FLEXIT S3 R SL4 R S4 R/S7 R

Operating Instructions
Air Handling Unit - Rotor







Contents

1	Dimensioned Drawings/Measures	4
	1.1 Dimensioned Drawing S3 R	4
	1.2 Dimensioned Drawing SL4 R	4
	1.3 Dimensioned Drawing S4 R/ S7 R	4
2	Mounting - Preparatory Work	5
	2.1 Inspection/Maintenance	5
	2.2 Required Space	5
	2.3 Mounting requirements	5
	2.4 Recommended sound isolation – Horizontal mounting	5
	2.5 Recommended sound insulation – Wall mounting	5
3	Installing S3 R	_
•	3.1 Location	
4	Installing SL4 R	7
-	Installing SL4 R 4.1 Wall Mounting	
	4.2 Horizontal Mountina	······································
5	· · · · · · · · · ·	
3		9
		9
_	5.2 Horizontal Mounting	10
6	Connections/ Electrical Connection	IU
	6.1 Automatics	10
	6.2 Supply Air Temperuture Sencor (B1)	10
	6.3 Temperature sensor for water battery (B5)	10
_	6.4 External Components	10
7	Plumbing Works 7.1 Tachnical Spesifications Water Battery	11
	7.1 reclinical spesifications water buttery	
	7.2 Possible Valve Types	12
	7.4 Possible Vent Motors	12
	7.5 Placement of Duct Battery	12
_	7.6 Connections	12
8	General Pictures/System Drawings	I3
	8.1 S3 R	13
	8.2 SL4 R	14
_	8.3 34 K/37 K	19
9	Capasity and sound data	16
	9.1 Capacity Diagram, Sound Data, Specifications – S3 R	16
	9.2 Capacity Diagram, Sound Data, Specifications – SL4 RE/SL4 RW	17
	9.3 Capacity Diagram, Sound Data, Specifications – SL4 RE EC/SL4 RW EC	18
	9.4 Capacity Diagram, Sound Data, Specifications – S4 RE/S4 RW	19
	9.5 Capacity Diagram, Sound Data, Specifications – S4 RE EC/S4 RW EC	20
	9.6 Capacity Diagram, Sound Data, Specifications – S7 RE/S7 RW	21
	9.7 Capacity Diagram, Sound Data, Specifications – S7 RE/S7 RW EC	22
10		23
	10.1 Technical Data	23
	10.2 Installation of External Kitchen Hood	23
11	• • • • • • • • • • • • • • • • • • •	24
	11.1 Basic Ventilation	24
	11.2 Forced Ventilation	24
	11.3 Pressure Drop Measurement	24
12	Adjustment Curves External Kitchen Hood	25
	12.1 Basic Ventilation S3 R/S3 RK	25
	12.2 Forced Ventilation S3 R	25
	12.3 Basic Ventilation SL4 R/SL4 R EC	26
_	12.4 Forced Ventilation SL4 R/SL4 R EC	26
13	Technical Spesifications	27
	13.1 Technical Spesifictions S3 R	27
	13.2 Technical Spesifictions SL4 R	27
	13.3 Technical Data S4 R	
	13.4 Technical Data S7 R	28
14	Final Check	29

15	Important Safety Instructions	30
16	Functional Description	30
	16.1 Heating Elements	30
	16.2 Operation via Kitchen Hood (S3 R/SL4 R)	30
17	Cleaning - Maintenance, S3 R	31
18	Cleaning - Maintenance SL4 R	32
19	Cleaning - Maintenance S4 R/S7 R	33
20	Fault Location	34
21	CE Declaration of Conformity	35
22	Product/Environmental Declaration	36



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.



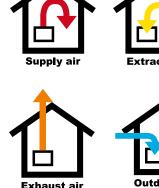
NB: When a text bears this symbol, damage to equipment or a poor utilisation ratio may be the consequence of not following the instructions.

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.

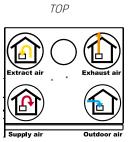
DANGER! ELECTRICITY

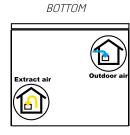
DANGER! DO NOT TOUCH



EXHAUST AIR





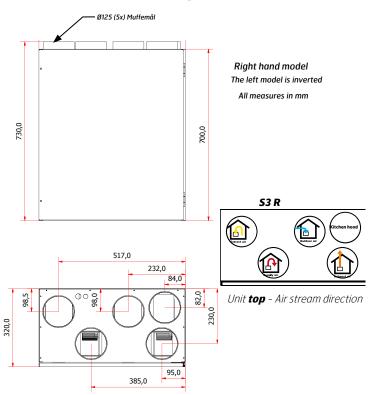


EXAMPLES OF DUCT LOCATIONS

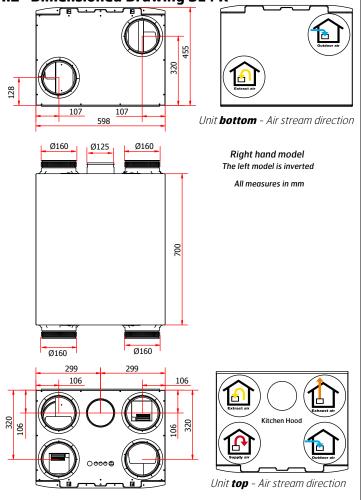


1 Dimensioned Drawings/Measures

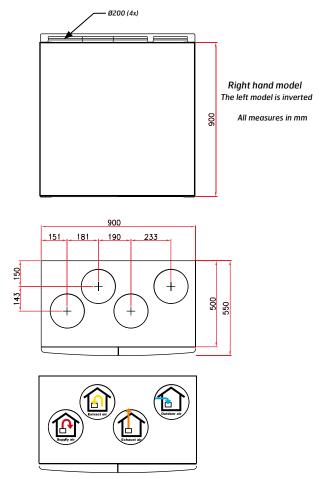
1.1 Dimensioned Drawing S3 R







1.3 Dimensioned Drawing S4 R/S7 R



Unit top - Air stream direction



2 Mounting - Preparatory Work

Aggregatet er beregnet for innendørs montering.

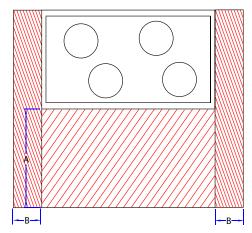
2.1 Inspection/Maintenance

The unit must be installed with space for service and maintenance such as filter replacement and cleaning the fans and recovery system. It is also important for the unit to be located so that the connectioncabinet is easily accessible for electrical connection, troubleshooting and future component replacement.

2.2 Required Space

Туре	Α	В		
S3 R	1000 mm	0 mm		
SL4 R	1000 mm	0 mm		
S4/S7 R	1000 mm	60 mm		

Fig. 1



A: In front/over the unit

B: Distance to wall

These are minimum requirements that only take service needs into account. National statutory requirements for electrical safety may deviate from this. Check which rules apply in your country.

2.3 Mounting requirements

The unit is intended for use in washing rooms, baths, attics or other suitable locations.

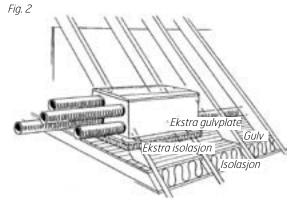
The unit is available in left and right versions (exhaust air nipple to the left or right), depending on what is the most favourable duct location. In wet rooms the unit must be located in zone 3 (minimum 0.6 m from the edge of the bath and 1.2 m from the shower head).

2.4 Recommended sound isolation – Horizontal mounting

When mounted horizontally the unit should be on a firm base, for example gypsum or chipboard, which must be level

If the room below is sensitive to noise, the panel can be placed on a very firm panel of mineral wool for maximum sound absorption (Fig. 2).

The unit should not be placed directly above a bedroom.



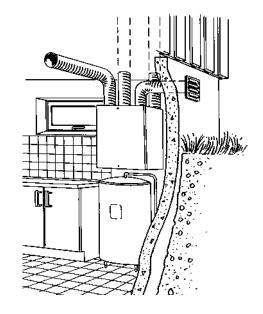
Recommended surface

2.5 Recommended sound insulation – Wall mounting

For wall mounting, the (included) wall bracket fixed to the unit is used.

The unit must not be placed on a wall with rooms on the other side which are sensitive to noise. The wall must be sound-insulated. If necessary, use double plasterboards on the wall.

Interrupted studs must be used.





3 Installing S3 R

3.1 Location

Mounting brackets and suspension have several mounting holes to enable securing the unit to two pillars. If this is not possible, consider using additional studs (transoms).

Wall Mounted (3A)

The enclosed wall bracket is used for wall mounting (Fig. 3B). (The wall must be sound insulated to prevent sound penetration).

