



FLEXIT S12 X/R S20 X/R S30 X/R

E Operating Instructions Air Handling Unit - Cross/Rotor



As there are various automatic control options, the instructions do not contain a description of the automatic control. See separate automatic control documentation.

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1 Safety

CAUTION



Check that the unit is dead before opening it for service or maintenance.

- Only personnel with the relevant technical skills may perform maintenance work.
- The switch for all-pole breaking must be off when the inspection doors are opened and all rotating parts must have stopped.
- Use the unit's service switch to stop the unit. Units with electric heating batteries must run for 3 minutes before stopping so that the battery is cooled down.
- Check that the doors are properly closed after service has been performed.
- If open bosses or short duct(s) are used, the fans must be protected with protective grids.

1.1 Symbols Used

This product has a number of symbols that are used to label the product itself and in the installation and user documentation. Here is an explanation of some of the commonest symbols.



Supply air
SUPPLY AIR



Extract air
EXTRACT AIR



B6
MOISTURE ROD
INSTALLATION



DANGER! ELECTRICITY



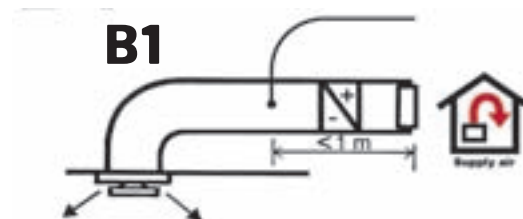
DANGER! DO NOT TOUCH



Exhaust air
EXHAUST AIR



Outdoor air
OUTDOOR AIR



B1
SUPPLY AIR SENSOR



Drain

DRAINAGE OUTLET



CAUTION: When a text bears this symbol, it means that personal injury or serious damage to the equipment may follow if the instructions are not followed.



NB: When a text bears this symbol, damage to equipment or a poor utilisation ratio may be the consequence of not following the instructions.

2 Transporting the Unit

2.1 Lifting

The unit must be lifted using a truck/jack trolley. When using a jack trolley or truck to lift the unit, use equipment that has sufficiently long forks. The forks on the jack trolley/truck should correspond at least to the width of the unit.



2.2 Weight

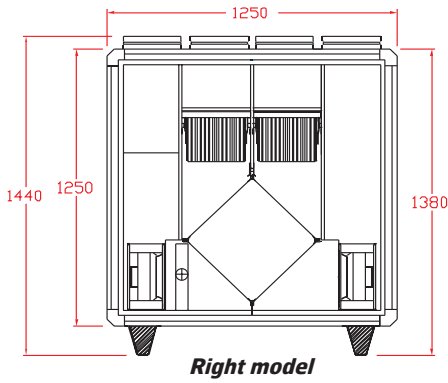
| Data | S12 | | S20 | | S30 | |
|---------------------------------|--------|--------|--------|--------|--------|--------|
| | S12 X | S12 R | S20 X | S20 R | S30 X | S30 R |
| Gross unit weight | 185 kg | 200 kg | 296 kg | 296 kg | 319 kg | 319 kg |
| Fans | 14 kg | 14 kg | 50 kg | 50 kg | 50 kg | 50 kg |
| Heat recovery system | 11 kg | 25 kg | 22 kg | 30 kg | 25 kg | 35 kg |
| Net weight for transport inside | 160 kg | 161 kg | 224 kg | 216 kg | 244 kg | 234 kg |



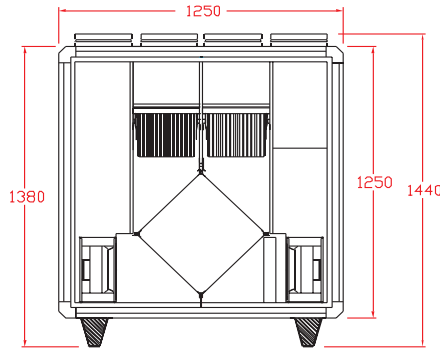
When the exchanger cassette is removed, the moisture rod must be taken out of the cassette and the contact for the bypass motor released.

2.3 Sizes/Physical Dimensions

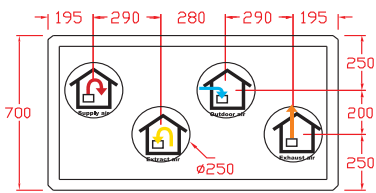
S12 X



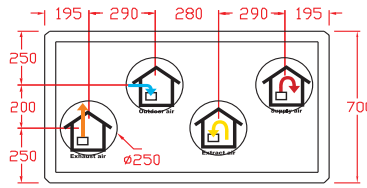
Right model



All measures in mm

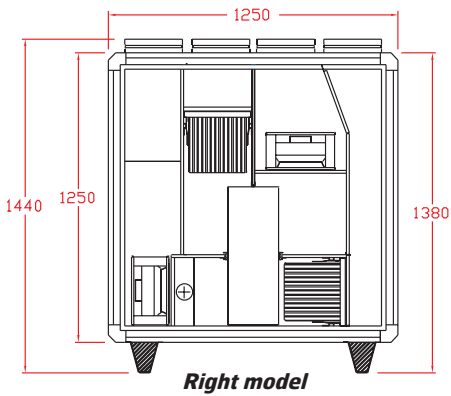


Right model, front

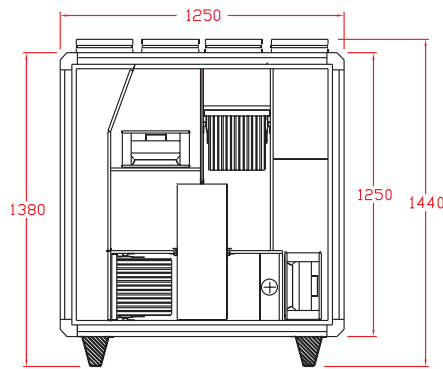


Left model, front

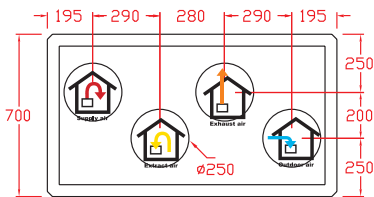
S12 R



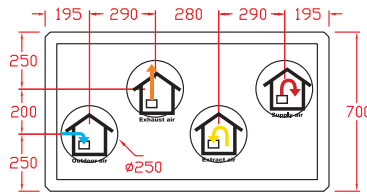
Right model



Left model

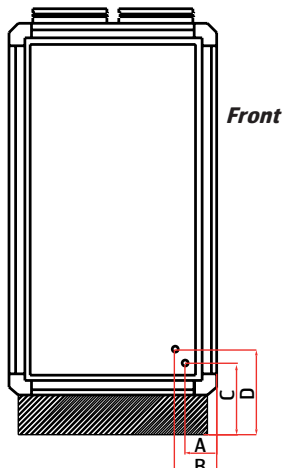


Right model, front



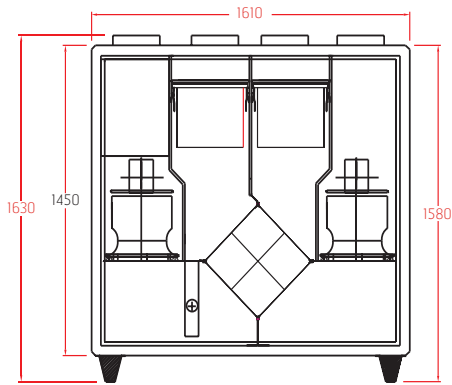
Left model, front

**S12 X/S12 R
Water**



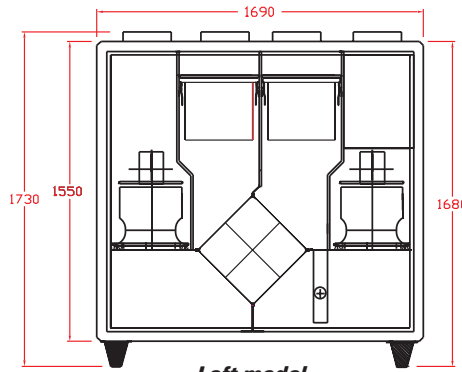
| | Dimensions (mm) (indicated on the figure to the left) | | | |
|-------|---|----|-----|-----|
| | A | B | C | D |
| S12 R | 60 | 80 | 230 | 264 |
| S12 X | 60 | 80 | 230 | 275 |

