



Vallox TSK Multi 50 80 SC/SB

Export model

• 1.09.399E
• 17.12.2010
• Code 50/3601
• Code 80/3600
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Codes	
TSK Multi 50	3601
TSK Multi 80	3600



VALLOX TSK Multi 50



VALLOX TSK Multi 80



Simple Control

- Low-energy ventilation unit with low height, ensuring flexible location possibilities
- Can be installed above the door to the dwelling; maintenance operations can be carried out from outside the dwelling (blocks of flats).
- High heat recovery efficiency ($\eta > 80\%$)
- Integrated direct-current fans
- 4-step Vallox SC adjustment
- Good supply air filtering
- Good extract air filtering
- Motorised summer/winter damper (SB-malli)
- Antifreeze
- Hanging installation from the ceiling
- Duct outlets either behind or on both sides
- Unit height only
235 mm (Multi 50) or
295 mm (Multi 80)

TECHNICAL SPECIFICATION

	VALLOX TSK MULTI 80	VALLOX TSK MULTI 50
Electrical connection	230V, 50 Hz, $\approx 1,0A$	230V, 50 Hz, $\approx 0,64A$
Class of protection	IP 34	IP 34
Integrated direct-current fan		
Extract air	0,071Kw 0,5A 85dm ³ /s 100Pa	0,043Kw 0,32A 50dm ³ /s 50Pa
Supply air	0,071Kw 0,5A 70dm ³ /s 100Pa	0,043Kw 0,32A 40dm ³ /s 50Pa
Heat recovery	Cross-counterflow cell, $\eta > 80\%$	Cross-counterflow cell, $\eta > 80\%$
LHeat recovery bypass	Motorised damper in SB models No cell bypass in SC models	Motorised damper in SB models No cell bypass in SC models
Filters		
Supply air	G3	G3
Extract air	G3	G3
Weight	58.5kg	45kg
Power adjustment of ventilation	SC controller, 0-10 VDC Remote monitoring controller 0-10 VDC	SC controller, 0-10 VDC Remote monitoring controller 0-10 VDC
Options	SC controller SlimLine PTXPA SC cooker hood Electric preheating unit, max. 700 W Electric post-heating unit, max. 500 W Supply air fine filter, F7	SC controller SlimLine PTXPA SC cooker hood Electric preheating unit, max. 500 W Electric post-heating unit, max. 500 W Supply air fine filter, F7



VALLOX TSK MULTI

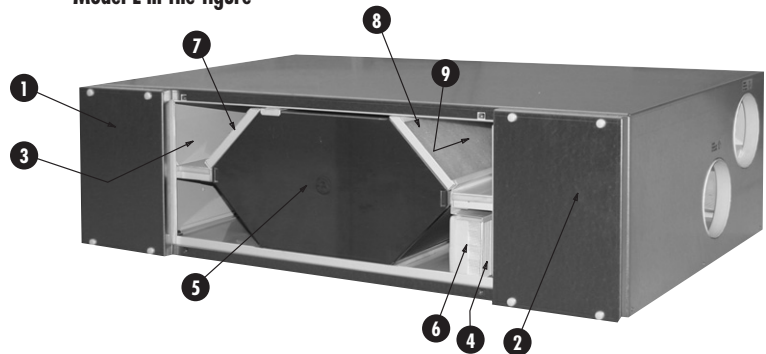
50SC/50SB/80SC/80SB

DIMENSIONS AND MAIN PARTS

Models

VALLOX TSK MULTI 50 R
VALLOX TSK MULTI 50 L
VALLOX TSK MULTI 80 R
VALLOX TSK MULTI 80 L

Model L in the figure



Main parts

- | | |
|-------------------------------|------------------------------------|
| 1 Extract air fan | 7 Outdoor air filter G3 |
| 2 Supply air fan | 8 Extract air filter G3 |
| 3 Preheating unit (option) | 9 Summer/winter damper (SB models) |
| 4 Post-heating unit (option) | 10 Simple Control (option) |
| 5 Heat recovery cell | 11 Connection box |
| 6 Outdoor air fine filter, F7 | |