- The wall bracket (Fig. 3B) is screwed to the wall with the enclosed screws.
- The unit is suspended from the rail.
- Fix the unit at the bottom with the enclosed mounting bracket

The wall must be sound insulated to prevent noise transfer. The unit shuld be palced against a wall which does not have a sound sencitive adjoining room.



Ceiling Mounted (4A)

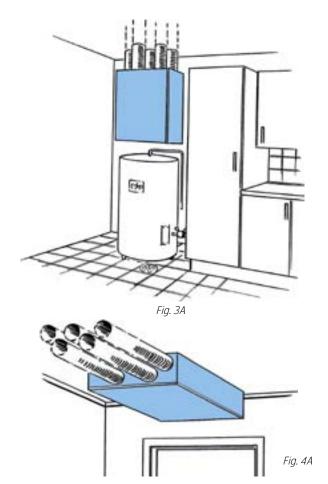
The enclosed ceiling brackets are used for ceiling mounting (Fig. 6B).

- Attach the 4 small brackets to the unit in the prefitted blind nuts with the 8 enclosed screws with countersunk heads.
- Fit the suspension rails to the ceiling with the enclosed screws.
- Lift the unit into place. The brackets on the unit must lock into the ceiling-mounted rails.



The mounting hole furthest out (2 on each side) must be fixed to joists or a concrete ceiling. Use at least 8 screws





 \triangle

FOR CEILING-MOUNTED UNITS:

Be careful with the doors when opening the unit. They open suddenly when the last screw is removed. Take care as well when removing components. Hold them when you remove the last screw to avoid objects falling down. The rotor requires extra care on account of its weight.

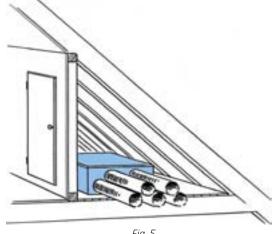


Fig. 5

Horizontal mounting (Fig. 3) in the loft requires no brackets. The unit should not be placed directly above bedrooms on account of noise. Install it on a firm base (gypsum/chipboard) that is level. Place the panel on a very firm panel of mineral wool if additional sound absorption is required (Fig2/Section. 2).



4 Installing SL4 R

The duct connections on the top and bottom of the unit can be moved by turning the nipples/covers a quarter turn and lifting them up (Fig. 8).

Fix the movable ducts at the top and bottom of the unit (extract air and exhaust air) with self-tapping screws from the installation kit. The location of the screws is indicated on the ducts.

4.1 Wall Mounting

The enclosed wall bracket is used for wall mounting (Fig. 8B/8C), which is fixed to the unit. Wall must be sound insulated (Fig. 2/Chapt. 2).

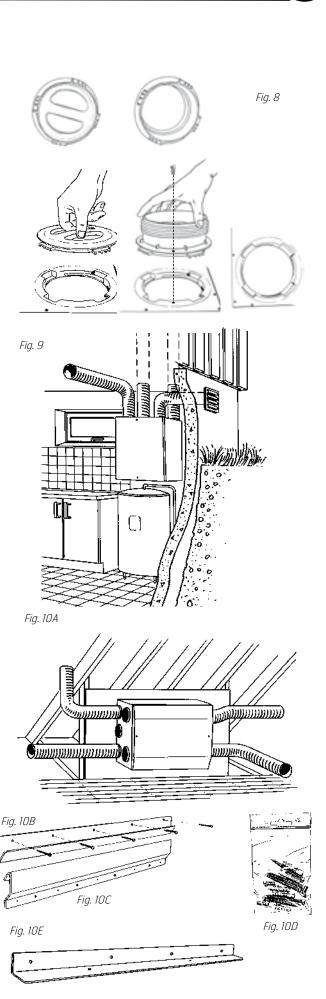
The wall must be sound insulated to prevent noise transfer. The unit should be placed against a wall which does not have a sound sencitive adjoining room.

Duct connection top (Fig. 9)

- The wall bracket (Fig. 10B) is screwed to the wall with the enclosed screws (Fig. 10D).
- The unit is suspended from the rail. As standard, the unit has the mounting bracket mounted on the top for 90° installation.
- Fix the unit at the bottom with the enclosed mounting bracket (Fig. 10E).

Duct connection to the side (Fig. 10)

- For 180°/sideways installation, the mounting bracket (Fig. 10C) must be unscrewed and installed on the long side which faces up.
- The suspension rail (Fig. 10B) is screwed to the wall with the enclosed screws (Fig. 10D).
- The unit is suspended from the rail.
- Fix the unit at the bottom with the enclosed mounting bracket (Fig. 10E).

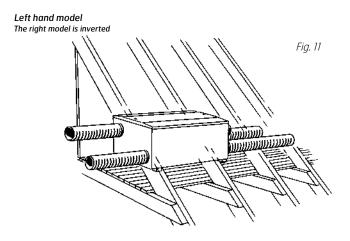






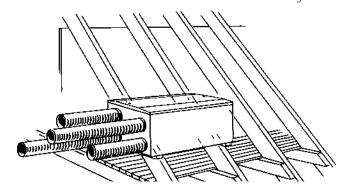
4.2 Horizontal Mounting

The ventilation unit should be installed on a firm base (e.g. gypsum/chipboard) that is level. If the room is noise sensitive, place the panel on a very firm panel of mineral wool for additional sound reduction (Fig. 2/Kap. 2). The unit should not be installed above a bedroom. The figures 11-14 describe the various duct connections available.

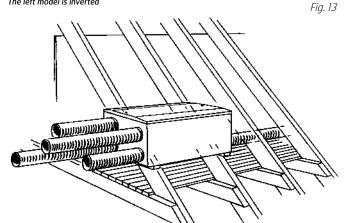


Right hand model The left model is inverted

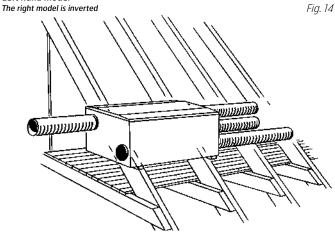
Fig. 12



Right hand model The left model is inverted



Left hand model





5 Mounting of S4 R/S7 R

These units are heavy and therfore it is necessary to use additional studs (transcoms) between the pillars on 48 x 98 mm, or 48 x 148 mm for suspension above and support bracket below (c/c distance 900 mm) If using existing wall framework, mount an 18 mm plywood wallboard first to distribute the weight, minimum the seize of the unit.

The wallboard must be secured to the framework in at least 3 places with countersunk screws (6 attachment screws 4.5×50 are included).

Mounting alternatives for the unit:

- Wall mounting (Fig. 15)
- Horizontal mounting (17)

5.1 Wall Mounting

The enclosed wall brackets are used for wall mounting (Fig. 14A/14B). The wall must be sound insulated to prevent noise transfer. The unit should be placed against a wall which does not have a sound sencitive adjoining room.

Duct connection top (Fig. 16)

- Attach one of the 2 mounting brackets (Fig. 16A) to the ventilation unit with the enclosed screws (Fig. 16B).
- Lift the unit onto the wall and fasten with screws.
- Fix the unit at the bottom with the second enclosed mounting bracket (Fig. 16A).

5.2 Horizontal Mounting

The ventilation unit should be installed on a firm base (e.g. gypsum/chipboard) that is level. If the room is noise sensitive, place the panel on a very firm panel of mineral wool for additional sound reduction (Fig. 2/Kap. 2). The unit should not be installed above a bedroom.



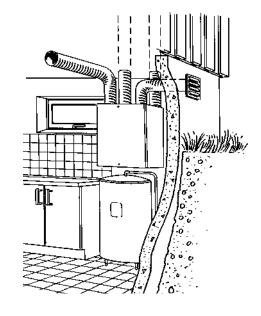


Fig. 16A

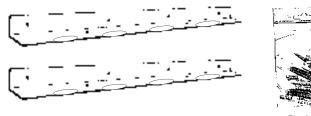
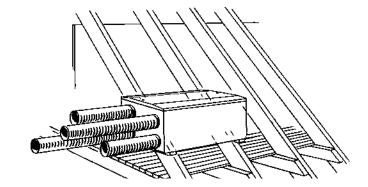


Fig. 16B

Fig. 17







6 Connections of ducts and electrical connection

- The ducts usually come from joists and are connected to the nipples on the top of the unit.
- Ensure that the ducts are connected to the right nipple. See the labelling on the unit (top/bottom and behind door). The symbols are explained on page 3 and the placing is shown on measurement drawing in Chap. 1.
- Pull the duct insulation well up to the unit.
- To avoid condensation, it is very important for the <u>outdoor air duct</u> to have insulation and a plastic sleeve pulled right down to the unit. Seal the plastic sleeve to the unit with tape.
 - The outdoor air duct is normally designed with 25 mm insulation.
- Lay the outdoor air duct with a slight incline towards the outdoor air cap so that any water that enters drains out again.
- With a short distance between the unit and the exhaust point, sound insulation must be installed to meet the requirements for the outdoor sound level.
- Ducts must have good sound insulation, particularly above the unit.
- All electrical connections must be made by qualified personell only.