S20 X



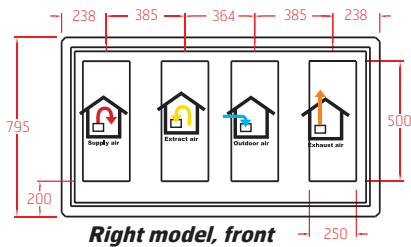
Right model

S30 X

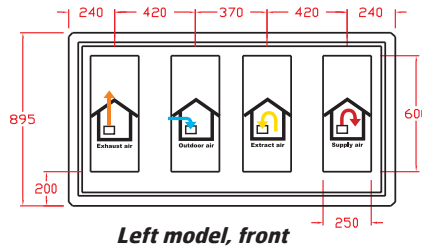


Left model

All measures in mm

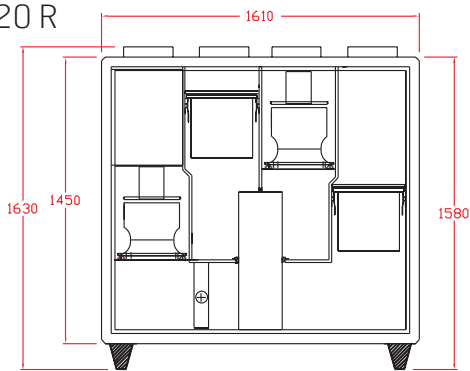


Right model, front



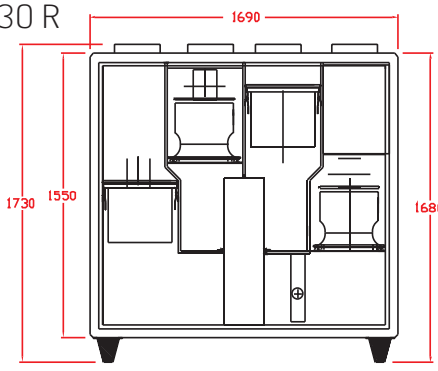
Left model, front

S20 R

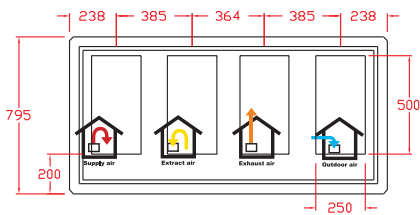


Right model

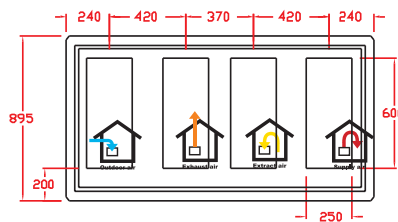
S30 R



Left model

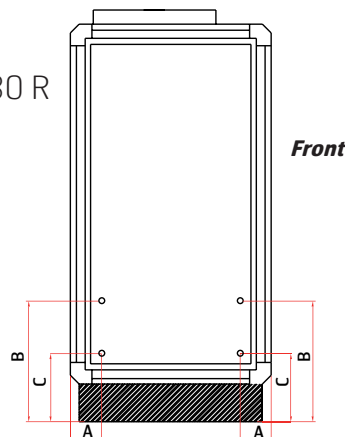


Right model, front



Left model, front

S20 X/S30 X/S20 R/S30 R
Water



Front

| | Dimensions (mm) (indicated on the figure to the left) | | |
|-----|--|-----|-----|
| | A | B | C |
| S20 | 85 | 515 | 225 |
| S30 | 85 | 565 | 225 |

3 Installation



The unit is designed for indoor installation.

3.1 Inspection/Maintenance

The unit must be installed with space for service and maintenance (Fig. 1) such as filter replacement and cleaning the fans and exchanger. It is also important for the unit to be located so that the electrical cabinet is easily accessible for electrical connection, troubleshooting and future component replacement.

3.2 Space Required

| Type | A |
|------|---------|
| S12 | 900 mm |
| S20 | 1000 mm |
| S30 | 1100 mm |

See the separate dimensioned drawing for connection of the water battery (pipe location), Chap. 2.3. These are minimum requirements that only take service needs into account. If other statutory requirements require a greater distance, they must be complied with, for example for electrical safety.

Sound may also be transferred through the floor if the mass and rigidity of the floor are not sufficient. Technical rooms should be fitted with floating concrete floors to prevent sound transfer on account of vibration. When installing the unit, fabric bosses must be fitted between the unit and the duct system. It is also important for the unit not to bear the weight of the ducts. Busbars or water pipes must not prevent the unit from moving freely on the vibration dampers.

3.5 Air Intake/Exhaust

The distance between the air intake and air exhaust must be so great that air circulation is prevented. The fresh air intake must be placed away from traffic/smoke/dust/walls exposed to the sun. The air intake should be placed min. 1 m above ground level to reduce the risk of clogging with snow and leaves. When designing the intake/exhaust chambers, it is necessary to take drainage into account. Follow the suppliers' recommendations for max./min. air flow rates through the intake/exhaust gratings/roof hats.

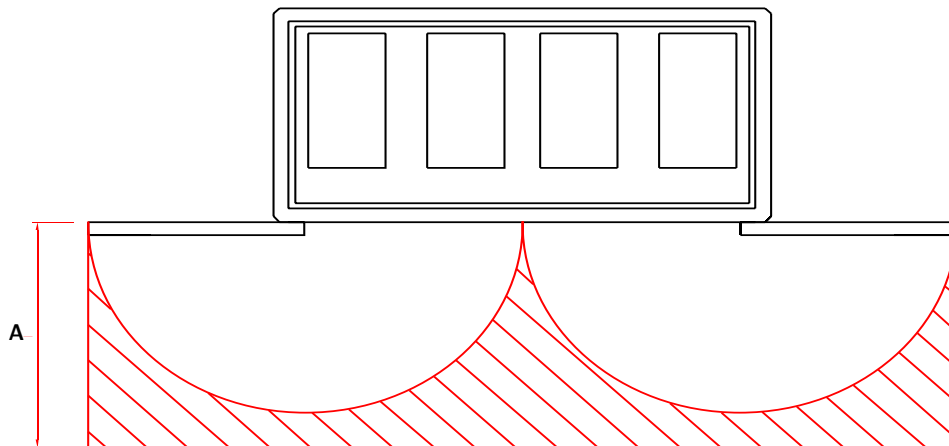


Fig. 1

3.3 Technical Room Requirements

The unit must be placed in a separate technical room with a gully. Ceiling/floor/walls/doors must be in the necessary fire class.

3.4 Recommended Sound Absorption and Sound Transfer

The main silencers must be placed near the unit, preferably in the technical room. The unit should be placed by a wall that has no room on the other side that is sensitive to noise. The unit should not be less than 400 mm from the wall. If the unit is placed against a wall, low-frequency sound may create vibrations in the wall.

3.6 Stop Damper in Air Intake/Exhaust (Accessory)

Used to prevent self-ventilation when the unit is stopped. Must always be used in systems with water batteries as protection against frost.

4 Electrical Works



All electrical works must be performed by an authorised electrician.

- See the separate instructions for the automatic control and its installation.
- See the separate wiring diagram in the unit for external connections.
- See also Chapter 9 Technical Data for more information on electrical wiring.
- A service switch must be installed for all-pole breaking of the supply voltage to the unit. This is not included in the supply from FLEXIT.
- The electrical components must not be exposed to temperatures lower than -23°C or higher than $+55^{\circ}\text{C}$.

4.1 Main Supply (Mains Cable)

The units require just one supply cable.

See the separate table in Chapter 9 Technical Data for the exact dimensions of each unit.

4.2 Connection of External Components

See the separate wiring diagram enclosed with each unit. All electrical connections must be installed by qualified electricians.

4.3 Earth-leakage Circuit-breaker

The frequency converter must be earthed to comply with the regulations concerning high leakage currents (over 3.5 mA). If a line-side earth-leakage circuit-breaker is used as protection in accordance with the installation regulations, an earth-leakage circuit-breaker type B must be installed, which functions even if there are DC components. See the symbol in Fig. 2.



Fig. 2 Earth-leakage symbol



Tighten all terminal blocks before finishing the work to avoid heat generation in the contacts, which may result in fire in the worst case scenario.

5 Plumbing Works

△ All plumbing work must be performed by an authorised plumber.

5.1 Technical Data for Water Batteries

| Unit | Water battery-connection | Pipe connection |
|---------|--------------------------|-----------------|
| S12 X/R | R 1/2" | cu Ø12 |
| S20 X/R | R 3/4" | cu Ø18 |
| S30 X/R | R 3/4" | cu Ø18 |

For further information, please refer to the special estimation program for calculation of technical data for the water battery (www.flexit.com).

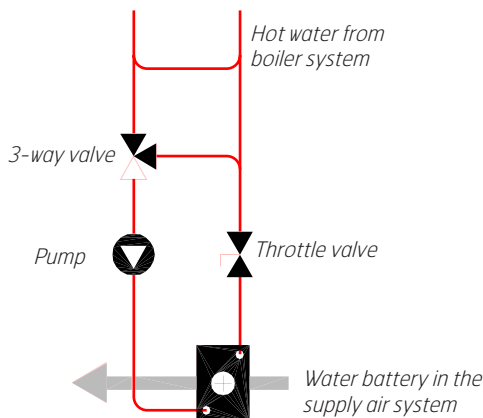


Fig. 3 Recommended connection

5.2 Possible Valve Types

3-way valve, type Honeywell, for capacity:
 1.6 kvs art. no. 56232
 2.5 kvs art. no. 57228
 4.0 kvs art. no. 56283

2-way valve, type Honeywell, for capacity:
 1.6 kvs art. no. 56432
 2.5 kvs art. no. 56433
 4.0 kvs art. no. 56434

5.3 Possible Valve Motor

It is necessary to use a valve motor that is controlled by 0-10 V, where 10 V=100 % open.
 Valve motor article number: 56234.

5.4 Connections

△ Before connecting the water battery, it is necessary to check that the inspection doors are accessible and there is space enough to change the water battery.

Use the recommended connection (see Fig. 3) unless specified otherwise. The water supply must be at the bottom of the water battery - the return must be on the top.

Place the adjustment valve as close to the unit as possible. (Please note that many valve motors can go in both directions and this can be set on the motor. Set it so that the valve opens on an increasing 0-10 V signal.)

If you use a water battery that has not had glycol (or another antifreeze) added, the unit should be in a heated room on account of the risk of frost in the battery. Install air dampers with spring-loaded return for outdoor air. Place the unit close to a gully to avoid damage caused by any water leaks.

Install pipe routes to the water battery so that there is free access to the motor and recovery system. Remember vibration damping for water pipes.

You can see the location of pipes out of the unit in the dimensioned drawings in Chap. 2.3.