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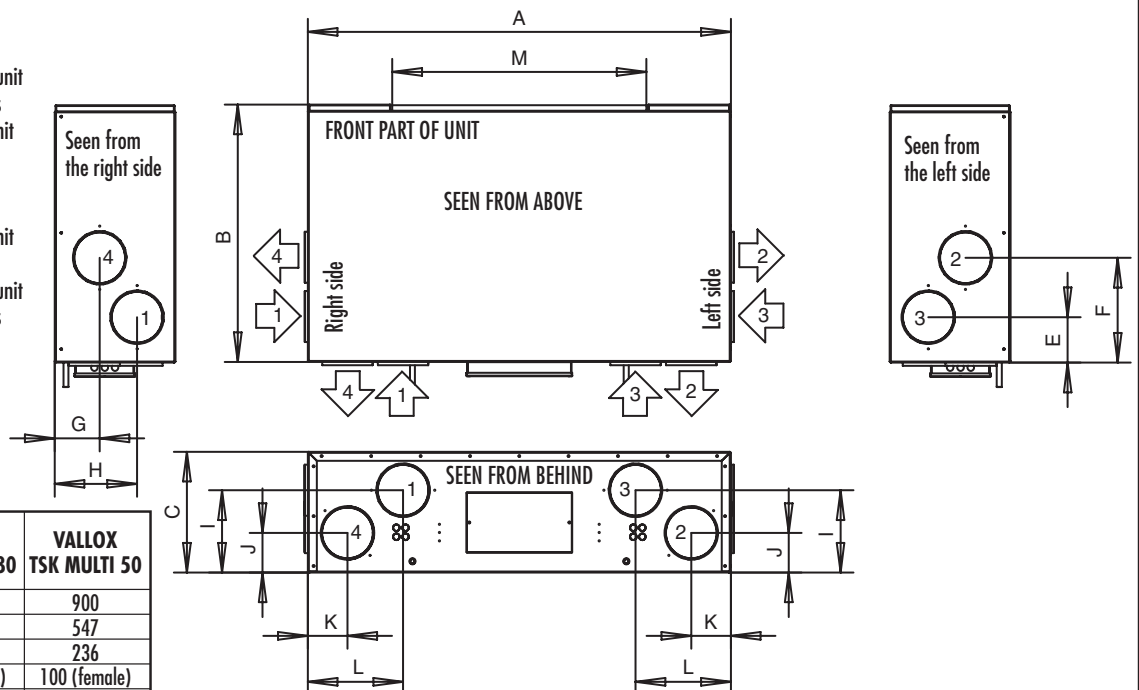
Dimensions and channel outlet options, Vallox TSK Multi 50/80

Model R:

1. Outdoor air to the unit
2. Supply air to rooms
3. Extract air to the unit
4. Exhaust air outside

Model L:

1. Extract air to the unit
2. Exhaust air outside
3. Outdoor air to the unit
4. Supply air to rooms



MEASUREMENT	VALLOX TSK MULTI 80	VALLOX TSK MULTI 50
A	1026	900
B	626	547
C	293	236
D	125 (female)	100 (female)
E	110	87
F	254	197
G	110	86
H	200	161
I	200	161
J	96	86
K	96	96
L	231	206
M	624	498

VALLOX TSK MULTI

50SC/50SB/80SC/80SB



PERFORMANCE / TSK MULTI 50

Air volumes

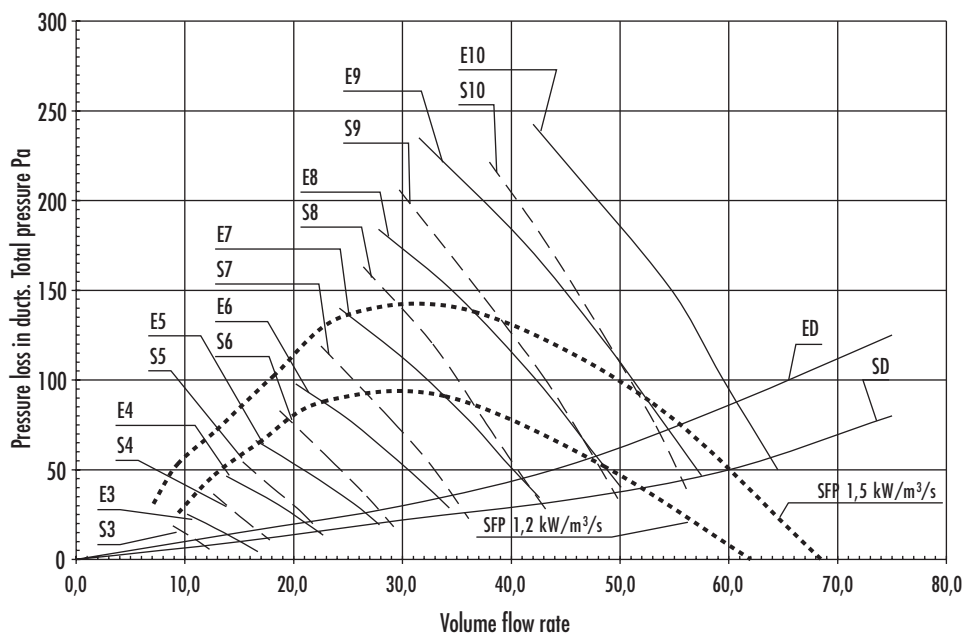
Vallox TSK Multi 50 Supply air (F7+G3), extract air (G3)

