter, max RH	Lw in dB(A) @ 100 Pa
0	28.3
1	31.1
2	32.4
3	34.2
4	36.8
5	39.3

Data given on a long Ø 125 mm duct. Tests realised at CERGA laboratory.

Sound insulation Dn, e

Configuration	Dn, e, w (C; Ctr) in dB
RH = 65% Fix shutter in position 0	57 (-2; -4)
RH = 65% Fix shutter in position 5	55 (-1; -3)

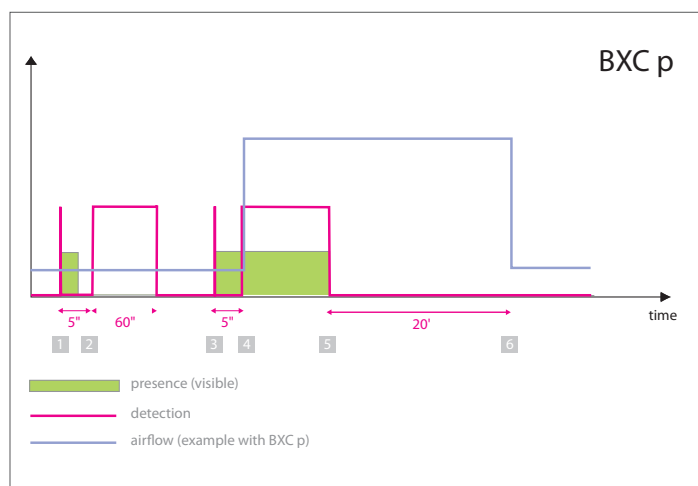
Tests realised by CSTB (n. VE - AC10 - 26027710-1) on BXC273EX according to standard EN ISO 140-1, EN 20140-2 (1993), EN 13141-2 (2004), EN 13141-10 (2008) and EN ISO 717/1 (1997).



"p" and "hp" versions:

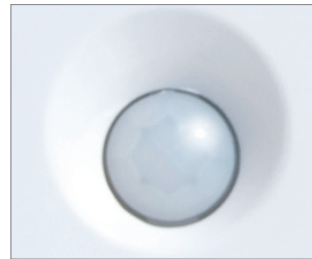
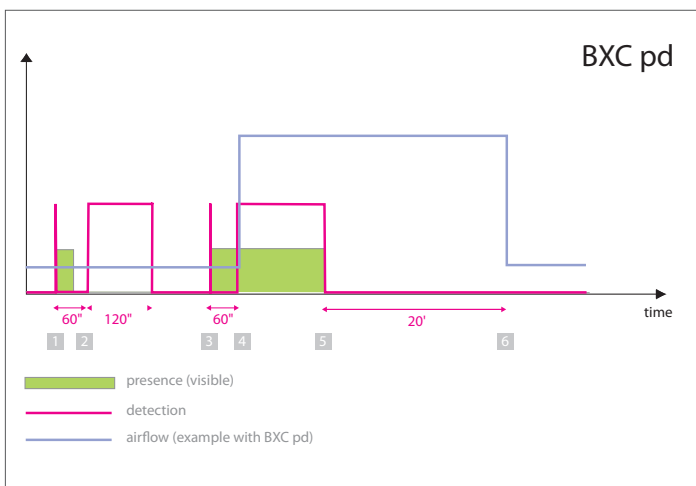
The boost airflow is activated when new detection after 5"⁽³⁾. The graph on the right presents the operation of detection and boost airflow.

Detection (presence version)



- 1 The detected presence of the occupant activates the time counter.
- 2 As 5" later, the occupant is still not detected during a 60" detection range, the boost airflow is not activated.
- 3 A new detection operates when the occupant enters the room where the extract unit is located.
- 4 5" later, the occupant is still detected, so that it activates the boost airflow of the extract unit. The detection is activated as long as the occupant is seen by the sensor.
- 5 As soon as the occupant is not visible by the sensor, a timer starts then maintains the boost airflow during 20'.
- 6 If no occupant is detected, boost airflow ends when the timer is over.