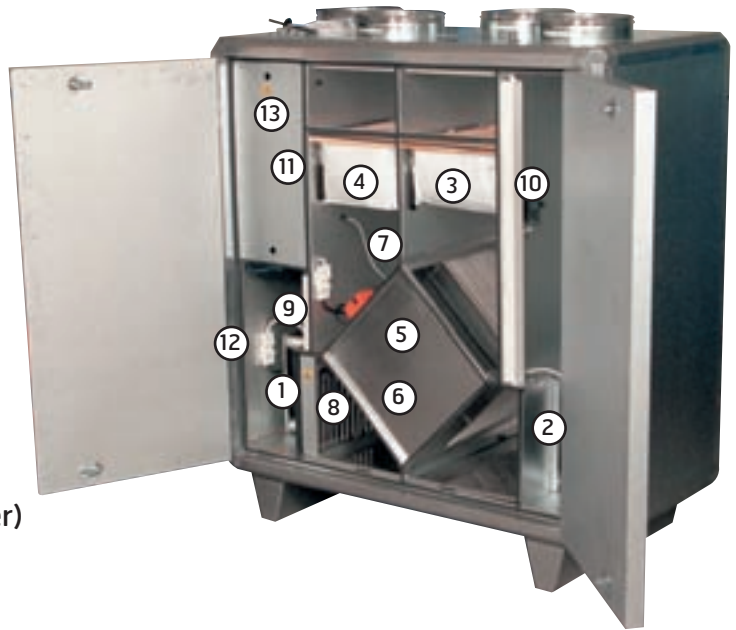
△ Install the water battery so that there is free access to the motor and exchanger cassette.
Pipe routes for water pipes:
Remember vibration damping for water pipes.

6 General Drawings and System Drawings

6.1 Cross Heat Exchanger

General Drawing - Cross Heat Exchanger

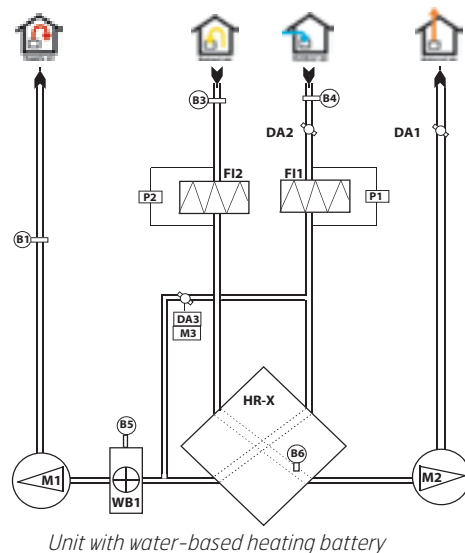
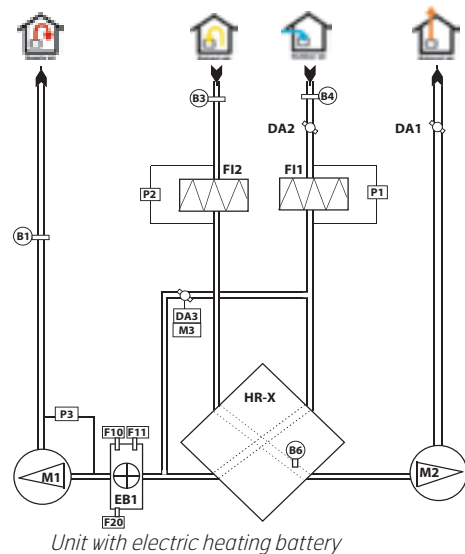
- 1 (M1) Supply air fan
- 2 (M2) Extract air fan
- 3 (F11) Supply air filter
- 4 (F12) Extract air filter
- 5 (HR-X) Cross heat exchanger
- 6 (M3) Bypass motor
- 7 (B6) Thermoguard
- 8 (EB1/WB1) Heating battery (electricity or water)
- 9 (F10-19) Reset overheating thermostat*
- 10 (P1) Supply air filter guard
- 11 (P2) Extract air filter guard
- 12 (P3) Supply air fan pressure guard*
- 13 Connection box with automatic control



System Drawing - Cross Heat Exchanger/Electric and Water Batteries

- M1 Supply air fan
- M2 Extract air fan
- M3 Bypass motor
- F11 Supply air filter
- F12 Extract air filter
- HR-X Cross heat exchanger
- P1 Supply air filter guard
- P2 Extract air filter guard
- P3 Supply air fan pressure guard *
- B1 Supply air temperature sensor
- B3 Extract air temperature sensor (not standard)
- B4 Outdoor air temperature sensor
- B5 Water battery temperature sensor (frost guard)
- B6 Thermoguard temperature sensor
- F10, F11 Overheating thermostat, manual reset *
- F20 Overheating thermostat *
- DA1 Air damper, exhaust air (not standard)
- DA2 Air damper, outdoor air (not standard)
- DA3 Air damper, heat exchanger
- WB1 Heating battery, water
- EB1 Heating battery, electric

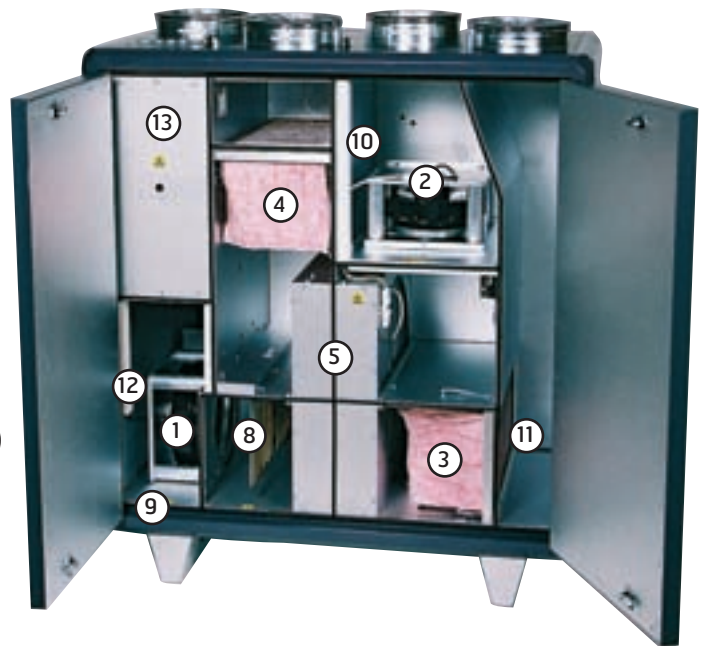
* Only with an electric battery



6.2 Rotor Heat Exchanger

General Drawing - Rotor Heat Exchanger

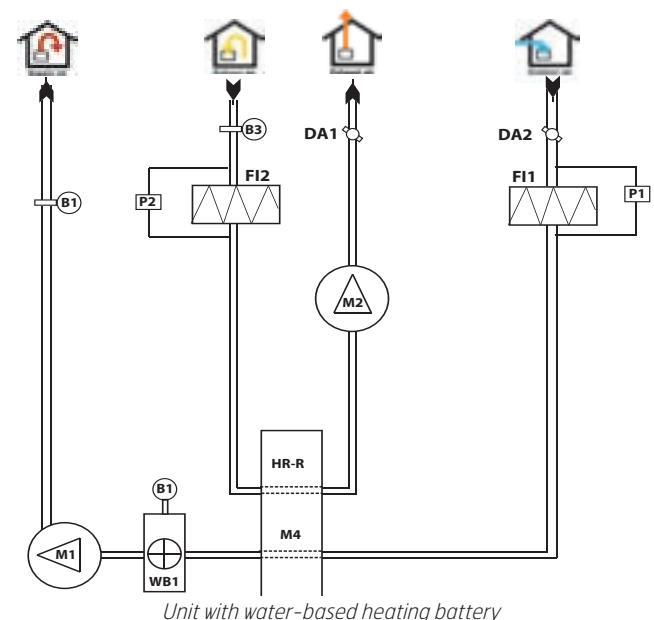
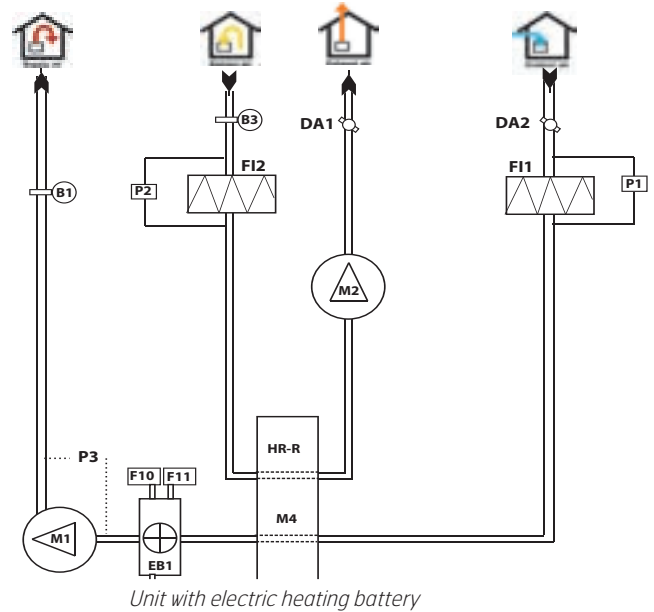
- 1 (M1) Supply air fan
- 2 (M2) Extract air fan
- 3 (F11) Supply air filter
- 4 (F12) Extract air filter
- 5 (HR-R) Rotor heat exchanger
- 6 (M3) Bypass motor
- 7 (B6) Thermoguard
- 8 (EB1/WB1) Heating battery (electricity or water)
- 9 (F10-19) Reset overheating thermostat*
- 10 (P1) Extract air filter guard
- 11 (P2) Supply air filter guard
- 12 (P3) Supply air fan pressure guard*
- 13 Connection box with automatic control



System Drawing - Rotor Heat Exchanger/Electric and Water Batteries

- M1 Supply air fan
- M2 Extract air fan
- M3 Bypass motor
- F11 Supply air filter
- F12 Extract air filter
- HR-R Rotor heat exchanger
- P1 Supply air filter guard
- P2 Extract air filter guard
- P3 Supply air fan pressure guard *
- B1 Supply air temperature sensor
- B3 Extract air temperature sensor (not standard)
- B4 Outdoor air temperature sensor
- B5 Water battery temperature sensor (frost guard)
- B6 Thermoguard temperature sensor
- F10, F11 Overheating thermostat, manual reset *
- F20 Overheating thermostat *
- DA1 Air damper, exhaust air (not standard)
- DA2 Air damper, outdoor air (not standard)
- DA3 Air damper, heat exchanger
- WB1 Heating battery, water
- EB1 Heating battery, electric

* Only with an electric battery



7 Adjustment, Capacity and Sound Data



The units have separate pressure measurement outlets. They are labelled on the unit. The S20 and S30 have outlets on the top of the unit.