— S = Supply air, 3...10 V
— E = Extract air, 3...10 V

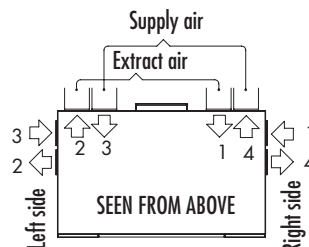
ED and SD are examples of pressure losses in supply and extract ducts

SFP (Specific Fan Power)
guideline value < 2.5 (kW m³/s)

$$SFP = \frac{\text{Input power (total) (W)}}{\text{Air flow (max.) (dm}^3/\text{s)}}$$



Measuring points after the connection outlet.
Fan curves indicate the total pressure available for duct losses.



Model L:

1. Extract air to the unit
2. Exhaust air outside
3. Outdoor air to the unit
4. Supply air to rooms

Model R:

1. Outdoor air to the unit
2. Supply air to rooms
3. Extract air to the unit
4. Exhaust air outside

Fan control voltage with SC controller (V)	Total input power W
3	10
4	16
5	20
6	31
7	42
8	59
9	83
10	104

Sound values		Sound power level from the ventilation unit to supply air ducts by octave band L_{w} , dB								Sound power level from the ventilation unit to extract air ducts by octave band L_{w} , dB															
		ADJUSTMENT POSITION/AIR FLOW								ADJUSTMENT POSITION/AIR FLOW															
AP qV , dm^3/s		10 53,3	9 46,6	8 40,7	7 36,1	6 29,2	5 22,5	4 17,8	3 12,6	10 59,4	9 52,9	8 47,3	7 39,3	6 31,6	5 25,5	4 22,7	3 16,7								
Medium frequency of the octave band, Hz	63	77,9	77,3	74,8	71,1	72,6	69,0	69,4	63,1	71,8	71,6	68,9	65,9	65,7	60,9	58,2	53,4								
	125	76,3	75,0	73,5	71,0	69,0	67,0	64,7	64,8	69,9	68,7	66,4	64,3	62,3	59,0	56,9	54,3								
	250	76,6	76,7	75,1	73,0	70,4	70,0	64,4	55,4	68,8	67,6	65,9	63,3	61,8	58,1	53,9	45,0								
	500	76,3	75,7	71,3	69,6	61,6	57,6	54,0	46,4	56,9	56,2	53,0	53,6	42,8	38,1	33,9	27,5								
	1000	69,1	65,4	62,8	58,9	53,2	49,5	45,5	38,4	56,5	53,0	49,7	45,9	41,6	38,0	34,5	26,2								
	2000	61,6	58,5	56,0	53,1	49,1	43,5	38,0	26,0	44,5	42,0	39,3	36,3	32,0	26,7	20,7	*								
	4000	55,6	52,6	48,7	43,8	36,9	29,8	23,3	*	35,1	32,2	28,6	23,9	16,5	*	*	*								
	8000	39,3	35,3	31,2	24,5	*	*	*	*	*	*	*	*	*	*	*	*								
L_w , dB		83,1	82,4	80,1	77,5	75,9	73,7	71,7	67,4	75,2	74,5	72,1	69,5	68,4	64,3	61,5	57,2								
L_{wA} , dB(A)		75,5	74,2	71,3	69,0	64,3	62,4	57,3	51,5	62,9	61,2	59,3	57,1	54,6	50,2	46,6	41,5								
		A-weighted sound pressure level dB (A) coming from the unit through the envelope in rooms where the unit has been installed (10 m ² :n sound absorption)								VALLOX TSK MULTI 50															
		ADJUSTMENT POSITION/AIR FLOWS (supply/extract)																							
		AP supply/extract, dm^3/s		10 45,6 / 56,4		9 40,3 / 49,3		8 35,0 / 43,1										7 29,8 / 37,7		6 24,5 / 31,1		5 19,5 / 25,1		4 15,7 / 20,5	
L_{pA} , dB(A)		50,7		48,7		47,2		43,3		41,0		37,5		33,3		26,9									