The unit must be equipped with a separate earth-leakage circuit-breaker.

Power Cord

The unit is supplied with a 1.8 m cable and plug (which also functions as the service switch). The cable emerges on the top of the unit (front) on the left side of a right model and the right side of a left model. This is connected to a 230 V 50 Hz single-phase earthed power point that is located in an easily accessible position close by. For fuse types, see chapt. 14.

6.1 Automatics

The control package is supplied with the unit. The low-voltage cable must be laid between the unit and the switch unit. See separate automatics documentation.



The low-voltage cable must be laid at least 30 cm away from the 230 V cable. For flush installation, lay the cable in 20 mm conduit pipe.

6.2 Supply Air Temperature Sencor (B1)

Δ

Fig. 18

10

Temperature sensor B1 must be placed after the water battery.

This should be placed in the supply air duct (red on Flexit Drawing/Symbold Used page 3) approx. 1 m from the unit. Roll out the marked wire coil on the unit located close to the supply air intake. Drill a Ø 7 mm hole in the duct where the sencor can be placed. Seal the hole with a sealant and tape the wire on the outside of the duct to keep in place.

6.3 Temperature sensor for water battery (B5)

In order to avoid that the water battery is destroyed by frost a temperature sensor (B5) must be installed on the return water pipe where the cold water leaves the battery.

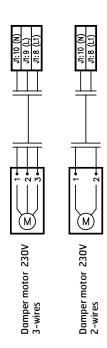
6.4 External Components

Refer to separate electrical circut drawing enclosed with the individual ventilation unit and Fig. 18 below.

Water models
Connected to external box

Damper motor 230V $\left(\begin{array}{c} \begin{array}{c} \begin{array}{c} 1 \\ \hline \end{array} \end{array} \right) \begin{array}{c} \begin{array}{c} 1 \\ \hline \end{array} \end{array} \left(\begin{array}{c} \begin{array}{c} 1 \\ \hline \end{array} \end{array} \right) \begin{array}{c} \begin{array}{c} 1 \\ \hline \end{array} \end{array} \left(\begin{array}{c} \begin{array}{c} 1 \\ \hline \end{array} \right) \end{array} \left(\begin{array}{c} \begin{array}{c} 1 \\ \hline \end{array} \right) \end{array} \left(\begin{array}{c} \begin{array}{c} 1 \\ \hline \end{array} \right) \end{array} \right)$ Damper motor 230V $\left(\begin{array}{c} \begin{array}{c} \begin{array}{c} \begin{array}{c} 1 \\ \hline \end{array} \end{array} \right) \begin{array}{c} \begin{array}{c} 1 \\ \hline \end{array} \end{array} \right) \begin{array}{c} \begin{array}{c} \begin{array}{c} 1 \\ \hline \end{array} \end{array} \left(\begin{array}{c} \begin{array}{c} 1 \\ \hline \end{array} \right) \end{array} 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Electrical models Connected directely on the mainvboard





7 Plumbing Works



All plumbing must be performed by a qualified plumber.

7.1 Technical Spesifications Water Battery

Water temp. In °C	80	70	60	50	40
Water temp. Out °C	60	50	40	30	30
S4R/SL4R					
Water pressure I/s	0,03	0,03	0,02	0,02	0,02
Pressure drop waterside kPa	2,99	1,98	1,1	1,24	1,8
Max battery capasity kW	2,86	2,23	1,56	1,25	1
Max temp. increase °C	23,4	18,2	12,8	10,2	8,2
Pipe connection Ø mm	10	10	10	10	10
Recommended kvs-value	1,0	1,0	1,0	1,0	1,0
S7R					
Water pressure I/s	0,08	0,06	0,05	0,03	0,06
Pressure drop waterside kPa	17,85	12,58	8,04	4,25	12,97
Max battery capasity kW	6,19	5,01	3,82	2,6	2,42
Max temp. increase °C	29,5	23,9	18,25	12,4	11,5
Pipe connection Ø mm	1/2"	1/2"	1/2"	1/2"	1/2"
Recommended kvs-value	1,6	1,6	1,6	1,0	1,0
PHYSICAL DIMENSIONS	A	В	С	D	
S4R/SL4R mm	205	205	350	160	
S7R mm	351	255	350	200	

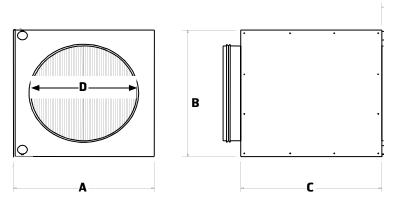


Fig. 20 Duct battery





7.2 Possible Valve Types

3-way valve, type Belimo DN15: Article no. 56597 Kvs 1,6 Article no. 56604 Kvs. 1,0

7.3 Possible Vent Motors

Vent motor type Belimo L230A-SR, 0-10V. Article no. 56596.



24V motor can not be used

7.4 Placement of Duct Battery

The duct battery must be placed horizontally (Fig. 20/ Chapter 8.1). When placed in an non-insulated room the battery itself must be insulated.

S4 R/SL4 R	14466
S7 R	14467

7.5 Connections

Use the recommended connection (see Fig. 20) 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.)



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.

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.

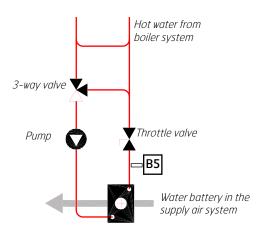


Fig. 21 Recommended connection





8 General Pictures/System Drawings

8.1 S3 R

General Picture - Rotor Heat Exchanger

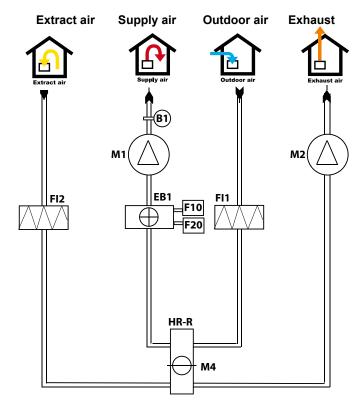
- 1 (FI2) Extract air filter F 7
- 2 (FI1) Supply air filter F 7
- 3 (EB1) Heating battery, electrical
- 4 (F10-20) Overheating thermostat (manual reset)
- 5 (M1) Supply air fan
- 6 (M2) Extract air fan
- 7 (HR-R) Rotor heat exchanger
- 8 (M4) Rotor motor
- 9 Control box
- 10 Adjustment switch



Extract air Supply Outdoor Exhaust

System Drawing - Electrical Battery

- B1 Temperature sensor, supply air
- EB1 Heating battery, electrical
- F10 Overheating thermostat (manual reset)
- F20 Overheating thermostat (automatic reset)
- FI1 Supply air filter
- FI2 Extract air filter
- M1 Supply air fan
- M2 Extract air fan
- HR-R Rotor heat exchanger
- M4 Rotor motor







8.2 SL4 R

General Picture - Rotor Heat Exchanger

1 (FI2) Extract air filter F 7

2 (FI1) Supply air filter F 7

3 (EB1) Heating battery, electrical

4 (F10-20) Overheating thermostat (manual reset)

5 (M1) Supply air fan

6 (M2) Extract air fan

7 (HR-R) Rotor heat exchanger

8 Control box

9 Adjustment switch

10 Connection: Control panel/kitchen hood

System Drawing - Electrical Battery

B1 Temperature sensor, supply air

B5 Temperature sensor, water battery * (- EB1/F10/F20)

EB1 Heating battery, electrical

F10 Overheating thermostat (manual reset)

F20 Overheating thermostat (automatic reset)

FI1 Supply air filter

FI2 Extract air filter

M1 Supply air fan

M2 Extract air fan

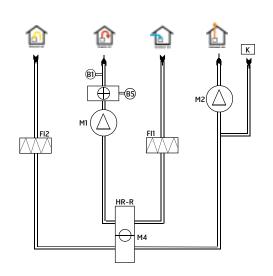
HR-R Rotor heat exchanger

M4 Rotor motor

MODELS WITH KITCHEN HOOD ONLY:

K Kitchen hood (SL4 RK)

System Drawing - Water Battery *

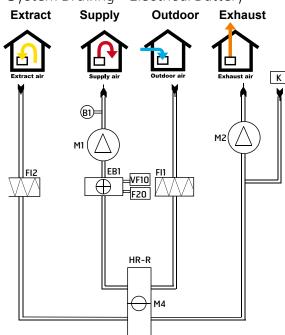


Right model (left model inverted)