The following formula is used:

$$Q = k \cdot \sqrt{\Delta P}$$

Q = Air flow rate (m³/h)

k = Factor

ΔP = Pressure read off (Pa)

K-factor:

| | |
|-----|----|
| S12 | 60 |
| S20 | 80 |
| S30 | 96 |

Example:

Unit S30

Required: 2500 m³/h

S30 has k-factor=96

Use formula: $Q = k \cdot \sqrt{P}$

$$2500 = 96 \sqrt{\Delta P}$$

$$\frac{2500}{96} = \frac{96 \cdot \sqrt{\Delta P}}{96}$$

$$26 = \sqrt{\Delta P}$$

$$(26)^2 = \Delta P$$

$$678 = \Delta P$$

- Connect the pressure meter
- Adjust the fan until 678 Pa is displayed on the instrument

You have now adjusted the S30 unit to a capacity of 2500 m³/h.

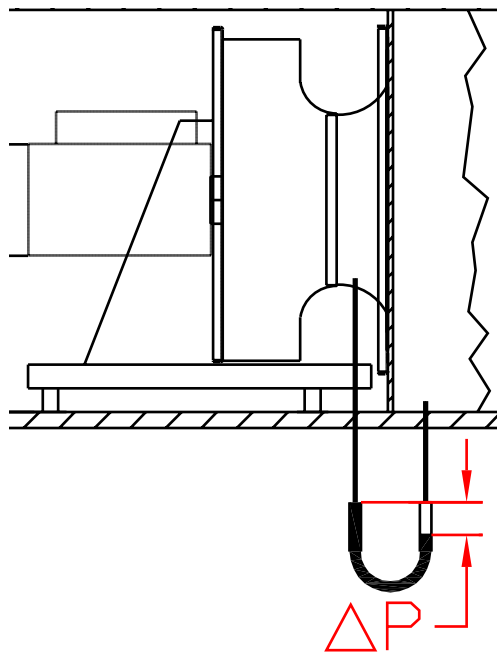
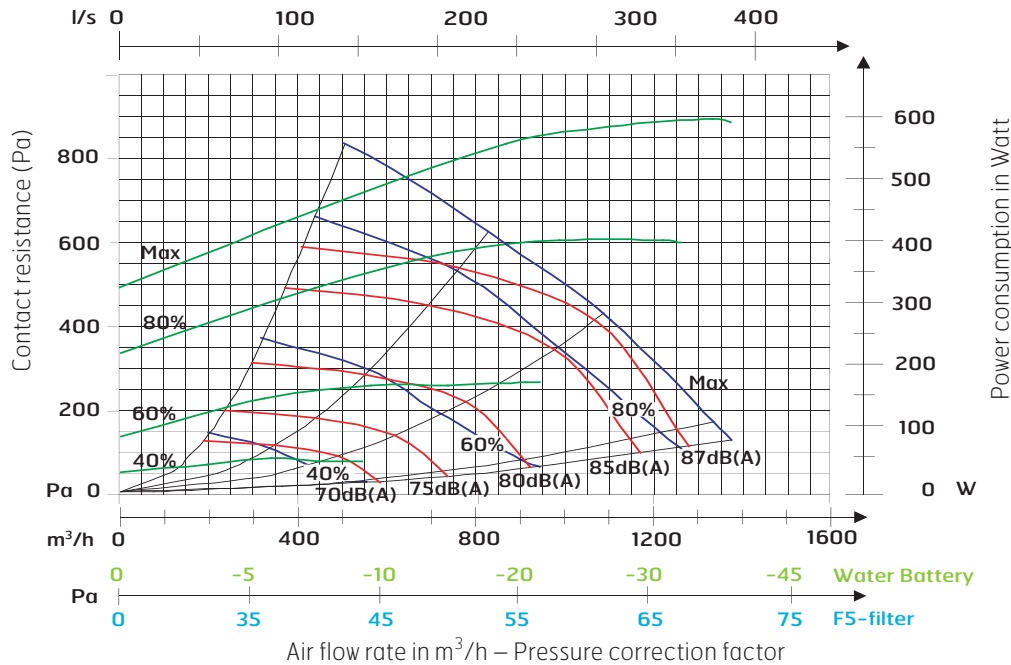


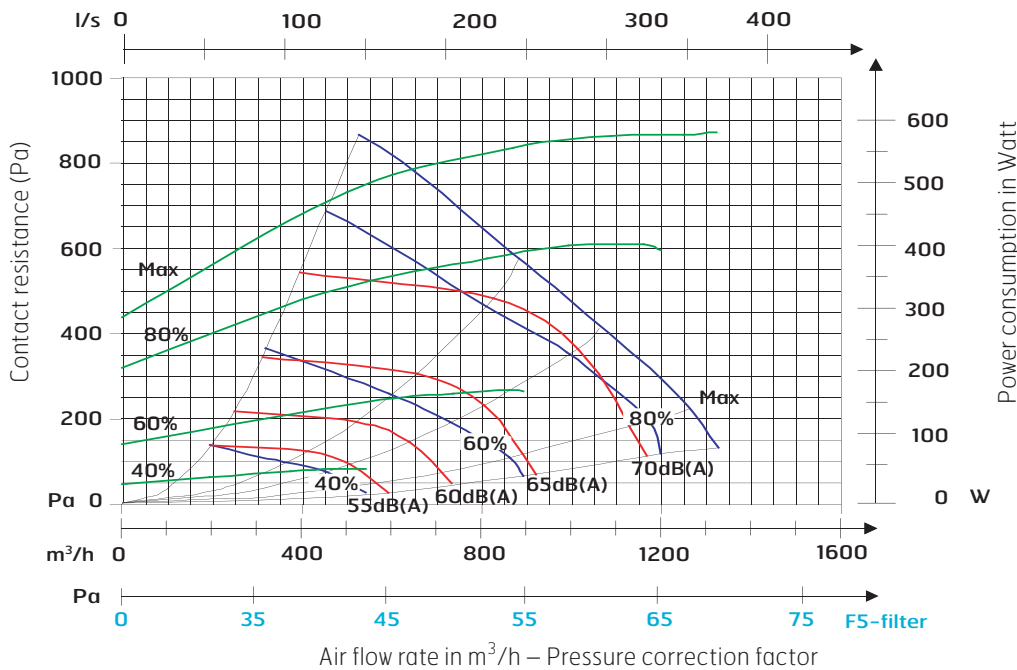
Fig. 4 Schematic diagram

7.1 Capacity Diagram, Sound Data, Specifications - Flexit S12 X EC W/E

Supply air side (with F7 filter)



Extract air side (with F7 filter)



Sound data is given at sound power level LwA in the capacity diagrams and is corrected with the table below for the various octave bands. Radiated noise produces Lw in the various octave bands and total LwA. This is read directly from the supply air table.

Correction factor for LwA

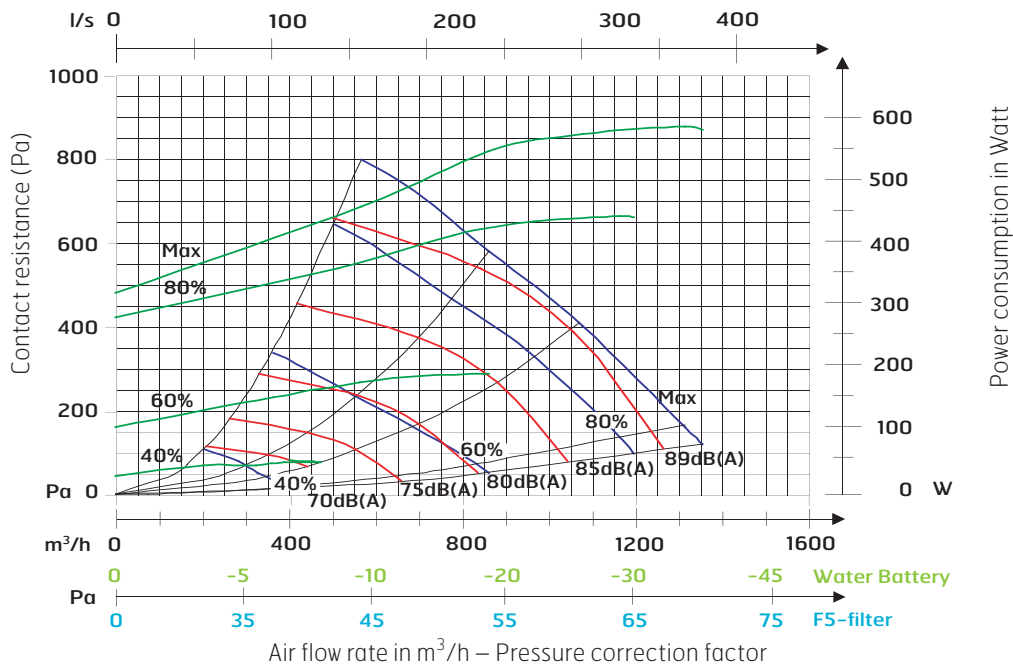
| Hz | 63 | 125 | 250 | 500 | 1000 | 2000 | 4000 | 8000 | LwA |
|-------------|-----|-----|-----|-----|------|------|------|------|-------|
| Supply air | -3 | -2 | -1 | 0 | -8 | -10 | -16 | -30 | |
| Extract air | 11 | 6 | -1 | 0 | -8 | -15 | -27 | -40 | |
| Radiated | -40 | -41 | -37 | -45 | -43 | -42 | -45 | -54 | -36,6 |

Data for supply air is measured in accordance with ISO 5136, the "In duct method". Radiated noise is measured in accordance with ISO 9614-2. Bruel & Kjaer measuring equipment, type 2260.