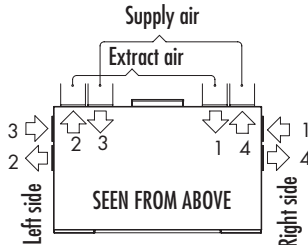


VALLOX TSK MULTI

50SC/50SB/80SC/80SB

PERFORMANCE / TSK MULTI 80

Measuring points after the connection outlet.
Fan curves indicate the total pressure available for duct losses.



Model L:

1. Extract air to the unit
2. Exhaust air outside
3. Outdoor air to the unit
4. Supply air to rooms

Model R:

1. Outdoor air to the unit
2. Supply air to rooms
3. Extract air to the unit
4. Exhaust air outside

Fan control voltage with SC controller (V)	Total input power W
2	8
3	10
4	18
5	30
6	45
7	72
8	108
9	150
10	165

Air volumes

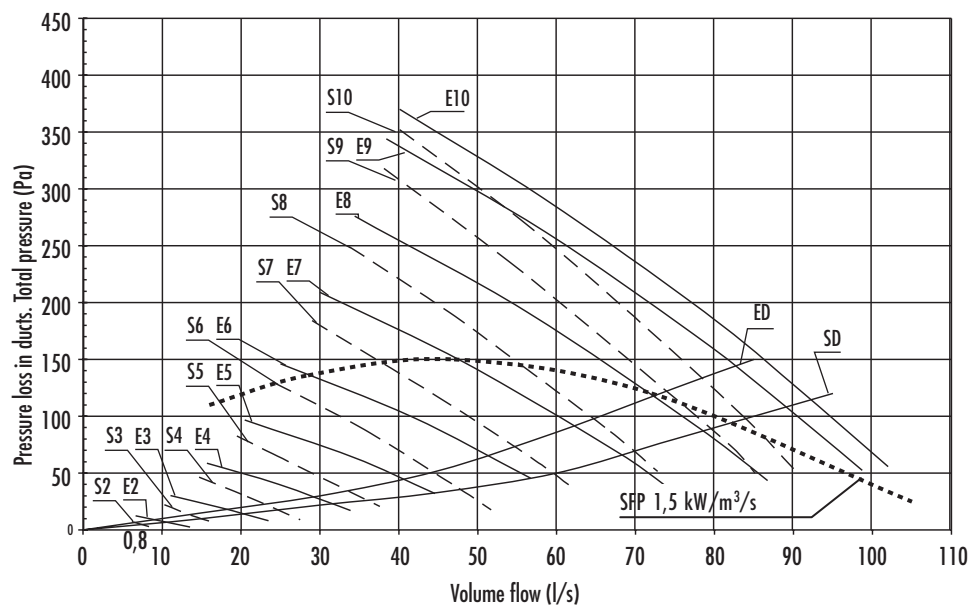
Vallox TSK Multi 80 supply air (F7+G3), extract air (G3)

— S = Supply air, 2...10 V
— E = Extract air, 2...10 V

ED and SD are examples of pressure losses in supply and extract ducts

SFP (Specific Fan Power)
guideline value < 2.5 (kW m³/s)

$$SFP = \frac{\text{Input power (total) (W)}}{\text{Air flow (max.) (dm}^3/\text{s)}}$$