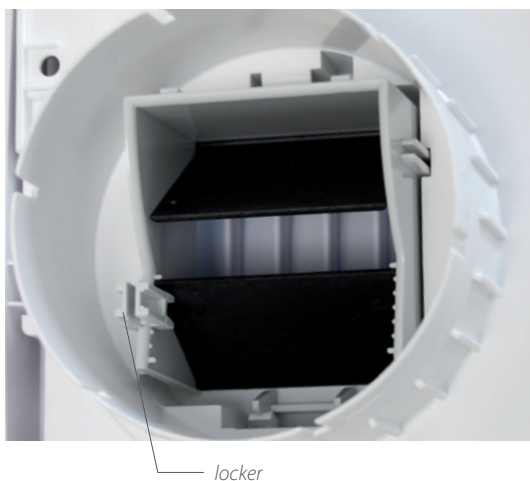
3. Average data (5-60" after first detection – see graph). This version can be used to avoid over-detection (people passing in the corridor when the door of the bathroom / toilets is opened for example)



"pd" and "hpd" versions:

The boost airflow is activated when new detection after 60". The graph on the left presents the operation of detection and boost airflow. It works with the same principle as "p" and "hp" versions with different timing.

- 1 The detected presence of the occupant activates the time counter.
- 2 As 60" later, the occupant is still not detected during a 120" detection range, the boost airflow is not activated.
- 3 A new detection operates when the occupant enters the room where the extract unit is located.
- 4 60" later, the occupant is still detected, so that it activates the boost airflow of the extract unit. The detection is activated as long as the occupant is seen by the sensor.
- 5 As soon as the occupant is not visible by the sensor, a timer starts then maintains the boost airflow during 20'.
- 6 If no occupant is detected, boost airflow ends when the timer is over.



Settable airflow

The BXC proposes the possibility to set the airflow according to the needs or to regulation requirements, by the mean of plots in the shutter box as shown picture on the left.

The fix shutter can be set among 6 positions:

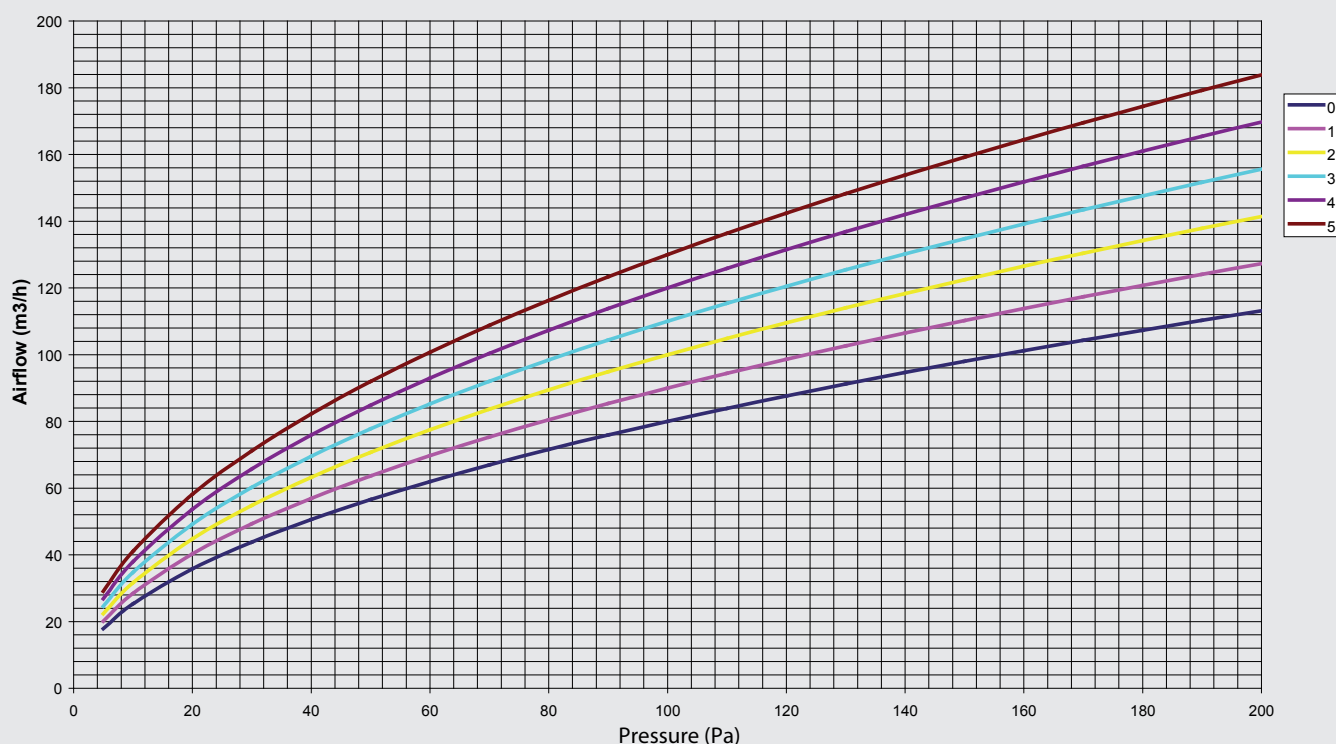
- to change the airflow levels
- to adapt to available pressure

Average step on the maximum variable airflow = + 10 m³/h (maximum = + 50 m³/h). The position is then locked by a special device to avoid any unintentional move during cleaning.