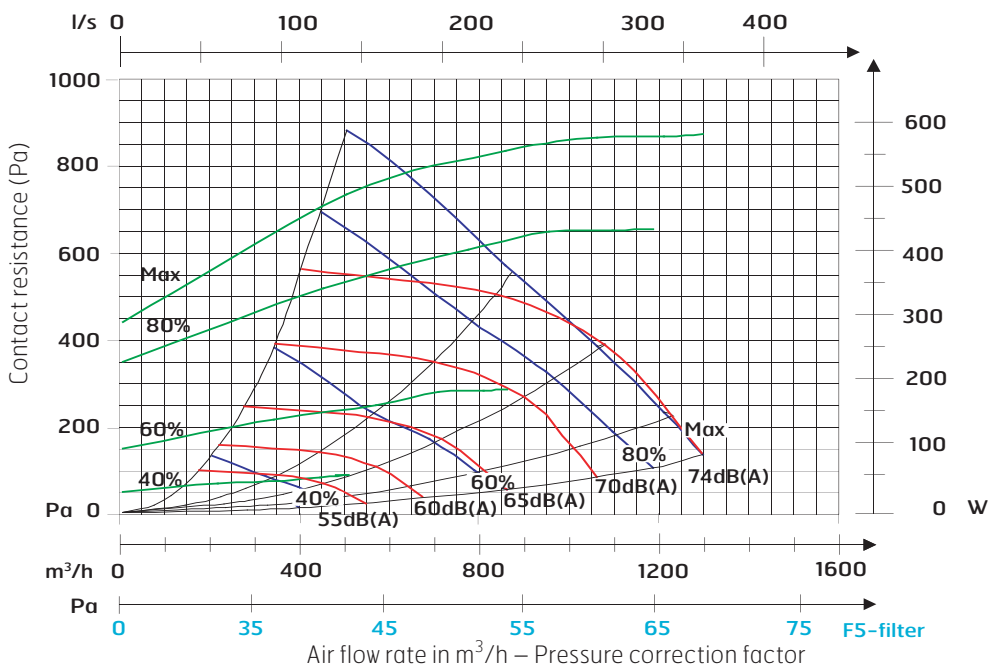
- Blue curves: Air capacity at various capacity settings in Volt.
- Green curves: Supply air fan power consumption at various capacity settings.
- Red curves: Sound power level LwA, cf. correction table.
- Light blue correction axis: Pressure increase using an EU-5 filter.
- Light green correction axis: Pressure reduction using a water battery.

7.2 Capacity Diagram, Sound Data, Specifications - Flexit S12 R EC W/E

Supply air side (with F7 filter)



Extract air side (with F7 filter)



Sound data is given at sound power level LwA in the capacity diagrams and is corrected with the table below for the various octave bands. Radiated noise produces Lw in the various octave bands and total LwA. This is read directly from the supply air table.

Correction factor for LwA

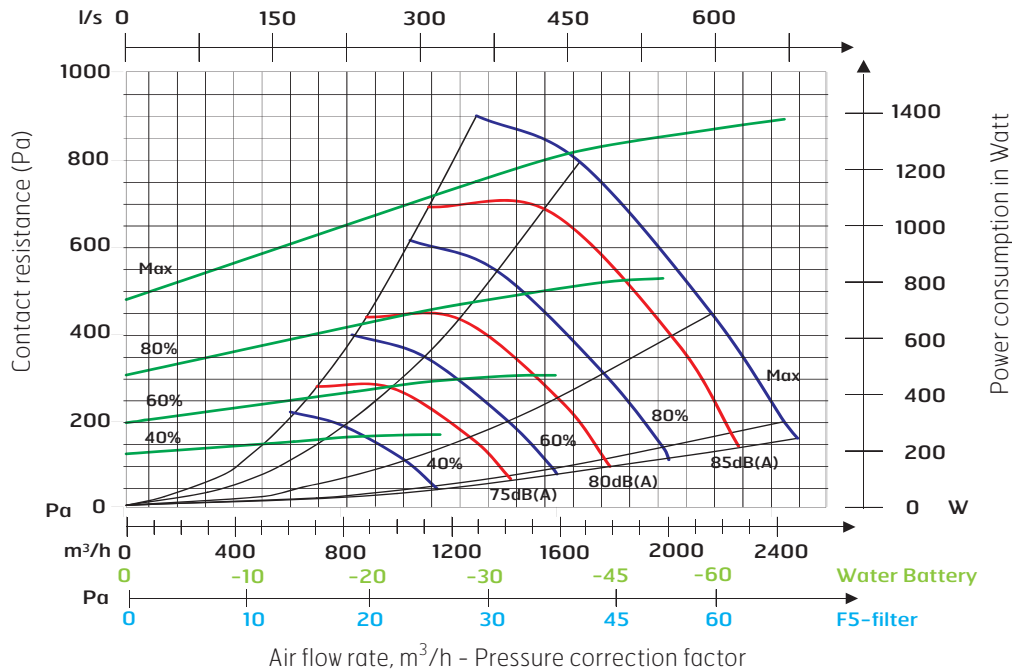
| Hz | 63 | 125 | 250 | 500 | 1000 | 2000 | 4000 | 8000 | LwA |
|-------------|-----|-----|-----|-----|------|------|------|------|-------|
| Supply air | -5 | -3 | -2 | 0 | -7 | -10 | -17 | -30 | |
| Extract air | 10 | 7 | 1 | 0 | -13 | -19 | -30 | -42 | |
| Radiated | -40 | -41 | -37 | -45 | -43 | -42 | -45 | -54 | -36,6 |

Data for supply air is measured in accordance with ISO 5136, the "In duct method". Radiated noise is measured in accordance with ISO 9614-2. Bruel & Kjaer measuring equipment, type 2260.

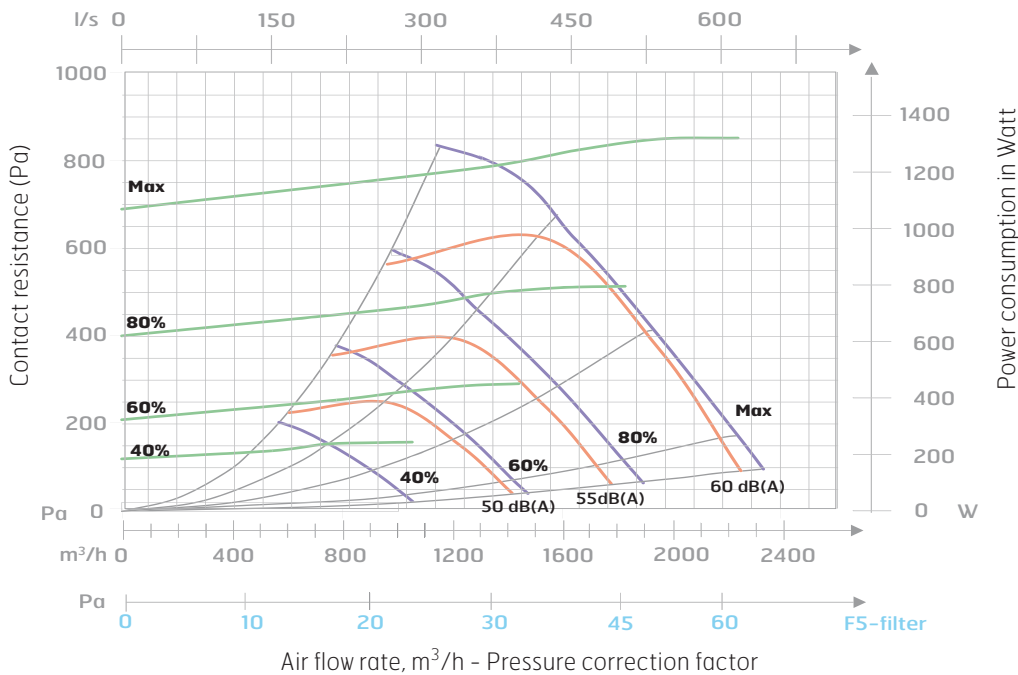
- Blue curves: Air capacity at various capacity settings in Volt.
- Green curves: Supply air fan power consumption at various capacity settings.
- Red curves: Sound power level LwA, cf. correction table.
- Light blue correction axis: Pressure increase using an EU-5 filter.
- Light green correction axis: Pressure reduction using a water battery.

7.3 Capacity Diagram, Sound Data, Specifications - Flexit S20 X W/E

Supply air side (with F7 filter)



Extract air side (with F7 filter)



Sound data is given at sound power level LwA in the capacity diagrams and is corrected with the table below for the various octave bands (Lw). Radiated noise produces Lw in the various octave bands and total LwA. This is read directly from the supply air table.