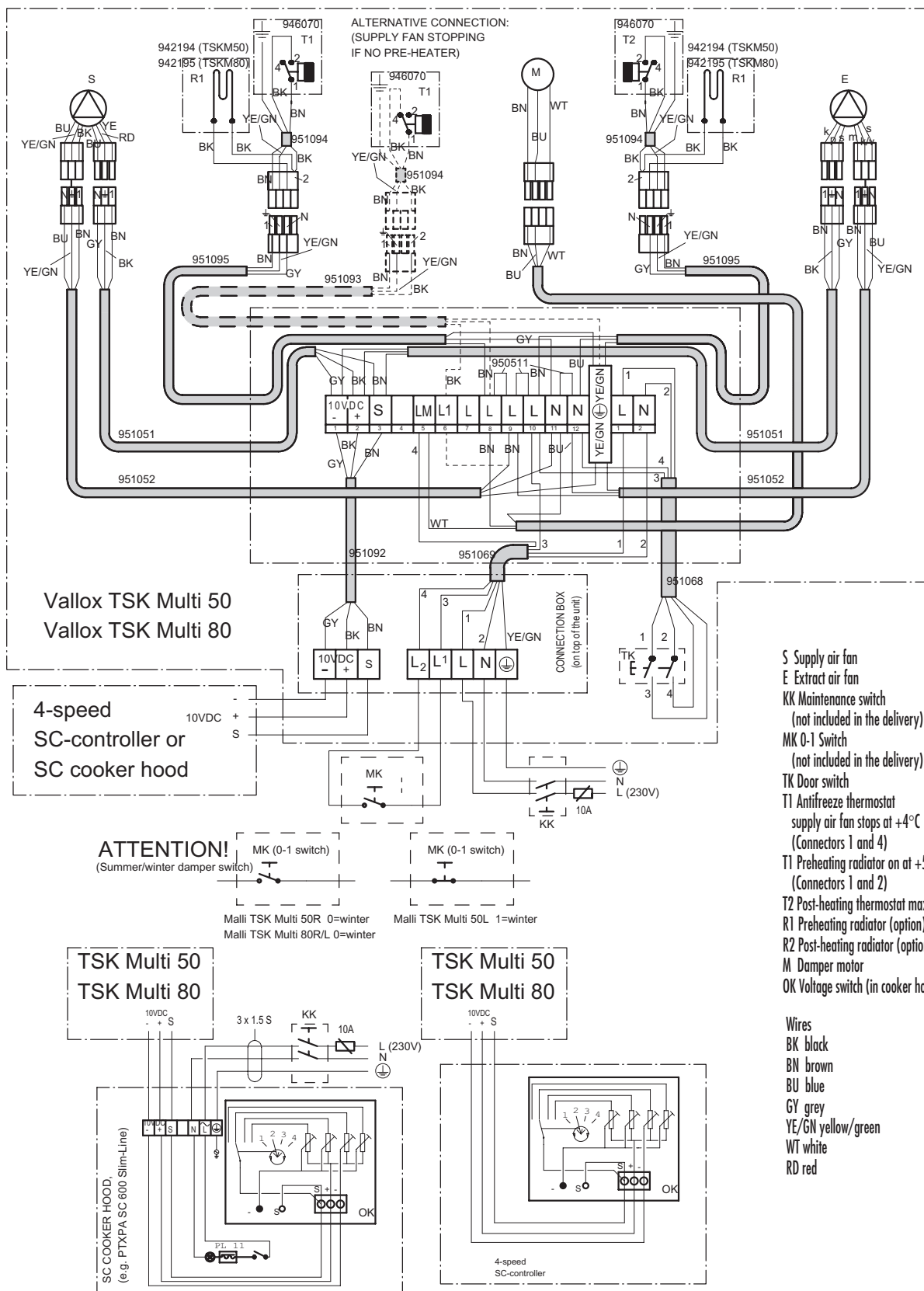


Sound values		Sound power level from the ventilation unit to supply air ducts by octave band L _w , dB									Sound power level from the ventilation unit to extract air ducts by octave band L _w , dB								
		ADJUSTMENT POSITION/AIR FLOW									ADJUSTMENT POSITION/AIR FLOW								
AP qV, dm³/s		10 84,7	9 83,9	8 75,8	7 62,1	6 49,7	5 38,4	4 26,7	3 17,7	2 10,5	10 93,8	9 91,3	8 80,8	7 71,2	6 59,1	5 46,8	4 35,3	3 24,7	2 14,5
Medium frequency of the octave band, Hz		77,1	77,3	76	74,3	74,6	70,1	65,3	63,2	55,2	49,9	49,2	47,8	47,7	44,5	41,7	35,4	32,9	24,3
		77,7	78,5	75,2	71,7	70,1	66,9	64,7	56	43,6	56,4	57,2	53,7	50,5	47,6	44,5	48,6	37,2	25,9
		78,2	77,9	80,3	78,1	70	63,4	56,6	47,6	36,1	57,1	57,1	58	54,6	51,2	44,3	37,1	29,7	20
		75,6	71,6	68	64,1	60,1	53,7	47	38,2	25,5	54,9	54,7	49,1	45,6	41,7	36,6	30,7	22,8	11,7
		69,9	67,6	63,6	59,3	54,4	48,4	41,2	31,7	18,7	51,7	50,8	47,7	44,5	40,2	34,9	29,1	20,4	12,9
		63,1	62,1	59,1	55,2	50,6	44,2	35,2	23,3	*	44,1	43,2	40,2	37	33,5	28,3	20	8,5	*
		54,1	53,3	50,1	45,4	39,6	32,5	21,9	*	*	33,1	32,1	28,7	24,4	19,3	*	*	*	*
		38,9	38	34,2	29,1	20,2	*	*	*	*	18,2	*	*	*	*	*	*	*	*
		83,5	83,2	82,8	80,4	77	72,4	68,4	64,1	55,6	61,9	61,9	60,3	57,2	53,9	48,9	49,2	39,3	29
		75,7	74,1	74,5	71,1	63,9	58,3	52,8	44,6	34,3	56	55,6	53,7	50	45,9	40	37,1	26,6	17,1
		A-weighted sound pressure level dB (A) coming from the unit through the envelope in rooms where the unit has been installed (10 m²:n sound absorption)									VALLOX TSK MULTI 80								
AP tulo/poisto, dm³/s		ADJUSTMENT POSITION/AIR FLOWS (supply/extract)																	