The product is standardly delivered at P0 position (minimum airflow), excepted specific versions.

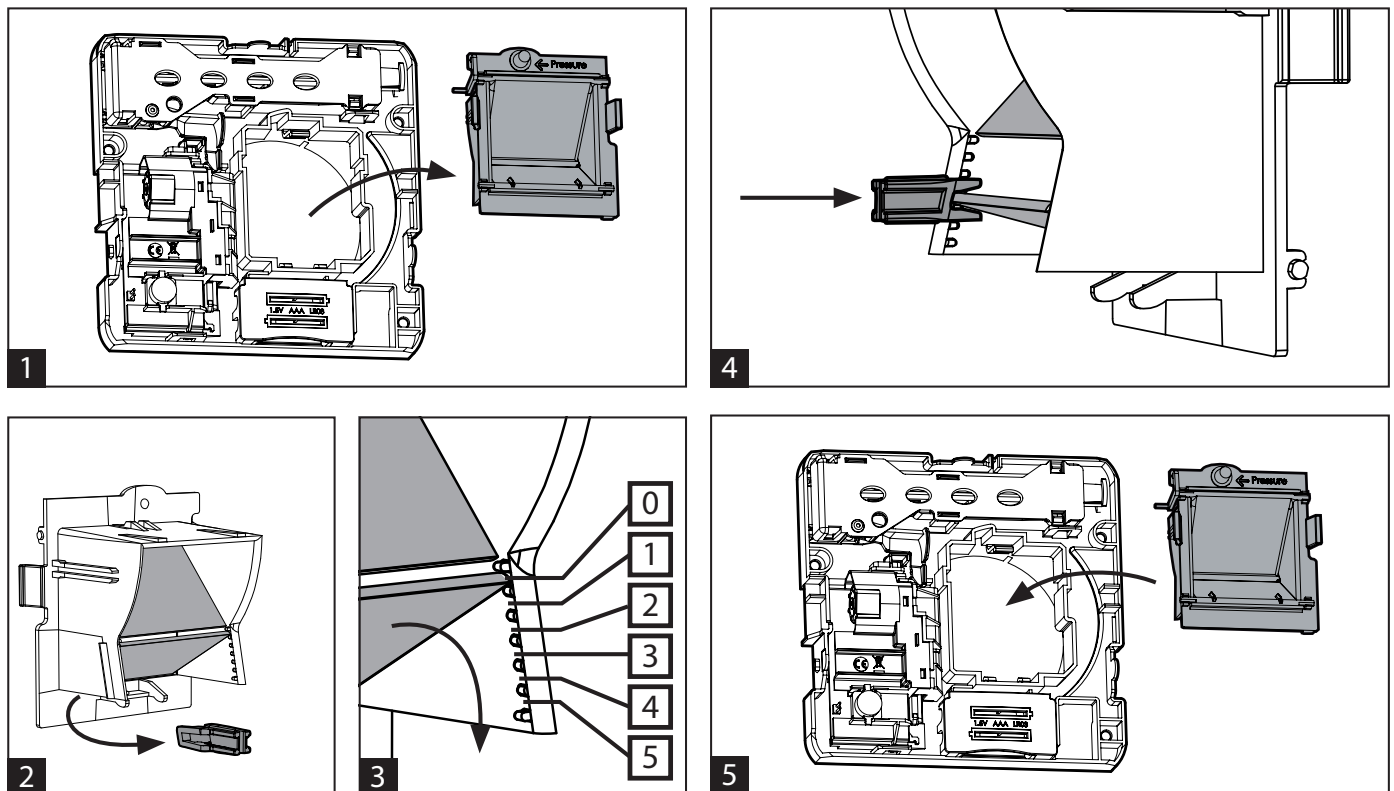
Airflow vs. Pressure for various % RH

BXC Ø100 mm - Airflow depending on pressure for various positions of the fix flap at maximum RH



Measures given on a Ø100 mm spigot version, for maximum % RH.