Correction factor for Lw

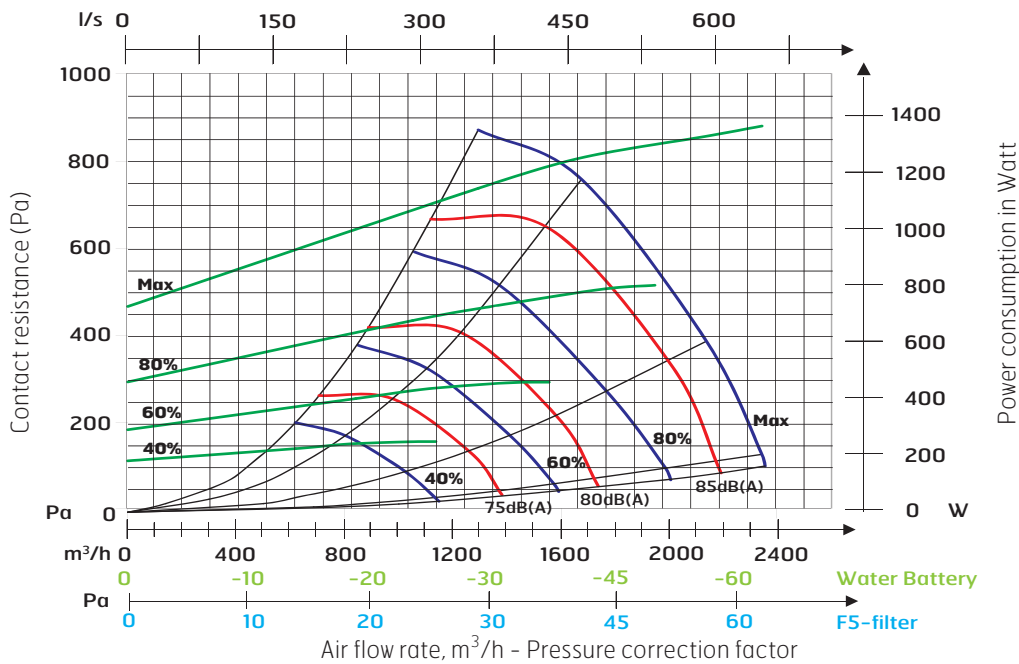
| Hz | 63 | 125 | 250 | 500 | 1000 | 2000 | 4000 | 8000 | LwA |
|-------------|-----|-----|-----|-----|------|------|------|------|-----|
| Supply air | -2 | -7 | 4 | -4 | -6 | -14 | -23 | -37 | |
| Extract air | 21 | 10 | 3 | -3 | -15 | -27 | -32 | -41 | |
| Radiated | -35 | -29 | -27 | -28 | -27 | -28 | -31 | -46 | -22 |

Data for supply air is measured in accordance with ISO 5136, the "In duct method". Radiated noise is measured in accordance with ISO 9614-2. Bruel & Kjaer measuring equipment, type 2260.

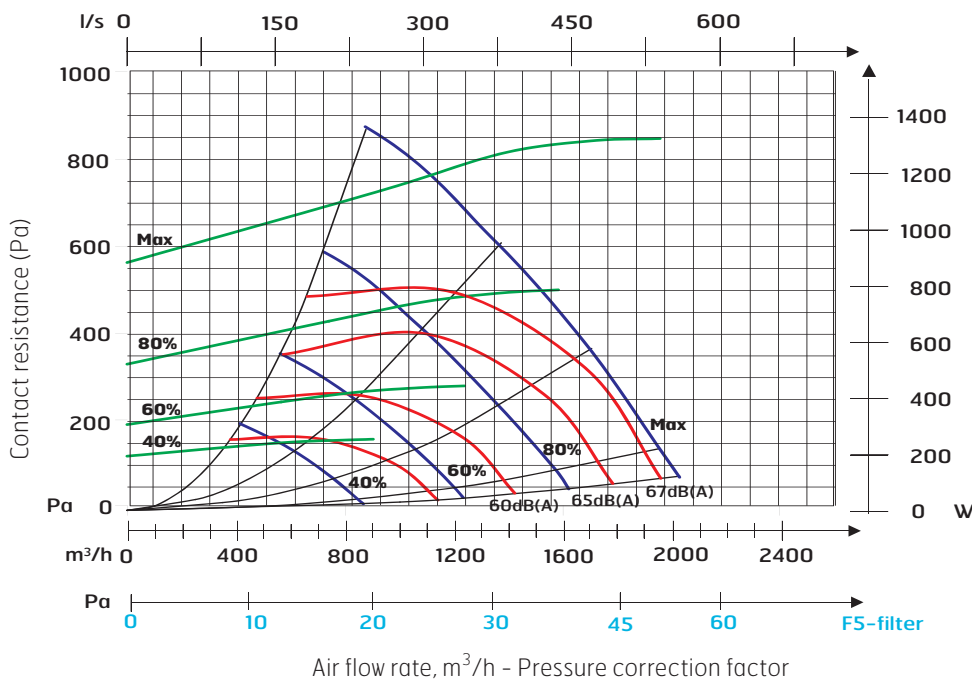
- Blue curves: Air capacity at various capacity settings in Volt.
- Green curves: Supply air fan power consumption at various capacity settings.
- Red curves: Sound power level LwA, cf. correction table.
- Light blue correction axis: Pressure increase using an F5 filter.
- Light green correction axis: Pressure reduction using a water battery.

7.4 Capacity Diagram, Sound Data, Specifications - Flexit S20 R W/E

Supply air side (with F7 filter)



Extract air side (with F7 filter)



Sound data is given at sound power level L_{wA} in the capacity diagrams and is corrected with the table below for the various octave bands (L_w). Radiated noise produces L_w in the various octave bands and total L_{wA} . This is read directly from the supply air table.

Correction factor for L_w

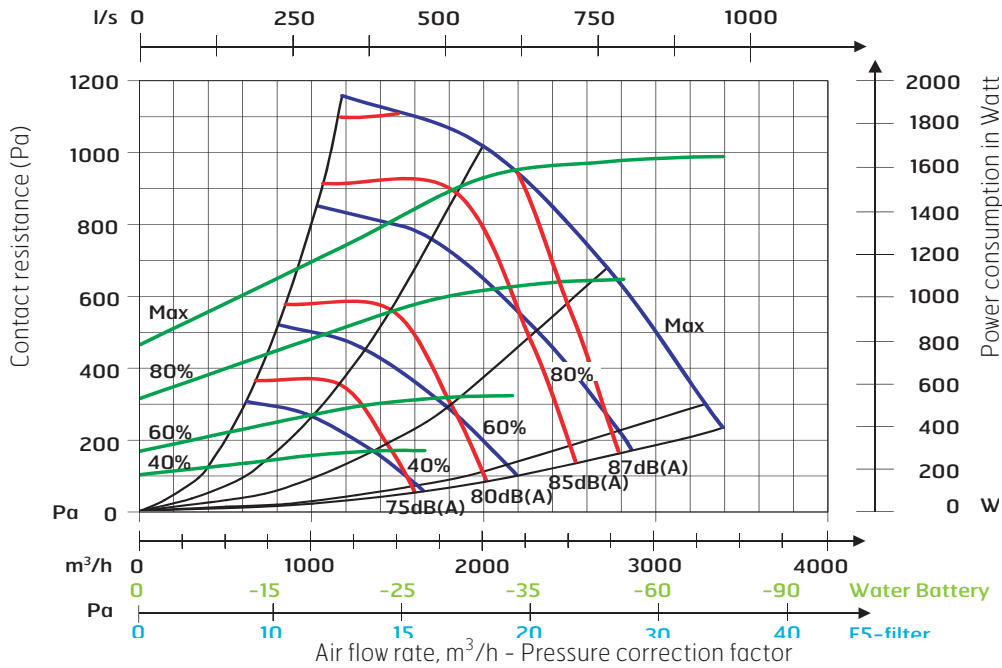
| Hz | 63 | 125 | 250 | 500 | 1000 | 2000 | 4000 | 8000 | L_{wA} |
|-------------|-----|-----|-----|-----|------|------|------|------|----------|
| Supply air | -2 | -7 | 4 | -4 | -6 | -14 | -23 | -37 | |
| Extract air | 15 | 11 | 4 | -3 | -23 | -33 | -39 | -48 | |
| Radiated | -35 | -29 | -27 | -28 | -27 | -28 | -31 | -46 | -22 |

Data for supply air is measured in accordance with ISO 5136, the "In duct method". Radiated noise is measured in accordance with ISO 9614-2. Bruel & Kjaer measuring equipment, type 2260.

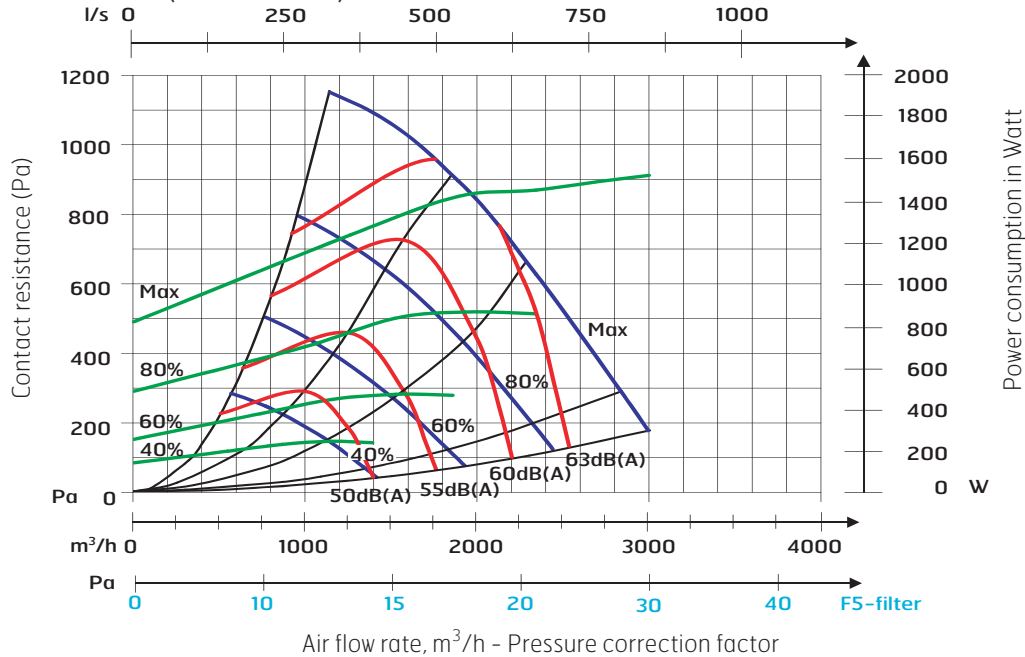
- Blue curves: Air capacity at various capacity settings in Volt.
- Green curves: Supply air fan power consumption at various capacity settings.
- Red curves: Sound power level L_{wA} , cf. correction table.
- Light blue correction axis: Pressure increase using an F5 filter.
- Light green correction axis: Pressure reduction using a water battery.

7.5 Capacity Diagram, Sound Data, Specifications - Flexit S30 X W/E

Supply air side (with F7 filter)



Extract air side (with F7 filter)



Sound data is given at sound power level LwA in the capacity diagrams and is corrected with the table below for the various octave bands (Lw). Radiated noise produces Lw in the various octave bands and total LwA. This is read directly from the supply air table.