		10 78,1 / 85,1	9 73,4 / 81,6	8 64,4 / 72,9	7 54,6 / 62,8	6 43,3 / 53	5 33,8 / 42,5	4 24,7 / 32,3	3 15,2 / 21,9	2 8,4 / 13									
L _{pA} , dB(A)		52,1	51	48,4	46,4	42,8	35,2	29,3	21,2	8,5									



Vallox TSK Multi 80 and 50 Internal and external electrical diagram

Antifreeze by stopping the supply air fan or with preheating radiator



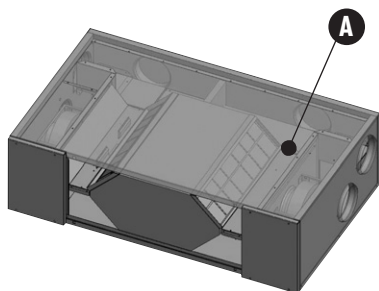


VALLOX TSK MULTI

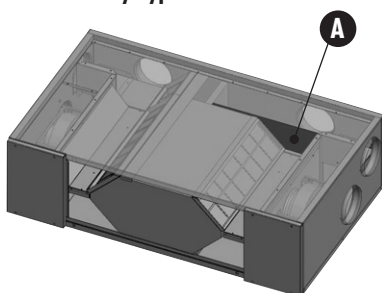
50SC/50SB/80SC/80SB

STANDARD/OPTION

Heat recovery active



Heat recovery bypass active



The damper is controlled electronically with a separate 0-1 switch mounted in the dwelling.

Heat recovery bypass (SB models)

In winter use the heat recovery cell of Vallox TSK Multi 50/80 recovers heat from the air leaving the dwelling and uses it to heat the air coming from the outside.

In summer use when it is warm outside, it is unnecessary to heat outdoor air. The heat recovery cell is then bypassed with the damper (A) in VALLOX TSK Multi 50/80. The damper is controlled using a separate 0-1 switch (not included in the unit delivery). The switch is mounted in the dwelling at the same time with the electric installation for the unit. In the summer position air flow through the cell is prevented, and heat recovery bypass is activated.

Air filtering

VALLOX TSK Multi 50/80 has G3 coarse filters for both extract and supply air before the fans. The unit is also equipped with an F7 fine filter, which captures fine dust and pollen as well as dust not seen to the eye. The filters need to be in place in the unit whenever ventilation is in operation.