Setting of the shutter position



Minimum and maximum airflows according to the setting of the fix shutter:

position	Min airflow (m ³ /h) @ 100 Pa	Max airflow (m ³ /h) @ 100 Pa
0	12	80
1	18	90
2	24	100
3	30	110
4	36	120
5	42	130

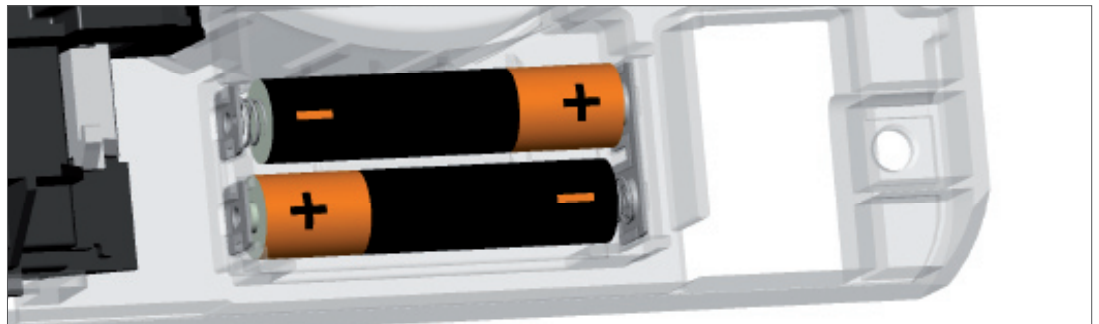
Data given on Ø100 mm duct

position	Min airflow (m ³ /h) @ 100 Pa	Max airflow (m ³ /h) @ 100 Pa
0	12	70
1	18	80
2	24	90
3	30	100
4	36	110
5	42	120

Data given on Ø125 mm duct

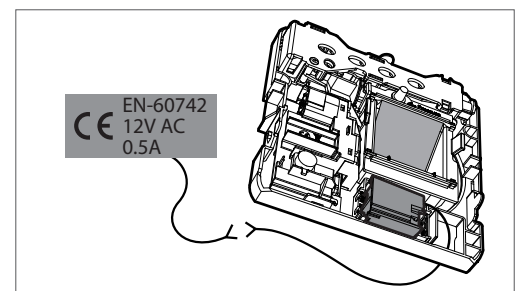
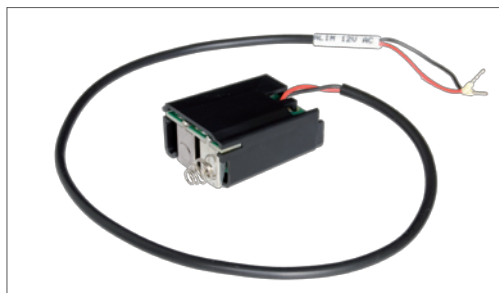
Supply

The supply is realised by the mean of 2 x **1.5V AAA LR03** Batteries (see below), accessible by dismounting the front cover. The 1.5V AAA LR03 battery is standard and enables a greater longevity (2 years average).



12 VAC Supply

A specific supply device enables the connection to **12 VAC**. This accessory can be inserted in the space dedicated for the two 1.5 V batteries. Code CAL261EX. Maximum current = 0.5A.



Buzzer

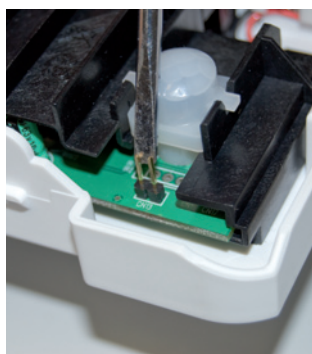
A 'beep' is emitted when opening on switch, presence and remote control and slave versions. The occupant can thus easily verify the proper functioning of the extract unit and the wiring of the switch (switch version).

A specific sound informs also the occupant when the battery needs to be replaced (when the battery level is below 2,2 V.). It rings when the boost is activated on presence, switch, remote control and slave versions. Driven shutter remains open when battery is over.

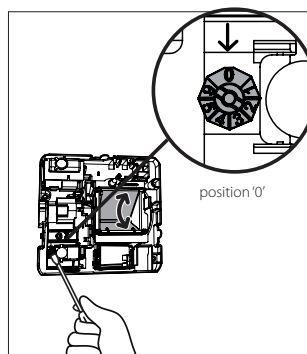
Test

A test is available to check the working of the motor as well as the battery level (same process as for the BXS). The contact moves the shutters two returns (presented picture = process for switch, presence, slave and remote control).

Testing is realised through a level selector on CO₂ and COV versions (position 0).