Correction factor for Lw

| Hz | 63 | 125 | 250 | 500 | 1000 | 2000 | 4000 | 8000 | LwA |
|-------------|-----|-----|-----|-----|------|------|------|------|------------|
| Supply air | 4 | -1 | 1 | -1 | -5 | -13 | -24 | -35 | |
| Extract air | 22 | 12 | -1 | -6 | -19 | -30 | -35 | -42 | |
| Radiated | -34 | -26 | -25 | -34 | -36 | -33 | -39 | -48 | -28 |

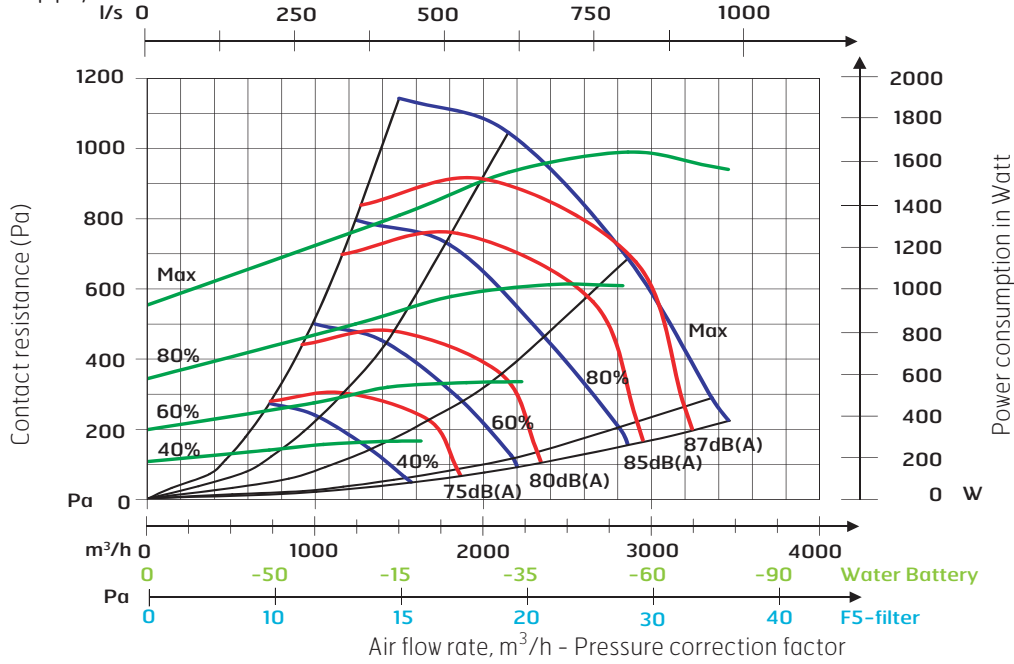
Data for supply air is measured in accordance with the ISO 5136 "In duct method". Radiated noise is measured in accordance with ISO 9614-2.

Bruel & Kjaer measuring equipment, type 2260.

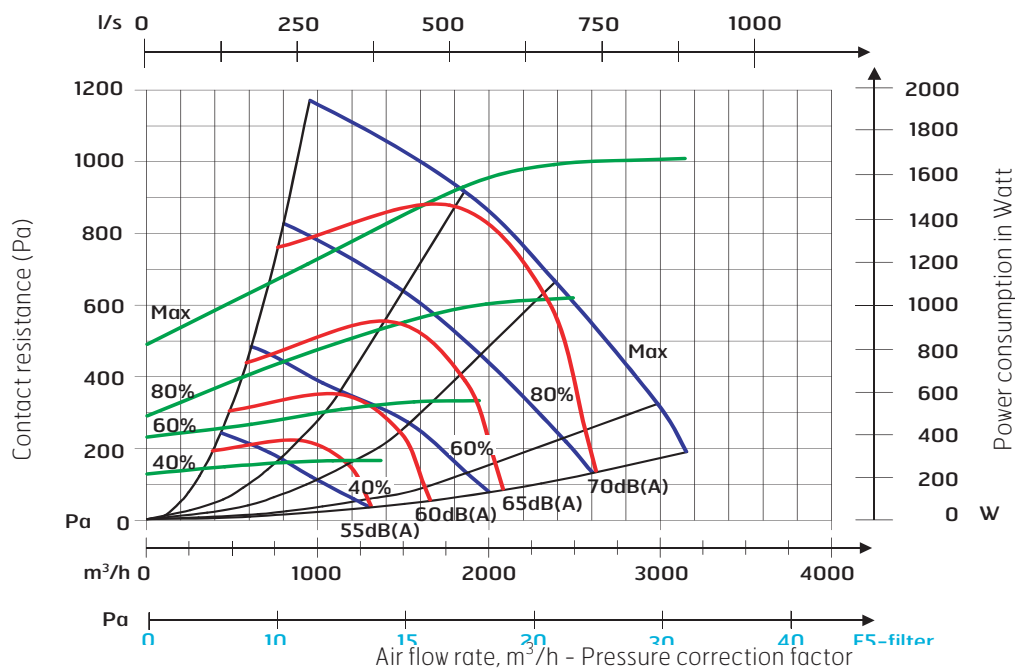
- Blue curves: Air capacity at various capacity settings in Volt.
- Green curves: Supply air fan power consumption at various capacity settings.
- Red curves: Sound power level LwA, cf. correction table.
- Light blue correction axis: Pressure increase using an F5 filter.
- Light green correction axis: Pressure reduction using a water battery.

7.6 Capacity Diagram, Sound Data, Specifications - Flexit S30 R W/E

Supply air side (with F7 filter)



Extract air side (with F7 filter)



Sound data is given at sound power level LwA in the capacity diagrams and is corrected with the table below for the various octave bands (Lw). Radiated noise produces Lw in the various octave bands and total LwA. This is read directly from the supply air table.

Correction factor for Lw

| Hz | 63 | 125 | 250 | 500 | 1000 | 2000 | 4000 | 8000 | LwA |
|-------------|-----|-----|-----|-----|------|------|------|------|-----|
| Supply air | 1 | -1 | 2 | -1 | -6 | -14 | -24 | -37 | |
| Extract air | 15 | 11 | 5 | -5 | -24 | -35 | -38 | -46 | |
| Radiated | -34 | -26 | -25 | -34 | -37 | -33 | -39 | -48 | -28 |

Data for supply air is measured in accordance with ISO 5136, the "In duct method". Radiated noise is measured in accordance with ISO 9614-2. Bruel & Kjaer measuring equipment, type 2260.

- Blue curves: Air capacity at various capacity settings in Volt.
- Green curves: Supply air fan power consumption at various capacity settings.
- Red curves: Sound power level LwA, cf. correction table.
- Light blue correction axis: Pressure increase using an F5 filter.
- Light green correction axis: Pressure reduction using a water battery.

8 Maintenance

You should inspect the system regularly. This must be performed by qualified operating personnel. The inspection should be performed twice a year, preferably in the spring and autumn. If the unit has a cross heat exchanger, you should check for leaks in the drain or water on the floor. If a water battery is used to heat the air, check also for water leaks. Listen for strange sounds and check for abnormal vibrations. Check at regular intervals that the air intake is free of snow and leaves. The inspection and maintenance of fans, exchanger cassettes, air dampers, filters and heating batteries are essential to achieve optimal performance.

Exchanger cassette:

As the system has filters installed with a high density class, it is not normally necessary to clean the exchanger cassette. If, for various reasons, it should still be necessary, dust can be removed with a soft brush. Further cleaning is possible if you remove the exchanger cassette, spray it with fat-soluble detergent and then blow it clean from the opposite side. Distance approximately 60 mm and max. pressure 80 bar.

NB ! Do not use detergent that is harmful to aluminium.

Rotor:

As the system has filters installed with a high density class, it is not normally necessary to clean the rotor. If, for various reasons, it should still be necessary, dust can be removed with a soft brush. Further cleaning is possible if you remove the rotor, spray it with fat-soluble detergent and then blow it clean from the opposite side. Distance approximately 60 mm and max. pressure 80 bar.

NB ! Do not use detergent that is harmful to aluminium and the environment.

Check the drive belt and tighten it if necessary. Ensure that all seals around the rotor are intact and tight.

Air dampers:

The air damper plates are suspended in plastic bearings and do not need lubrication. The individual air damper plates are connected via an arm system that does not need lubrication. Check every year that the air damper is tight. If the air damper is not properly tight, it can be corrected by adjusting the air damper motor or possibly adjusting the arm tension.

Filters:

How frequently filters need replacing depends on the dust concentration in the air that passes through the filters. It is very important to replace filters to ensure that the system works properly. Filters must be replaced when the filter replacement lamp on the control panel lights up. They must be replaced at least once a year.

Heating battery:

The heating battery, electric or water-based, will be exposed to dirt very rarely, as the system has filters fitted with a high density class. If cleaning should still be necessary, you can use compressed air, which is blown in the opposite direction to the air flow, or a vacuum cleaner with a soft nozzle. Cleaning must be done carefully to ensure that the battery's fins are not damaged. Inspect the cables to the electric battery at least twice a year. Check for damaged cables and components. Tighten all terminal blocks for power supply to the electric battery (elements, contactors, SSR) and other terminal blocks.

Corrosion damage: If there is corrosion damage to fins or pipes, this may indicate moisture or corrosive air. The cause must be found and remedied.