Antifreeze

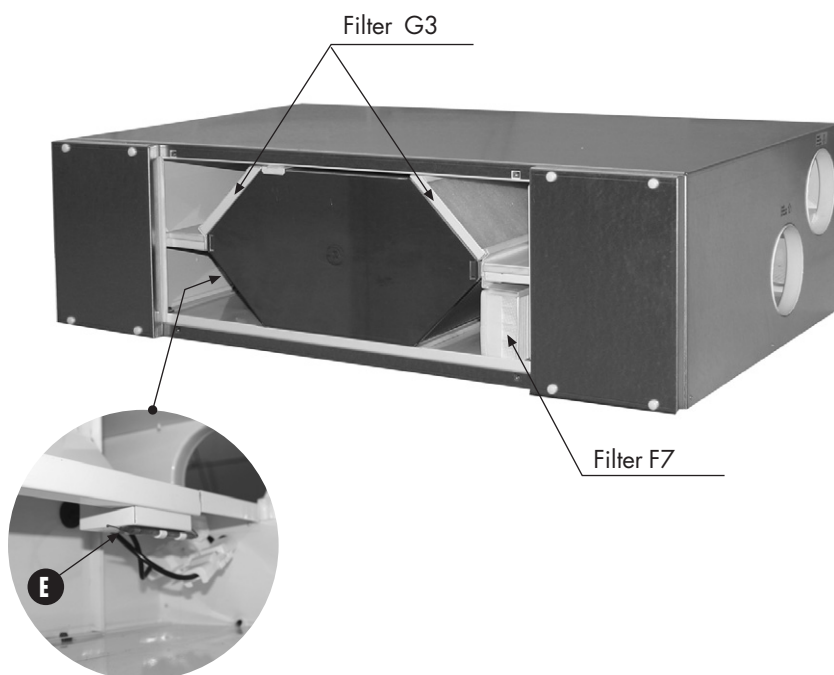
Water condensing from extract air may freeze in the heat recovery cell. The unit is equipped with an antifreeze thermostat, which stops the supply air fan and thus prevents freezing. Alternatively, the unit may have been equipped with a preheating unit, which switches on when needed.

Stopping the supply air fan

Antifreeze thermostat stops the supply air fan whenever the temperature of extract air after the cell falls below +5°C. The fan restarts when temperature has risen by circa three degrees, i.e. to 8°C. The limit of the thermostat (E) can be adjusted. If the unit includes a preheating radiator (F), the supply air fan cannot be stopped.

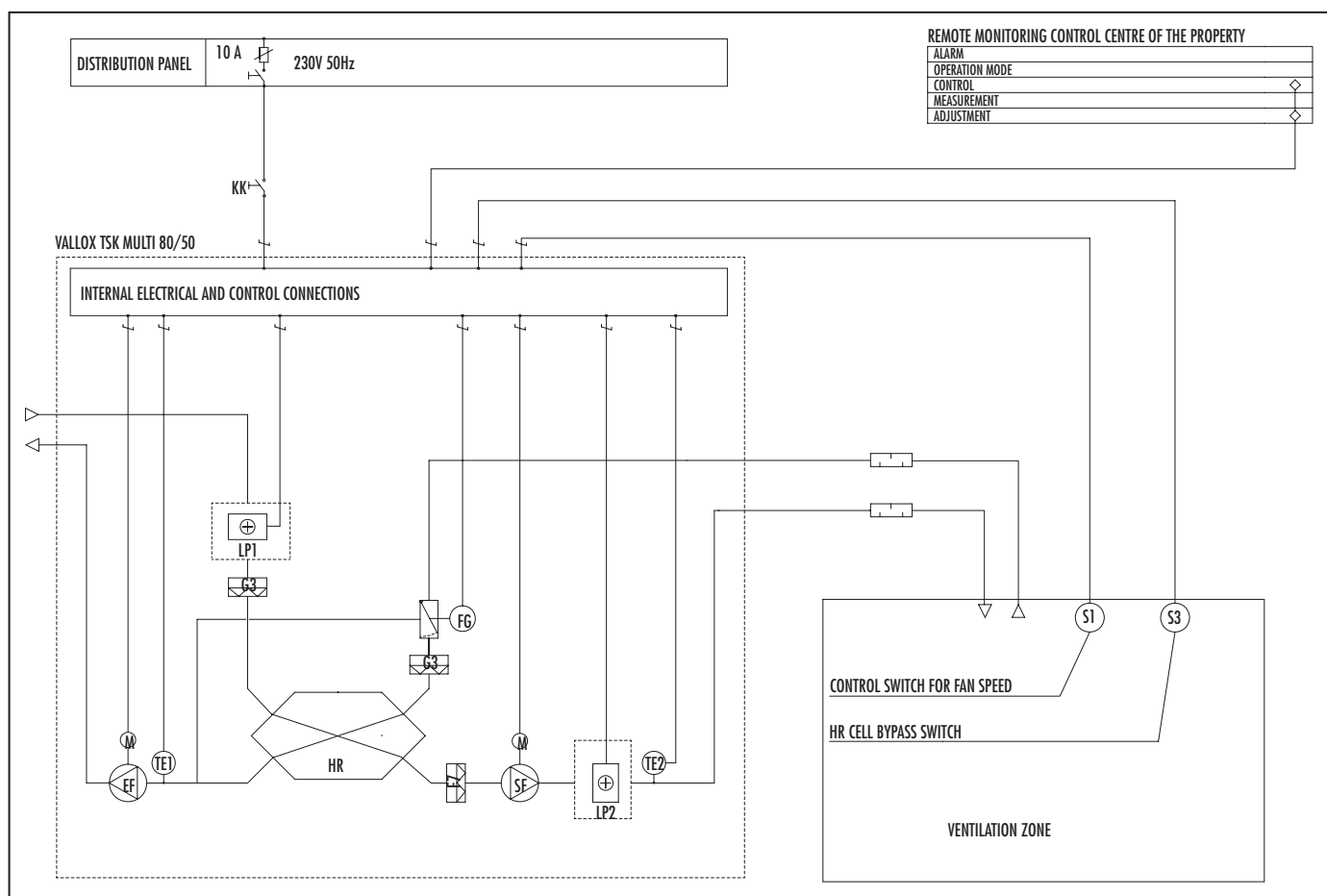
Outdoor air preheating (option)