Test of the switch, presence, slave and remote control versions.



Test of the CO₂ or COV versions.

CO₂ and COV versions – light signals

Identification at the connection

A brief light signal is emitted at the led when the product is connected to the supply, completing the shutter's go and back. A green light indicates a CO₂ version; a yellow light indicates a COV version.



Starting light signal of COV version

Pollutant level

A led indicates the detected pollutant level: green when the pollutant concentration is below the set level, yellow when it is equal or above.

Default

A flashing light indicates a problem on the product. When it occurs, disconnect then connect again the product to the supply. If the problems persists, please contact the installer or the supplier.

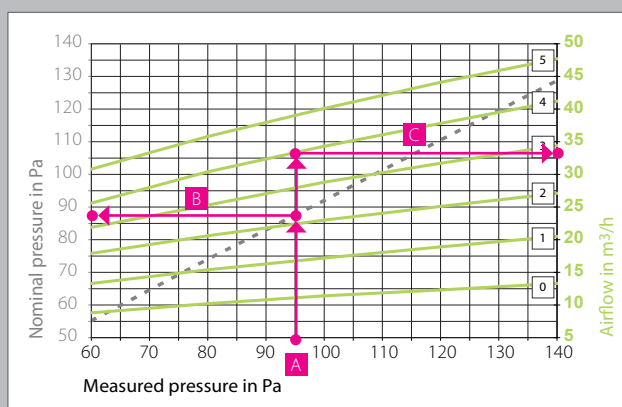
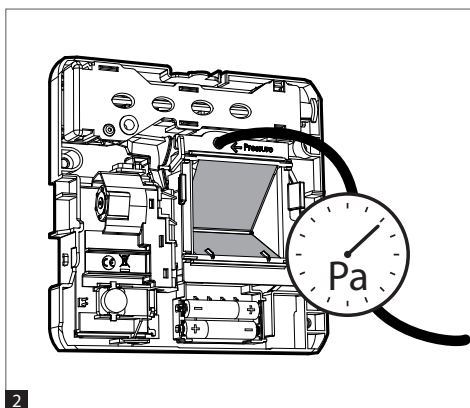
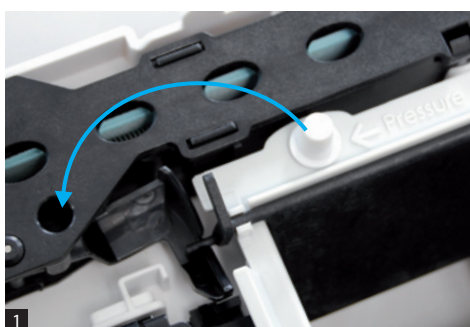


Light signal of CO₂ or COV version when pollutant are below the set level

Pressure plug

The pressure plug enables to measure the pressure by the mean of a manometer, to deduce the airflow through a table. Once taken off, the plug stopper is used to fix the humidity sensitive airflow at its minimum position (see scheme on the right)⁴. This function is particularly appropriated for the commissioning.

The chart below (available in the installation instruction) enables to deduce airflow / pressure according to the fix shutter position:



Nominal pressure and airflow according to measured pressure (BXC extract unit)

How to read this chart?

- A** Report the measured pressure (95 Pa in this example).
- B** Read the nominal pressure (87 Pa in this example).
- C** Read the corresponding airflow, depending on the fix shutter position (33 m³/h in this example when fix shutter is in position n.4). *Please notice that this airflow corresponds to the situation when relative humidity level is below 30%.*

4. While pushing the hygro lever with fingers to help closing the driven shutter.

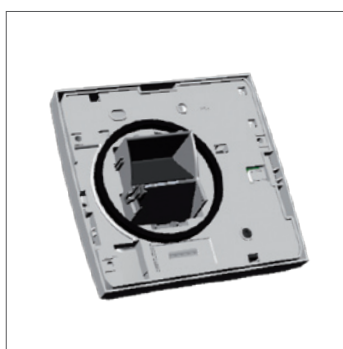
Connections

Spigot versions

Delivered with a Ø100 mm spigot with a removable Ø100-125 mm adaptor, the BXC can be installed on:

- Ø100 mm tube Øint. = 100 mm [+6 ; -0]
- Ø125 mm tube ⁽⁵⁾ Øint. = 125 mm [+1 ; -3]

Note: the Ø100-125 mm adaptor can convert a Ø100 mm version by removing the Ø100 mm seal.