Supply air Extract air Kitchen hood Outdoor air Exhaust



System Drawing - Electrical Battery







8.3 S4 R/S7 R

General Picture - Rotor Heat Exchanger

1 (FI2) Extract air filter F 7

2 (FI1) Supply air filter F 7

3 (EB1) Heating battery, electrical

4 (F10-20) Overheating thermostat (manual reset)

5 (M1) Supply air fan

6 (M2) Extract air fan

7 (HR-R) Rotor heat exchanger

8 (M4) Rotor motor

9 Control box

10 Adjustment switch (AC)

11 Connection control panel

System Drawing - Electrical Battery

B1 Temperature sensor, supply air

B5 Temperature sensor, water battery * (- EB1/F10/F20)

EB1 Heating battery, electrical

F10 Overheating thermostat (manual reset)

F20 Overheating thermostat (automatic reset)

FI1 Supply air filter

FI2 Extract air filter

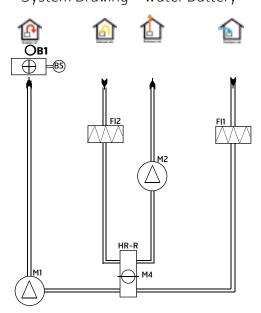
M1 Supply air fan

M2 Extract air fan

HR-R Rotor heat exchanger

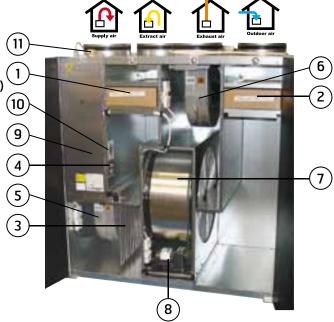
M4 Rotor motor

System Drawing - Water Battery *

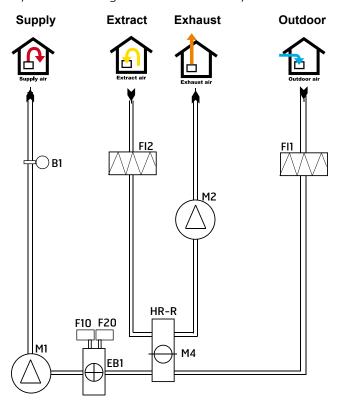


Right model (left model inverted)

Supply air Extract air Exhaust Outdoor air



System Drawing - Electrical Battery



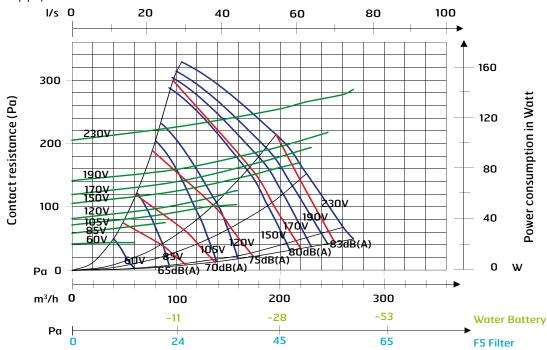




9 Capasity and sound data

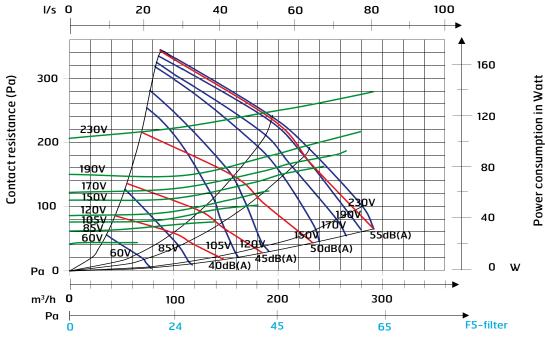
9.1 Capacity Diagram, Sound Data, Specifications - S3 R

Supply air side (with F7 filter)



Air flow rate, m³/h - Pressure correction factor

Extract air side (with F7 filter)



Air flow rate, m³/h - Pressure correction factor

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. Radiated noise is estimated by finding the noise level from the supply air table and deduct the total value found in the correction factor table below.

Correction factor for Lw

Hz	63	125	250	500	1000	2000	4000	8000	LwA	
Supply o	air 3	2	-2	-5	-5	-6	-13	-29		
Extract of	air 18	14	1	-12	-14	-28	-37	-43		
Radiate	d 17	-12	-10	-13	-11	-15	-19	-57	- 38 7	

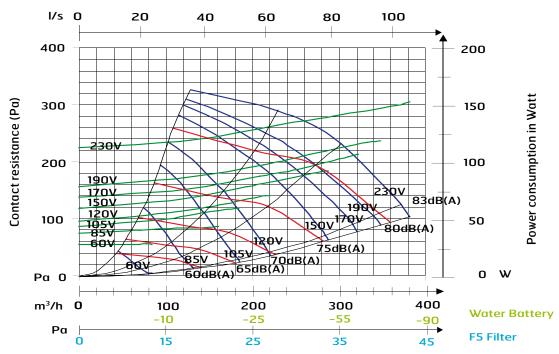
Data for supply air is measured in accordance with ISO 5136, "In-duct method".

Radiated noise is measured in accordance with ISO 9614-2. Bruel ξ Kjær measuring equipment, type 2260.



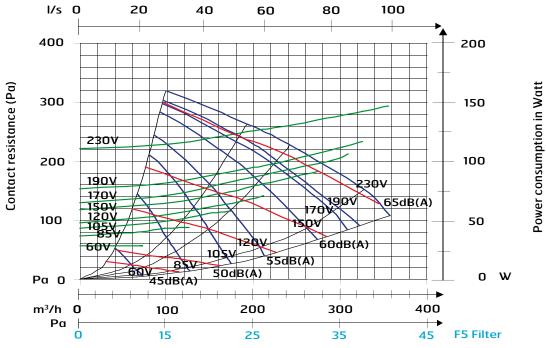
9.2 Capacity Diagram, Sound Data, Specifications - SL4 RE/SL4 RW

Supply air side (with F7 filter)



Air flow rate, m³/h - Pressure correction factor

Extract air side (with F7 filter)



Air flow rate, m³/h - Pressure correction factor

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. Radiated noise is estimated by finding the noise level from the supply air table and deduct the total value found in the correction factor table below.

Correction factor for Lw

Hz	63	125	250	500	1000	2000	4000	8000	LwA
Supply air	3	1	2	-1	-7	-11	-18	-31	
Extract air	10	8	5	-2	-11	-19	-30	-48	
Radiated	-50	-40	-34	-42	-46	-47	-56	-63	-38,5

Data for supply air is measured in accordance with ISO 5136, "In-duct method"

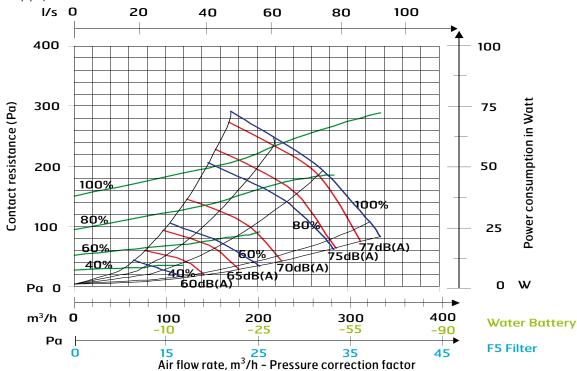
Radiated noise is measured in accordance with ISO 9614-2. Bruel & Kjær measuring equipment, type 2260.

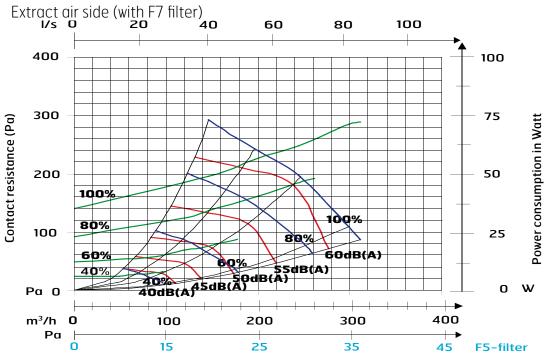




9.3 Capacity Diagram, Sound Data, Specifications - SL4 RE EC/SL4 RW EC







Air flow rate, m³/h - Pressure correction factor

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. Radiated noise is estimated by finding the noise level from the supply air table and deduct the total value found in the correction factor table below.