8.1 Troubleshooting

| Fault | Remedial action | Component |
|------------------------------|--|---|
| The unit does not start | <ol style="list-style-type: none"> 1. Check the fuses and that there is power to the unit 2. Check the control panels in case the unit has stopped on account of an alarm or the service switch is off 3. Check that the unit is not in STOP mode | Fuses, overheating protection, motor protection or frost sensor |
| The heating does not come on | <ol style="list-style-type: none"> 1. Check that the pressure guard is OK (only with an electric battery) 2. Check that the valve has control current (over 2 V) and supply voltage 3. Check the temperature sensors | Pressure guard Sensors Valve |
| The fans do not start | <ol style="list-style-type: none"> 1. Check the operating setting 2. Check that the fans have operating voltage and control current (over 2 V) 3. Check that the motor protection is not active | Motor protection |

9 Technical Specifications

9.1 Technical Specifications, S12 X

| | S12 X | |
|-------------------------------|----------------|----------------|
| | S12 XW | S12 XE |
| Rated voltage | 230 V | 400 V |
| Fuse | 1x10 A | 3x16 A |
| Rated current, total | 9 A | 16 A |
| Rated power, total | 1100 W | 7100 W |
| Rated power, electric battery | | 6000 W |
| Rated power, fans | 2x485 W | 2x485 W |
| Rated preheating power | | |
| Fan type | B-wheel | B-wheel |
| Fan motor control | EC control | EC control |
| Max. fan speed | 2500 RPM | 2500 RPM |
| Filter type (SUP/EXTR) | F 7 | F 7 |
| Filter dimensions (WxHxD, mm) | 592x294x250 mm | 592x294x250 mm |
| Number of bags | 12 | 12 |
| Weight | 185 kg | 185 kg |
| Duct connection | Dia. 250 mm | Dia. 250 mm |
| Height | 1380 mm | 1380 mm |
| Width | 1250 mm | 1250 mm |
| Depth | 700 mm | 700 mm |

9.2 Technical Specifications, S12 R

| | S12 R | |
|-------------------------------|----------------|----------------|
| | S12 RW | S12 RE |
| Rated voltage | 230 V | 400 V |
| Fuse | 1x10 A | 3x16 A |
| Rated current, total | 9 A | 16 A |
| Rated power, total | 1100 W | 7100 W |
| Rated power, electric battery | | 6000 W |
| Rated power, fans | 2x485 W | 2x485 W |
| Rated preheating power | | |
| Fan type | B-wheel | B-wheel |
| Fan motor control | EC control | EC control |
| Max. fan speed | 2500 RPM | 2500 RPM |
| Filter type (SUP/EXTR) | F 7 | F 7 |
| Filter dimensions (WxHxD, mm) | 592x294x250 mm | 592x294x250 mm |
| Number of bags | 12 | 12 |
| Weight | 200 kg | 200 kg |
| Duct connection | Dia. 250 mm | Dia. 250 mm |
| Height | 1380 mm | 1380 mm |
| Width | 1250 mm | 1250 mm |
| Depth | 700 mm | 700 mm |

9.3 Technical Specifications, S20 X/S30 X

| | S20 X | | S30 X | |
|-------------------------------|---------------------|---------------------|---------------------|---------------------|
| | S20 XW | S20 XE | S30 XW | S30 XE |
| Rated voltage | 400 V | 400 V | 400 V | 400 V |
| Fuse | 3x16 A | 3x32 A | 3x16 A | 3x32 A |
| Rated current, total | 7.5 A | 25 A | 8.8 A | 30 A |
| Rated power, total | 2800 W | 14800 W | 3350 W | 18350 W |
| Rated power, electric battery | | 12000 W | | 15000 W |
| Rated power, fans | 2x1100 W | 2x1100 W | 2x1400 W | 2x1400 W |
| Rated preheating power | | | | |
| Fan type | B-wheel | B-wheel | B-wheel | B-wheel |
| Fan motor control | Frequency converter | Frequency converter | Frequency converter | Frequency converter |
| Max. fan speed | 3000 RPM | 3000 RPM | 3000 RPM | 3000 RPM |
| Filter type (SUP/EXTR) | F7 | F7 | F7 | F7 |
| Filter dimensions (WxHxD, mm) | 360x695x350 | 360x695x350 | 400x795x380 | 400x795x380 |
| Number of bags | 7 | 7 | 8 | 8 |
| Weight | 296 kg | 296 kg | 319 kg | 319 kg |
| Duct connection | 250x500 mm | 250x500 mm | 250x600 mm | 250x600 mm |
| Height | 1580 mm | 1580 mm | 1680 mm | 1680 mm |
| Width | 1610 mm | 1610 mm | 1690 mm | 1690 mm |
| Depth | 795 mm | 795 mm | 895 mm | 895 mm |

9.4 Technical Specifications, S20 R/S30 R

| | S20 R | | S30 R | |
|-------------------------------|---------------------|---------------------|---------------------|---------------------|
| | S20 RW | S20 RE | S30 RW | S30 RE |
| Rated voltage | 400 V | 400 V | 400 V | 400 V |
| Fuse | 3x16 A | 3x32 A | 3x16 A | 3x32 A |
| Rated current, total | 7.9 A | 25 A | 8.8 A | 30 A |
| Rated power, total | 2800 W | 14800 W | 3350 W | 18350 W |
| Rated power, electric battery | | 12000 W | | 15000 W |
| Rated power, fans | 2x1100 W | 2x1100 W | 2x1400 W | 2x1400 W |
| Rated preheating power | | | | |
| Fan type | B-wheel | B-wheel | B-wheel | B-wheel |
| Fan motor control | Frequency converter | Frequency converter | Frequency converter | Frequency converter |
| Max. fan speed | 3000 RPM | 3000 RPM | 3000 RPM | 3000 RPM |
| Filter type (SUP/EXTR) | F7 | F7 | F7 | F7 |
| Filter dimensions (WxHxD, mm) | 360x695x350 | 360x695x350 | 400x795x380 | 400x795x380 |
| Number of bags | 7 | 7 | 8 | 8 |
| Weight | 296 kg | 296 kg | 319 kg | 319 kg |
| Duct connection | 250x500 mm | 250x500 mm | 250x600 mm | 250x600 mm |
| Height | 1580 mm | 1580 mm | 1680 mm | 1680 mm |
| Width | 1610 mm | 1610 mm | 1690 mm | 1690 mm |
| Depth | 795 mm | 795 mm | 895 mm | 895 mm |

10 Commissioning



The unit must not be started until all documentation has been studied and all electrical and plumbing work has been performed.

- 1 Familiarise yourself well with the documentation for the automatic control system
- 2 Programme the various operating times and speeds (possibly including stop)
- 3 Check that the correct temperature regulation and temperature settings have been selected. Are the sensors located correctly?
- 4 Check that the fans rotate freely
- 5 Check that all air dampers work. The unit must not be operated with closed air dampers.
- 6 Check that all doors are properly closed
- 7 Start the unit as described in the documentation for the automatic control
- 8 Check that air dampers open (and close when the unit stops)
- 9 Check that the heat recovery system works correctly
- 10 Check that the heat control works correctly
- 11 If the unit has a water battery, you must test the frost function. Cool the frost sensor to below 5 °C.
The unit should stop and the air dampers close.
- 12 Tighten all terminal blocks after commissioning

11 EU Declaration of Conformity

This declaration confirms that the products meet the requirements of the following Council Directives:

89/336/EEC Electromagnetic Compatibility

73/23/EEC Low Voltage Directive

98/37/EEC Machinery Directive

Manufacturer: FLEXIT AS, Televeien 15, N-1870 Ørje
Tel: +47 69 81 00 00 Fax +47 69 81 00 80

Type of equipment: 86 42 000 **Ventilation equipment for mounting in ducts**

Model:

| | | |
|-------------------------|-------------------|-------------------|
| Albatros S12 - Kryss EL | Albatros S20 - XE | Albatros S30 - XE |
| Albatros S12 - Rotor EL | Albatros S20 - RE | Albatros S30 RE |
| Albatros S12 - Kryss W | Albatros S20 - XW | Albatros S30 - XW |
| Albatros S12 - Rotor W | Albatros S20 - RW | Albatros S30 - RW |

Serial no.:

The following harmonized European standards or technical specifications have been applied:

EN 50081-1:92 EMC - Emission
EN 50082-1:97 EMC - Immunity
EN 60335-1:1994 Safety
A11:95, A1:96, A12:96
EN292, EN563, EN294

FLEXIT AS

Pål J. Martinsen
General Manager

Ørje, 12/04/2005

The right to give notice of lack of conformity applies to this product in accordance with the existing terms of sale, **provided that the product is used correctly and maintained**. Filters are consumables.



The symbol on the product or on its packaging indicates that this product may not be treated as household waste. Instead it shall be handed over to the applicable collection point for the recycling of electrical and electronic equipment.

By ensuring this product is disposed of correctly, you will help prevent potential negative consequences for the environment and human health, which could otherwise be caused by inappropriate waste handling of this product. For more detailed information, please contact your local city office, your household waste disposal service or the shop where you purchased the product.

Notice of lack of conformity as a result of incorrect or defective installation must be submitted to the installation company responsible. The right to give notice of lack of conformity may lapse if the system is used incorrectly or maintenance is grossly neglected.

12 Product/Environmental Declaration

The declaration applies to ventilation units Flexit S12 X/R, S20 X/R, S30 X/R

Materials:

Materials with which the user or treated air come into contact:

- The unit's outer walls are made of galvanised steel DX51D+Z275 (NS-EN 10142)
- The rotor exchanger made of aluminium
- Miscellaneous electric cables with PVC insulation
- Electric motors consisting of galvanised steel, aluminium and copper
- Heating elements made of steel
- Air filters of glass fibre, sheet steel and EVA melting glue

Materials in the unit with which service personnel may come into contact:

- Plastic-insulated electric cables
- Miscellaneous other electrical components
- Insulation of type EPS/Dacron

Other materials that may occur in small quantities:

- Silicone sealant
- Polyethylene foamed plastic
- EPDM rubber gaskets
- Miscellaneous steel screws, nuts and pop rivets, plus small quantities of copper and brass.

Safety:

Materials:

The materials are considered to be completely harmless to users.

Use:

The unit is an electrical appliance which must be made dead for service and inspection. The unit also contains rotating motors that must have time to stop before the inspection door is opened, plus a heating element with a high operating temperature.