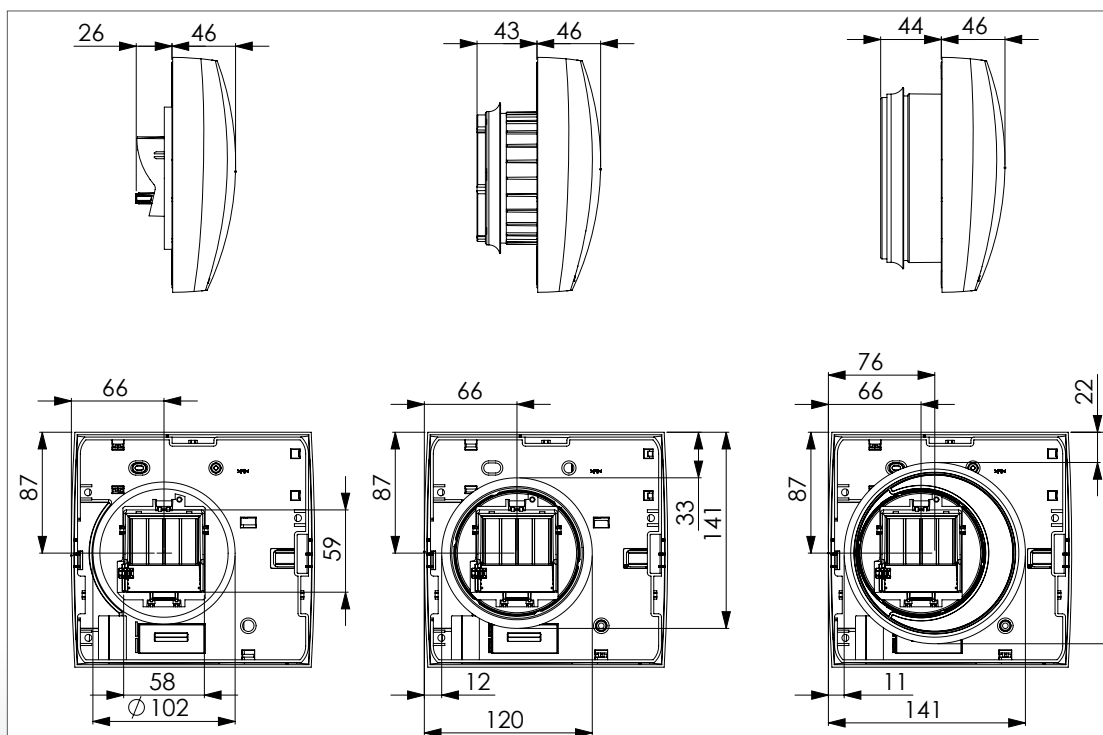
Bracket version



Ø100 mm spigot version



Ø125 mm spigot version



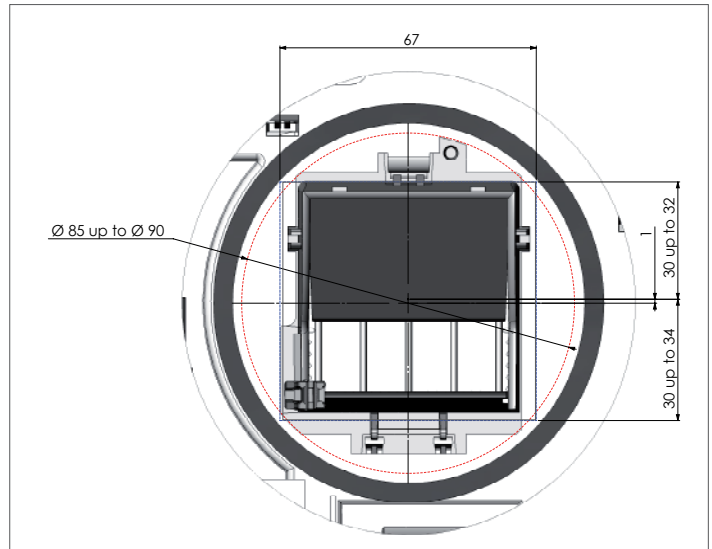
5. The extract unit can recover up to Ø142 mm.

Bracket version

A bracket version is available to recover holes:

- Rectangular: from 67 mm x 60 mm [+1 , -1] up to 60 mm x 67 mm.
- Round: Ø85 mm up to Ø90 mm.

Note: only the specific bracket version can be used in bracket application as it integrates a flat seal.