Correction factor for Lw

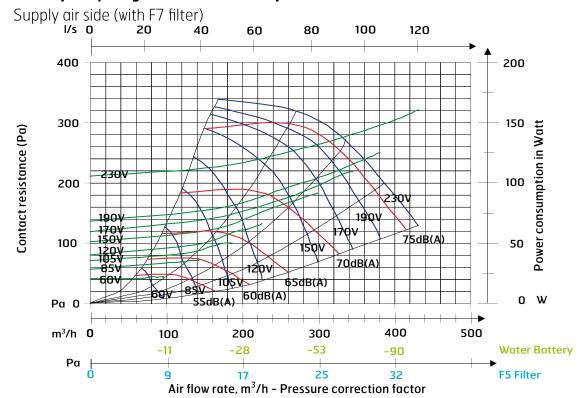
Hz	63	125	250	500	1000	2000	4000	8000	LwA
Supply air	9	3	-1	-2	-4	-10	-18	-31	
Extract air	13	9	3	-2	-10	-19	-31	-48	
Radiated	-43	-35	-32	-40	-43	-45	-55	-63	-36,9

Data for supply air is measured in accordance with ISO 5136, "In-duct method".

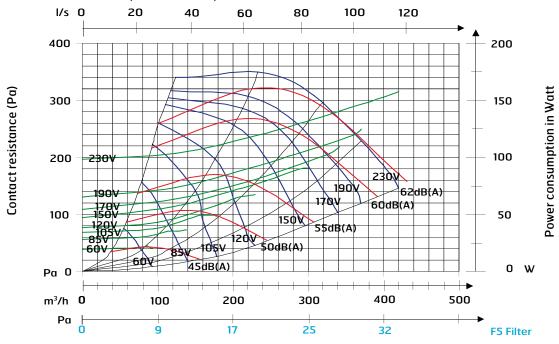
Radiated noise is measured in accordance with ISO 9614-2. Bruel & Kjær measuring equipment, type 2260.



9.4 Capacity Diagram, Sound Data, Specifications - S4 RE/S4 RW







Air flow rate, m3/h - Pressure correction factor

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. Radiated noise is estimated by finding the noise level from the supply air table and deduct the total value found in the correction factor table below.

Correction factor for Lw

Hz	63	125	250	500	1000	2000	4000	8000	LwA
Supply air	7	3	-1	-3	-6	-7	-17	-30	
Extract air	r 8	9	5	-2	-11	-21	-29	-48	
Radiated	-43	-31	-33	-34	-38	-38	-39	-44	-30,6

Data for supply air is measured in accordance with ISO 5136, "In-duct method".

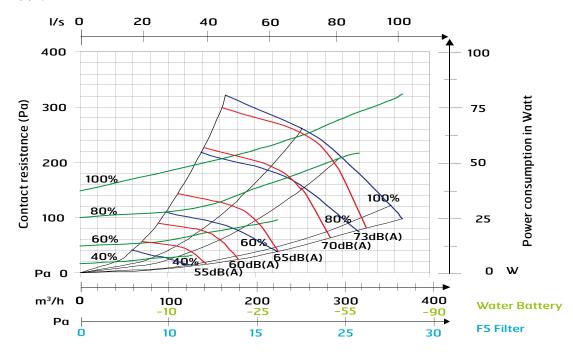
Radiated noise is measured in accordance with ISO 9614-2. Bruel ξ Kjær measuring equipment, type 2260.





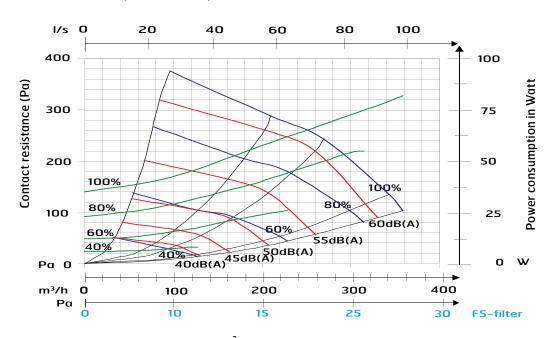
9.5 Capacity Diagram, Sound Data, Specifications - S4 RE EC/S4 RW EC

Supply air side (with F7 filter)



Air flow rate, m³/h - Pressure correction factor

Extract air side (with F7 filter)



Air flow rate, m³/h - Pressure correction factor

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. Radiated noise is estimated by finding the noise level from the supply air table and deduct the total value found in the correction factor table below.

Correction factor for Lw

Hz 63	125	250	500	1000	2000	4000	8000	LwA
Supply air 10	4	-3	-4	-3	-10	-20	-34	
Extract air 11	11	4	-4	-8	-23	-32	-48	
Radiated -43	-43	-31	-33	-34	-38	-39	-44	-30,6

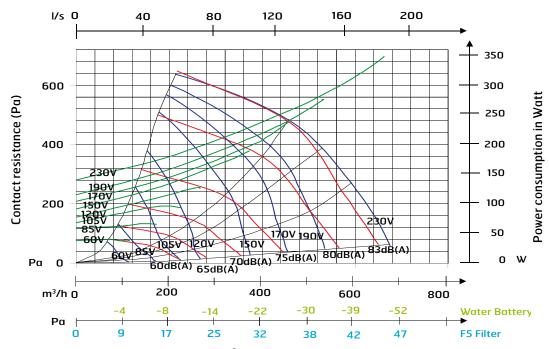
Data for supply air is measured in accordance with ISO 5136, "In-duct method".

Radiated noise is measured in accordance with ISO 9614-2. Bruel \$ Kjær measuring equipment, type 2260.



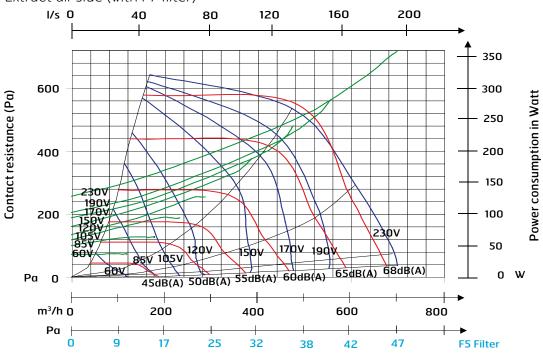
9.6 Capacity Diagram, Sound Data, Specifications - S7 RE/S7 RW

Supply air side (with F7 filter)



Air flow rate, m³/h - Pressure correction factor

Extract air side (with F7 filter)



Air flow rate, m³/h - Pressure correction factor

21

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. Radiated noise is estimated by finding the noise level from the supply air table and deduct the total value found in the correction factor table below.

Correction factor for Lw

Hz	63	125	250	500	1000	2000	4000	8000	LwA
Supply air	3	1	-4	-4	-5	-7	-14	-24	
Extract air	10	10	11	-4	-9	-15	-26	-41	
Radiated	-43	-31	-33	-34	-38	-38	-39	-44	-30,6

Data for supply air is measured in accordance with ISO 5136, "In-duct method".

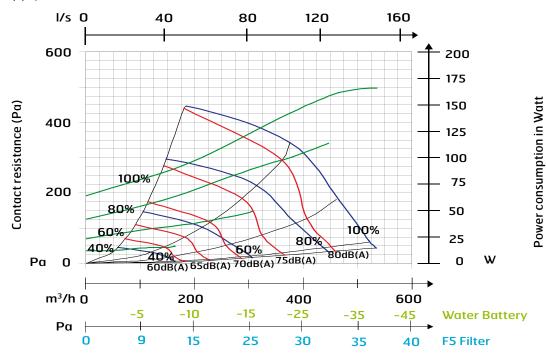
Radiated noise is measured in accordance with ISO 9614-2. Bruel \$ Kjær measuring equipment, type 2260.





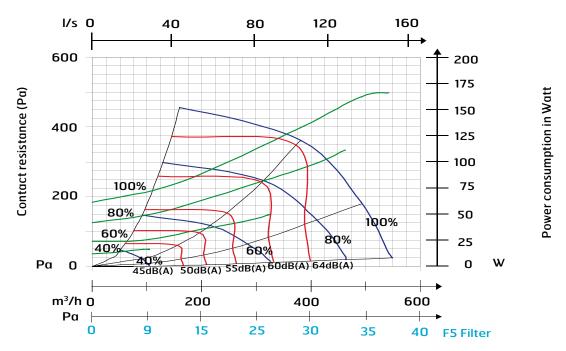
9.7 Capacity Diagram, Sound Data, Specifications – S7 RE/S7 RW EC

Supply air side (with F7 filter)



Air flow rate, m³/h - Pressure correction factor

Extract air side (with F7 filter)



Air flow rate, m³/h - Pressure correction factor

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. Radiated noise is estimated by finding the noise level from the supply air table and deduct the total value found in the correction factor table below.

Correction factor for Lw

Hz 63	125	250	500	1000	2000	4000	8000	LwA
Supply air 3	1	-4	-4	-5	-7	-14	-24	
Extract air 10	11	3	-4	-9	-15	-26	-41	
Radiated -43	-31	-33	-34	-38	-38	-39	-44	-30,6

Data for supply air is measured in accordance with ISO 5136, "In-duct method".

Radiated noise is measured in accordance with ISO 9614-2. Bruel ξ Kjær measuring equipment, type 2260.



10 Installation of External Kitchen Hood

10.1 Technical Data

Width: 60 cm

El. connection: 230 V earthed

Light: Fluorescent tube, base G23, 11 W

10.2 Installation of External Kitchen Hood

Installing the sleeve and damper

The sleeve is inside the volume hood on delivery. Place the damper shaft A in the hoop under the damper lid, see Fig. 21. Ensure that the grips B are under the edge of the plate. The sleeve snaps into place.

Installing the kitchen hood

The kitchen hood must be placed under or recessed in the row of cabinets, see Fig. 22. The distance between the cooker and the kitchen hood must be at least 40 cm. For a gas cooker, the distance must be 65 cm. The kitchen hood can also be installed using wall mountings that can be purchased as accessories, Fig. 13. Instructions for installing the accessories are enclosed with them.

Electrical installation

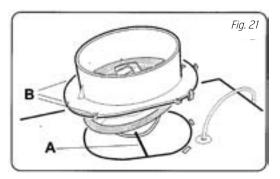
The kitchen hood is supplied with a cable and earthed plug for connection to an earthed socket. The control cable (12 V) is connected between marked 2-core cables from the kitchen hood and the unit. The colour of the cables connected to the terminals is of no significance. The control cable between the kitchen hood and the unit must at least be of type 2×0.75 mm². The voltage between the units is 12 V DC.

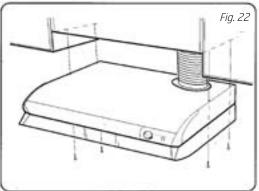


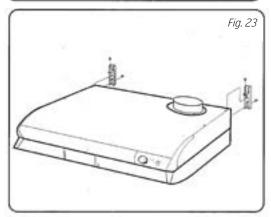
The installation must be carried out by an authorised expert.

Adjustment

For adjustment of the kitchen hood, see Chap. 12, and for the unit see Chap. 13 Adjustment Curves.











11 Adjusting the Kitchen Hood

11.1 Basic Ventilation

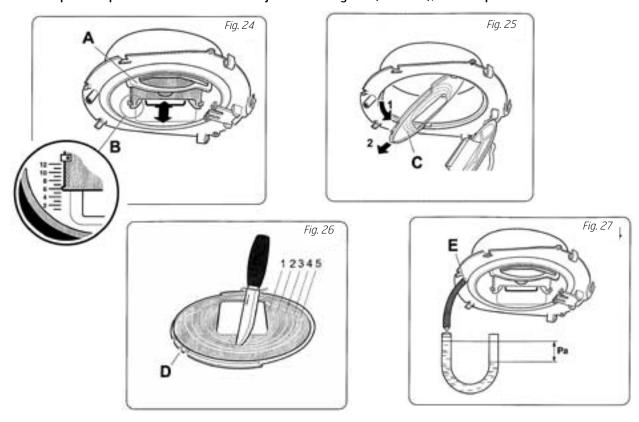
The basic ventilation is adjusted by setting the sliding damper A to the desired position as shown in detail B in Fig. 24 (see diagram 13.1).

11.2 Forced Ventilation

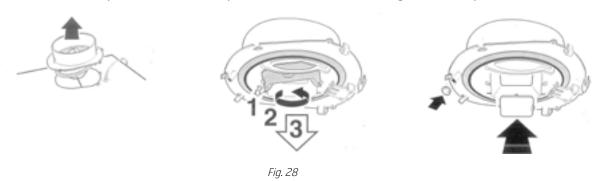
Open the damper and remove the throttle piece **C**, Fig. 25. Adjust the forced ventilation by cutting out a suitable number of rings in the throttle piece, Fig. 26 (see diagram 13.2). Ensure that the guide slot **D** is in position when the piece is in place.

11.3 Pressure Drop Measurement

The pressure drop is measured by the hose being fitted to the measuring outlet at the front of the damper, Fig. 27. The pressure drop corresponds to the axis in the adjustment diagram (left side), see Chap. 13.



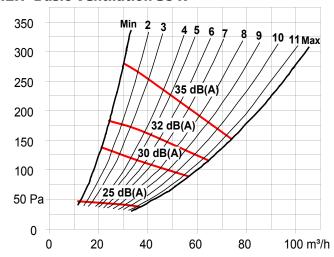
If basic ventilation is not required, the enclosed piece can be installed, see Fig. 28 for the procedure.





12 Adjustment Curves External Kitchen Hood

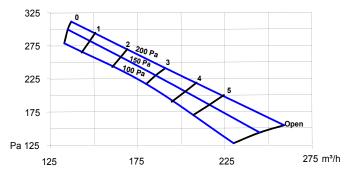
12.1 Basic Ventilation S3 R



53 R

Min. - Max. = Damper position dB = Lp(A) measured 1 m from the kitchen hood in the kitchen landscape.

12.2 Forced Ventilation S3 R



S3 R

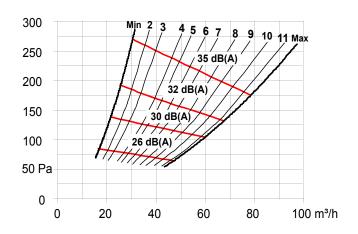
0 - Open = Number of rings removed 100/150/200 Pa = Total duct resistance for the extract air and exhaust air side

Lw (A) measured 1 m from the kitchen hood varies between 46 and 48 dB(A) throughout the measuring area



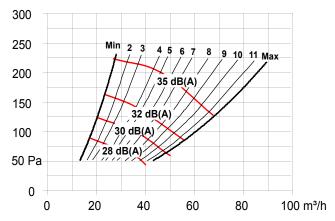


12.3 Basic Ventilation SL4 R/SL4 R EC



SL4 R

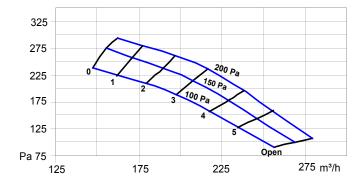
Min. - Max. = Damper position dB = Lp(A) measured 1 m from the kitchen hood in the kitchen landscape.



SL4 R EC

Min. - Max. = Damper position dB = Lp(A) measured 1 m from the kitchen hood in the kitchen landscape.

12.4 Forced Ventilation SL4 R/SL4 R EC



SL4 R

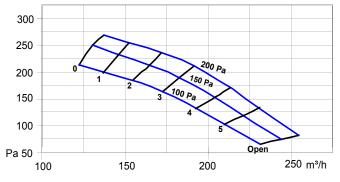
0 - Open = Number of rings removed 100/150/200 Pa = Total duct resistance for the extract air and exhaust air side

Lw (A) measured 1 m from the kitchen hood varies between 45 and 49 dB(A) throughout the measuring area

SL4 R EC

0 - Open = Number of rings removed 100/150/200 Pa = Total duct resistance for the extract air and exhaust air side

Lw (A) measured 1 m from the kitchen hood varies between 45 and 49 dB(A) throughout the measuring area





13 Technical Spesifications

13.1 Technical Spesifictions S3 R

	S3 R
Rated voltage	230 V/50 Hz
Fuse	10 A
Rated current, total	5,5 A
Rated power, total	1271 W
Rated power, electric batteries	900 W
Rated power, fans	2 x 165 W
Fan type	F-wheel
Fan motor control	Transformer
Max. fan speed	2230 o/min
Automatic control standard	CS 50
Filter type (SUP/EXTR)	F7/F7
SUP filter dimensions (WxHxD)	285x130x50 mm
EXTR filter dimensions (WxHxD)	285x130x50 mm
Weight	38,5 kg
Duct connection	Ø 125 mm (127 mm muffe)
Height	700 mm
Width	598 mm
Depth	320 mm