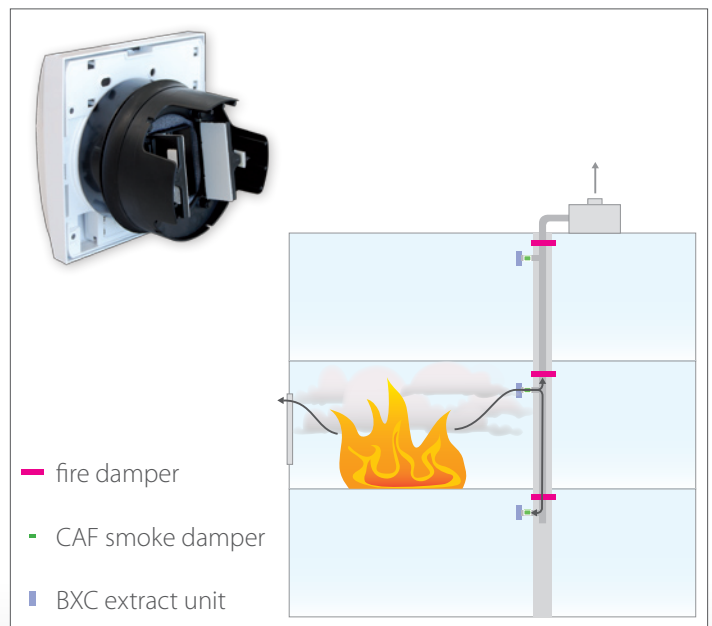


Bracket version - size for mounting on round or circular duct

CAF - smoke damper

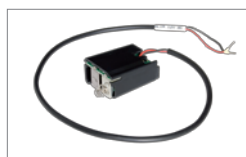
The CAF is an accessory for the BXC air extract unit designed to protect dwellings from the smoke that might be propagated through the ventilation ducts in the event of a fire. When a fire breaks out, smoke may escape through the ducts to the lower stories (the upper stories are protected by fire dampers). The back-pressure then closes the CAF smoke dampers located in the dwellings on the lower stories, thereby preventing the propagation of the smoke. The CAF is specially designed for the BXC air extract unit: its pressure loss is negligible and its operation is perfectly quiet.

Note: the CAF is only available for Ø125 mm duct.



Accessories

- Supply device for 12 VAC . Code CAL261EX
- Ø100-125 mm spigot. Code AEA317EX
- Smoke damper: CAF. Code AEA370EX



Supply device for 12 VAC



Ø100-125 mm spigot

Miscellaneous

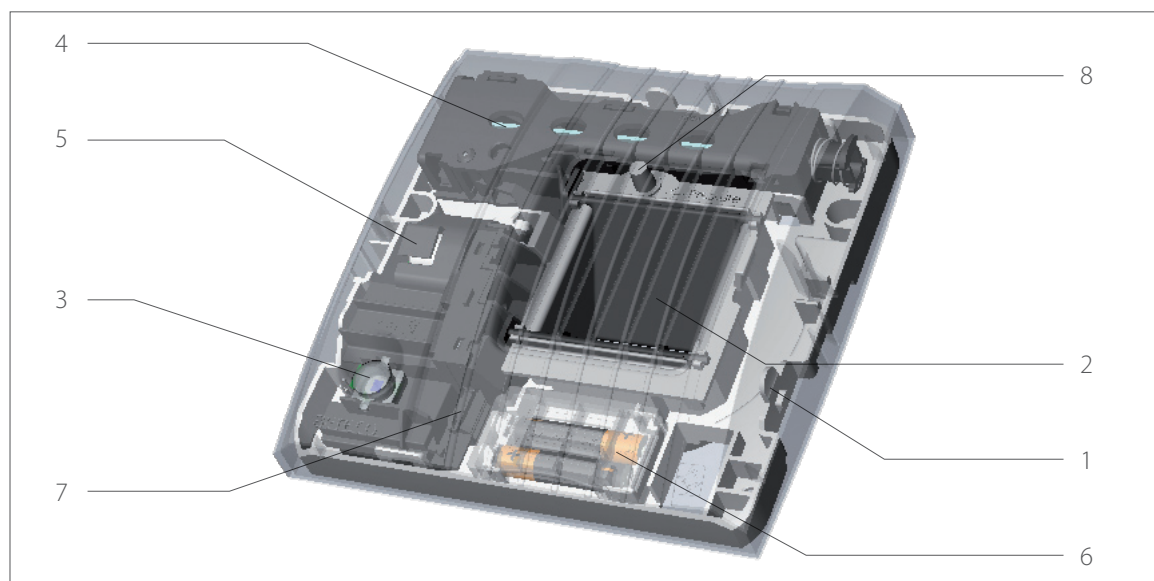
Fire protection

BXC extract unit is compatible with a specific metal plate (not supplied) for fire protection. Please contact Aereco for more details.