13.2 Technical Spesifictions SL4 R

	SL4 RE	SL4 RE EC	SL4 RW	SL4 RW EC
Rated voltage	230 V/50 Hz	230 V/50 Hz	230 V/50 Hz	230 V/50 Hz
Fuse	10 A	10 A	10 A	10 A
Rated current, total	5,5 A	4,8 A	1,6 A	0,9 A
Rated power, total	1271 W	1107 W	371 W	207 W
Rated power, electric batteries	900 W	900 W	-	-
Rated power, fans	2 x 165 W	2 x 83 W	2 x 165 W	2 x 83 W
Fan type	F-wheel	F-wheel	F-wheel	F-wheel
Fan motor control	Transformer	EC-stepless	Transformer	EC-stepless
Max. fan speed	2230 o/min	1970 o/min	2230 o/min	1970 o/min
Automatic control standard	CS 50	CS 50	CS 50	CS 50
Filter type (SUP/EXTR)	F7/F7	F7/F7	F7/F7	F7/F7
SUP filter dimensions (WxHxD)	350x185x50 mm	350x185x50 mm	350x185x50 mm	350x185x50 mm
EXTR filter dimensions (WxHxD)	350x185x50 mm	350x185x50 mm	350x185x50 mm	350x185x50 mm
Weight	48 kg	48 kg	48 kg	48 kg
Duct connection	Ø 160 mm	Ø 160 mm	Ø 160 mm	Ø 160 mm
Duct connection, kitchen hood	Ø 125 mm	Ø 125 mm	Ø 125 mm	Ø 125 mm
Height	700 mm	700 mm	700 mm	700 mm
Width	598 mm	598 mm	598 mm	598 mm
Depth	455 mm	455 mm	455 mm	455 mm





13.3 Technical Data S4 R

	S4 RE	S4 RE EC	S4 RW	S4 RW EC
Rated voltage	230 V/50 Hz	230 V/50 Hz	230 V/50 Hz	230 V/50 Hz
Fuse	10 A	10 A	10 A	10 A
Rated current, total	6,8 A	6,1 A	1,6 A	0,9 A
Rated power, total	1581 W	1417 W	381 W	217 W
Rated power, electric batteries	1200 W	1200 W	-	-
Rated power, fans	2 x 165 W	2 x 83 W	2 x 165 W	2 x 83 W
Rated power, pre-heating	-	-	-	-
Fan type	F-wheel	F-wheel	F-wheel	F-wheel
Fan motor control	Transformer	EC-stepless	Transformer	EC-stepless
Max. fan speed	2230 o/min	1970 o/min	2230 o/min	1970 o/min
Automatic control standard	CS 50	CS 50	CS 50	CS 50
Filter type (SUP/EXTR)	F7/F7	F7/F7	F7/F7	F7/F7
SUP filter dimensions (WxHxD)	468x200x70mm	468x200x70mm	468x200x70mm	468x200x70mm
EXTR filter dimensions (WxHxD)	468x200x70 mm	468x200x70mm	468x200x70mm	468x200x70mm
Weight	85 kg	85 kg	85 kg	85 kg
Duct connection	Ø 200 mm	Ø 200 mm	Ø 200 mm	Ø 200 mm
Height	900 mm	900 mm	900 mm	900 mm
Width	900 mm	900 mm	900 mm	900 mm
Depth	550 mm	550 mm	550 mm	550 mm

13.4 Technical Data S7 R

	S7 RE	S7 RE EC	S7 RW	S7 RW EC
Rated voltage	230 V/50 Hz	230 V/50 Hz	230 V/50 Hz	230 V/50 Hz
Fuse	13 A	13 A	10 A	10 A
Rated current, total	10,7 A	8,9 A	3,3 A	1,5 A
Rated power, total	2464 W	2045 W	765 W	345 W
Rated power, electric batteries	1700 W	1700 W	-	-
Rated power, fans	2 x 375 W	2 x 175 W	2 x 375 W	2 x 175 W
Rated power, pre-heating	-	-	-	-
Fan type	F-wheel	F-wheel	F-wheel	F-wheel
Fan motor control	Transformer	EC-stepless	Transformer	EC-stepless
Max. fan speed	2000 o/min	2000 o/min	2000 o/min	2000 o/min
Automatic control standard	CI 50/CU 500*	CI 50/CU 500*	CI 50/CU 500*	CI 50/CU 500*
Filter type (SUP/EXTR)	F7/F7	F7/F7	F7/F7	F7/F7
SUP filter dimensions (WxHxD)	468x200x70 mm	468x200x70 mm	468x200x70 mm	468x200x70 mm
EXTR filter dimensions (WxHxD)	468x200x70 mm	468x200x70 mm	468x200x70 mm	468x200x70 mm
Weight	92 kg	92 kg	92 kg	92 kg
Duct connection	Ø 200 mm	Ø 200 mm	Ø 200 mm	Ø 200 mm
Height	900 mm	900 mm	900 mm	900 mm
Width	900 mm	900 mm	900 mm	900 mm
Depth	550 mm	550 mm	550 mm	550 mm

^{*} CI 50: Control Panel, CU 500: Circuit Board



14 Final Check

Control that:

- The duct insulation is in accordance with the manual and the technical documents
- Ducts are connected to the right nipples check against the unit drawings below
- Adjustment has been carried out in accordance with the manual and ventilation data documentation
- The unit operates normally at all stages
- Heating switches on



The installer may be held liable for any incorrect or defective installation.

S3 R Right model

S3 R Left model





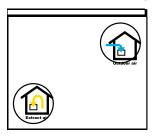
SL4 R Right model

SL4 R Left model





Unit top - air flow direction





Unit **bottom - air flow direction**

S4 R/S7 Right model

S4 R/S7 R Left model









15 Important Safety Instructions

To reduce the risk of fire, electric shock or injury, read all the safety instructions and warning texts before using the unit.

- This unit is only designed for ventilation air in buildings.
- It must not be used to extract combustible or flammable gases.
- Remove the power plug before commencing any service and maintenance work.
- Before you open the door, the unit must be dead and the fans must have been given time to stop (min. 3 minutes).
- The unit contains heating elements that must not be touched when they are hot.
- The unit must not be operated without the filters being in place.
- Do not cook any combustible substances or flame anything under the fan (only when a kitchen hood is connected).
- Do not leave a saucepan or frying pan containing oil or grease unsupervised (only when a kitchen hood is connected).
- · Follow the instructions in the user manual.



To maintain a good indoor climate, comply with regulations and, to avoid condensation damage, the unit must never be stopped apart from during service/maintenance or in connection with an accident.

16 Functional Description

In the (HR-R) rotor, the cold outdoor air and the warm extract air pass each other without being mixed. With this principle, a large part of the heat in the extract air will be transferred to the supply air (see drawings in Chap. 8). If the outdoor temperature is extremely low, a thermostat-controlled (EB1) heating element will also ensure that the supply air has the desired temperature. This supply air is passed via ducts and valves to living rooms and bedrooms. The extract air is extracted either from the same room or via door gaps/overflow gratings to toilets and wet rooms. The used air is passed via a duct system back to the unit, emits heat and is blown out of the building via a roof hat or wall grating.

The temperature of the supply air is controlled by the rotor. Only when the rotor is not able to maintain the set temperature, will the heating element start up. When there is no need for heating (for example in the summer), the rotor will stop.

16.1 Heating Elements

The heating elements are protected against overheating by the (**F20**) overheating thermostat, which switches off at 60 °C. As an additional safety measure, the (**F10**) overheating thermostat switches off at 85 °C. The F10 overheating thermostat can be reset manually by pressing the reset button. You will find the thermostat by opening the unit doors (located right above the heating element).

16.2 Operation via Kitchen Hood (SL4 R)

A - Knob for damper/timer

B - Pushbutton for light

Open the damper when preparing food. The damper closes automatically after a maximum of 60 minutes or if you turn the damper knob to \bullet as shown in Fig. 29. When the timer is activated, the air handling unit is forced in addition to the damper function.



This is purely a ventilation system and not a heating system. The home must be heated in the normal manner. The heat gained from heat recovery must be seen in relation to a situation in which the extract air is blown right out of the home without recovery.

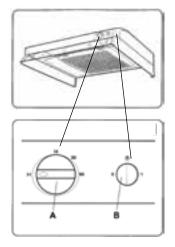


Fig. 29



17 Cleaning – Maintenance, S3 R



Before opening the door of the heat recovery system or carrying out maintenance on the kitchen hood: switch off the heat, let the fans continue for three minutes to remove hot air, remove the power from the unit and wait 2 minutes before opening the doors.

Fans:

Item nos. 6 and 7/Chap. 9 General Drawing. The fans must be cleaned once pr. year. The fans are cleaned with a small brush and compressed air, if available. NB! Do not use water. Dismantle the fan as follows: Open the doors as instructed. Pull out the electric quick-release contact for the motor. Unscrew 2 screws at the front of the motor's mounting plate. The fan can then be pulled carefully down and out of the unit.

Filters:

To preserve a healthy indoor environment, it is important to change filters when they are dirty. Dirty filters lead to:



Increased air resistance in the filter — less air in the home — the risk of bacterial growth in the filter — in the worst case scenario, the system can be damaged.

How often the filters need to be changed depends on the degree of contamination of the air where they are installed. In general, the filters need to be changed once a year, preferably in the autumn (after the pollen season). In areas with a lot of dust and contamination, the filters should be changed in the spring and autumn. The supply air filter and extract air filter (2 and 1) consist of a compact filter (F7). These are pushed into place.

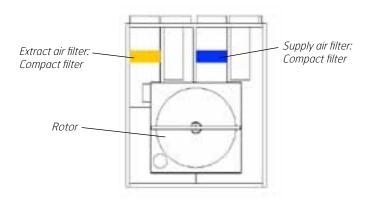
It is recommended that you order a filter subscription to ensure full benefit from the system and the cheapest prices.

Order no. for a complete set of filters: 12328

When changing filter, please perform an overall check of the ventilation unit.

Filter location

(the drawing shows the left model/the right model is inverted)



Rotor:

As the system has filters installed with a high tightness 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 60mm and max. pressure 80 bar. Ensure that the motor is not exposed to water during cleaning. Ensure that all seals around the rotor are intact and tight.



Do not use detergent that is harmful to aluminium or the environment.

Valves and

duct system: Clean the valves at least once a year. The duct system must be cleaned at least every 10 years.

Outdoor air

intake: Check once a year that the grille is not clogged.

Roof hat:

Check once a year that the drainage gap at the bottom is not clogged with leaves. This applies only if the system has a roof hat.





18 Cleaning - Maintenance SL4 R



Before opening the door of the heat recovery system or carrying out maintenance on the kitchen hood: Switch off the heat, let the fans continue for three minutes to remove hot air, remove the power from the unit and wait 2 minutes before opening the doors.

Fans:

Item pos. 5 and 6/Chap. 9 General Drawing, SL4 R. The fans must be cleaned once pr. year. The fans are cleaned with a small brush and compressed air, if available. Remove the fans as follows: (Fan item no. 6) Remove the cover in front of the fan by pressing the snap locks at the bottom of the cover. For both fans: pull the fan out of the track and disconnect the contact. The motor and fan blades are removed by unscrewing the 4 screws in the round motor plate and carefully pulling the motor out of the motor housing. Mounting takes place in the reverse order.

Filters:

To preserve a healthy indoor environment, it is important to change filters when they are clogged/dirty. Clogged filters lead to:

Increased air resistance in the filter — less air in the home — the risk of bacterial growth in the filter — in the worst case scenario, the system can be damaged.

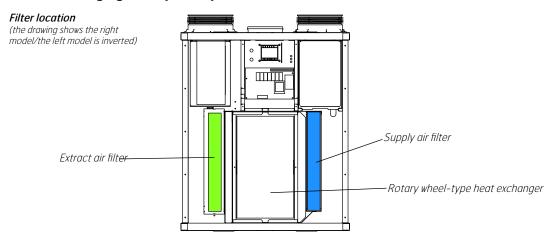


How often the filters need to be changed depends on the degree of contamination of the air where they are installed. In general, the filters need to be changed once a year, preferably in the autumn (after the pollen season). In areas with a lot of dust and contamination, the filters should be changed in the spring and autumn.

The supply air filter, which cleans the outdoor air (item no. 2) is a compact filter (filter class F7). The filter is pushed in place in the fixing rails. The extract air filter (item no. 1) is a compact filter (filter class F7) and is located in its own drawer which can be pulled right out after the finger screws have been removed. We recommended that you order a filter subscription for full benefit from the system and the cheapest prices.

Order no. for a complete set of filters: 12336

When changing filter, please perform an overall check of the ventilation unit.



Rotor:

As the system has filters installed with a high tightness 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 60mm and max. pressure 80 bar. Ensure that the motor is not exposed to water during cleaning. Ensure that all seals around the rotor are intact and tight.



Do not use detergent that is harmful to aluminium or the environment.

Valves and

duct system: Clean the valves at least once a year. The duct system must be cleaned at least every 10 years.

Outdoor air

intake: Check once a year that the grille is not clogged.

Roof hat: Check once a year that the drainage gap at the bottom is not clogged with leaves. This applies

only if the system has a roof hat.



19 Cleaning - Maintenance S4 R/S7 R



Before opening the door of the heat recovery system or carrying out maintenance on the kitchen hood: switch off the heat, let the fans continue for three minutes to remove hot air, remove the power from the unit and wait 2 minutes before opening the doors.

Doors: Opened by unscrewing the two screws in one door.

Fans: Item nos. 5 and 6/Chap. 9 General Drawings. The fans must be cleaned once pr. year. The fans are

cleaned with a small brush and compressed air, if available. NB! Do not use water. Disassemble as follows: Open the doors as directed. Pull out the electric quick-release contact for the motor. Unscrew 2 screws under the front edge of the motor's mounting plate. The fan can then be carefully pulled down

and out of the unit.

Filters: To preserve a healthy indoor environment, it is important to change filters when they are dirty. Dirty

filters lead to:

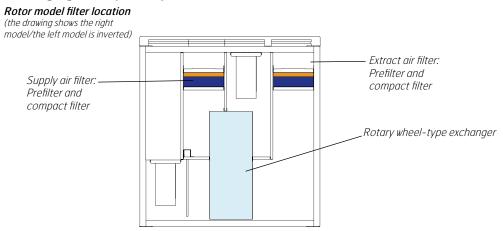
cheapest prices.

Increased air resistance in the filter — less air in the home — the risk of bacterial growth in the filter — in the worst case scenario, the system can be damaged.

How often the filters need to be changed depends on the degree of contamination of the air where they are installed. In general, the filters need to be changed once a year, preferably in the autumn (after the pollen season). In areas with a lot of dust and contamination, the filters should be changed in the spring and autumn. The supply air filter and extract air filter (2 and 1) consist of an EU 3 prefilter on top (coarse filter) and a compact filter (EU7). They are pushed into place and fastened with filter tighteners. It is recommended that you order a filter subscription to ensure full benefit from the system and the

Order no. for a complete set of filters: 12327

When changing filter, please perform an overall check of the ventilation unit.



Rotor:

As the system has filters installed with a high tightness 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 60mm and max. pressure 80 bar. Ensure that the motor is not exposed to water during cleaning. Ensure that all seals around the rotor are intact and tight



Do not use detergent that is harmful to aluminium or the environment.

Valves and

duct system: Clean the valves at least once a year. The duct system must be cleaned at least every 10 years.

Outdoor air

intake: Check once a year that the grille is not clogged.

Roof hat: Check once a year that the drainage gap at the bottom is not clogged with leaves. This applies only if

the system has a roof hat.





20 Fault Location



If a power failure occurs the ventilation unit will return to the factory settings when restarting.

Error:	
The fans do not function and/ or:	Do the following:
Control panel (Chap. 18) is turned off	 Check that the power cord is correctly inserted in the outlet Check that the fuses in the fuse box are active Check the cable between control panel and ventilation unit
Cannot be adjusted	- Deactivate forced ventilation from kitchen hood if connected to unit
The air quantity is considerably reduced	Do the following:
	- Filter (Pos.no. 1, 2/Kap. 9) my be clogged with dirt. Clean or change, see Cleaning - maintenance - Fan wheel must be cleaned, see Cleaning - maintenance



For other types of errors which are indicated on the control panel/hand terminal, please refer to separate automatics manuals.



If non of these measures solves the trouble, contact your supplier for service.

Please report the model type and serial number (found on the sign inside the ventilation unit/open door).





21 CE Declaration of Conformity

This declaration confirms that the products meet the requirements in the following Council Directives and standards:

2004/108/EC Electromagnetic Compatibility (EMC)

2006/95/EC Low-voltage Directive (LVD)

2006/42/EC Machinery Directive (Sikkerhet)ikkerhet)

Producer: FLEXIT AS, Televeien 15, N-1870 Ørje

Type: S3 R 2005 Ventilation Units

SL4 R 2006 Ventilation Units S4 R 2002 Ventilation Units S7 R 2002 Ventilation Units

Complies with the following standards:

Safety Standard	EN 60335-1:2002
EMF Standard:	EN 50366:2003
EMC Standard:	EN 55014-1.2000 EN 61000-3-2:2000 EN 61000-3-3:1995 EN 55014-2:2:1997

The product is CE-marked: Shown in the list above

FLEXIT AS 2010-02-12

Frank Petersen General Manager

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 shows that this product must not be treated as household waste. It must be taken to a reception station for recirculation of electric and electronic equipment.

By ensuring the correct disposal of the equipment, you will contribute to preventing the negative consequences for the environment and health that incorrect handling may entail. For further information on recirculation of this product, please contact your local authority, your refuse collection company or the company from which you purchased it.

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.





22 Product/Environmental Declaration

The declaration applies to the Flexit S3 R, S4 R, S4 R and S7 R ventilation units

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 rotary wheel-type heat 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, cardboard 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:

- Silicon 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 heating

elements with a high operating temperature.