Fire metal plate for BXC

Components



Presented version: BXC with presence sensor and humidity sensor

N.	Designation
1	Body
2	Shutters + case
3	Presence sensor
4	Humidity controlled sensor
5	Motor
6	Batteries
7	Electronic card
8	Pressure plug

Miscellaneous

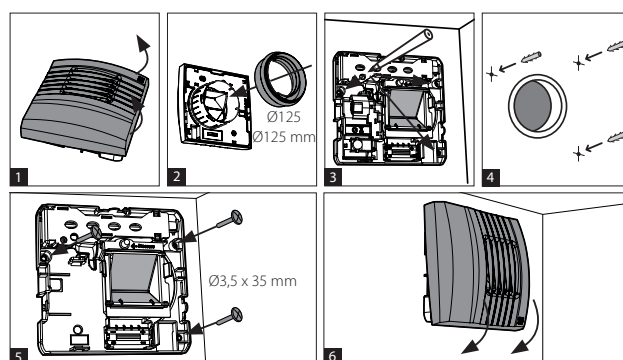
Weight	according to versions, from 280 g up to 450 g
Colour	white
Material	PS (base), ABS (cover)
Dimensions	169 x 174 x 46 mm
Spigot length	45 mm

Installation

Example for the BXC h version:

- 1** Remove the front cover
- 2** Connect the spigot accessory if necessary
- 3 4 5** Fix the body to the wall by the mean of 3 screws
- 6** Clip the front cover to the body

The pressure can be measured using the pressure plug before clipping the front cover.

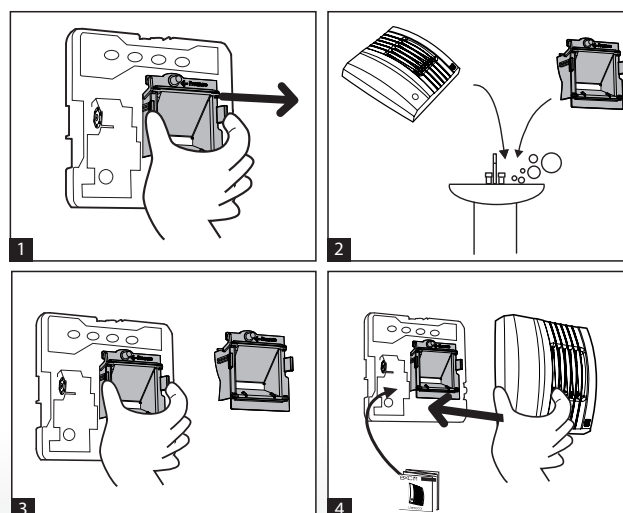


Maintenance

A maintenance notice is accessible and visible by removing the front cover.

Shutter case, shutters and front cover washable in the soap water.

- 1** Once the front cover removed⁶, remove the shutters case from the body
- 2** Wash the front cover and the shutter in soap water (dishwasher forbidden)
- 3** Put back the shutter case in the body
- 4** Clip the front cover to the body



6. The front cover is removable by its top or side.

Packaging

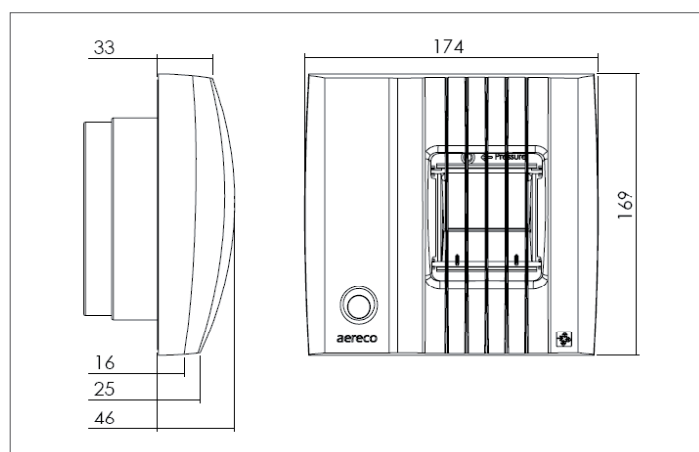
Delivered in unit cardboard.

Certifications and standards

CEM

RoHs

Dimensions



Dimensions given in mm.