The unit may have been equipped with a preheating unit at the factory. If this is the case, the antifreeze thermostat switches the preheating unit on when extract air temperature after the cell falls below +5°C. The preheating radiator switches off when temperature has risen to +8°C. The preheating radiator heats outdoor air before the heat recovery cell and prevents it from freezing. In very cold temperatures the preheating radiator is not enough to heat maximum air flow to a sufficient degree (in a temperature of -30°C, maximum air flow is 30 dm³/s). The limit of the thermostat can be adjusted.





CONTROL DIAGRAM AND DESCRIPTION OF OPERATION



Control of operation

Means for disconnection from the supply mains has to be incorporated in the fixed wiring and shall have a contact separation in all poles to provide full disconnection. After starting, the unit operates at the power selected on the fan speed adjustment switch. The unit also has a safety switch, which stops power supply when the maintenance door of the unit is opened.

Fan speed adjustment

Cam switch

The fans of the unit, SF and EF, are controlled depending on operating conditions with a separate 4-step SC cam switch located in the ventilation zone.

Voltage signal control

The fan power of the unit can be controlled steplessly with voltage signal 0...10 VDC. With a voltage signal lower than 1.5 VDC, the fans will stop.

Supply air temperature

Supply air temperature can be raised using a post-heating radiator, which is controlled by thermostat TE2.

Heat recovery bypass

The bypass (FG) of the heat recovery cell HR in summer is done with a switch mounted indoors.

Heat recovery antifreeze

The antifreeze thermostat TE1 of the HR cell stops supply air fan SF, preventing the HR cell from freezing. The fan starts automatically as soon as the risk of freezing has passed. The operating point of the antifreeze thermostat can be changed; the factory setting is +5 °C.

Alternatively, the unit may have been equipped with preheating radiator LP1, controlled by antifreeze thermostat TE1. When there is a risk of freezing, preheating radiator LP1 starts to heat air coming from outside to the unit, thereby preventing the HR cell from freezing. In this case, the stopping function of the supply air fan is not in use in a freezing situation.

Parts list VALLOX TSK MULTI 50/80

Code	Name	Technical data (factory settings in parentheses)	Standard/ Option
G3	Filter	Supply air	G3
		Supply air	F7
		Extract air	G3
FG	HR bypass damper* Motorised	Standard	
HR	Heat recovery cell	Cross-counterflow cell, efficiency 80%	Standard
EF	Extract air fan	TSK MULTI 50	Standard
		TSK MULTI 80	
SF	Supply air fan	TSK MULTI 50	Standard
		TSK MULTI 80	
LP1	Preheating radiator	TSK MULTI 50	Standard
		TSK MULTI 80	
LP2	Post-heating radiator max.	0.5 kW	Option
TE1	HR antifreeze thermostat	Factory setting +5°C	Standard
TE2	Post-heating thermostat	Factory setting 10°C	Option
S1	Control switch for fan speed	0–10 VDC 4-step cam switch	Option

* SC model has no heat recovery cell bypass or bypass damper



VALLOX TSK MULTI

50SC/50SB/80SC/80SB

INSTALLATION

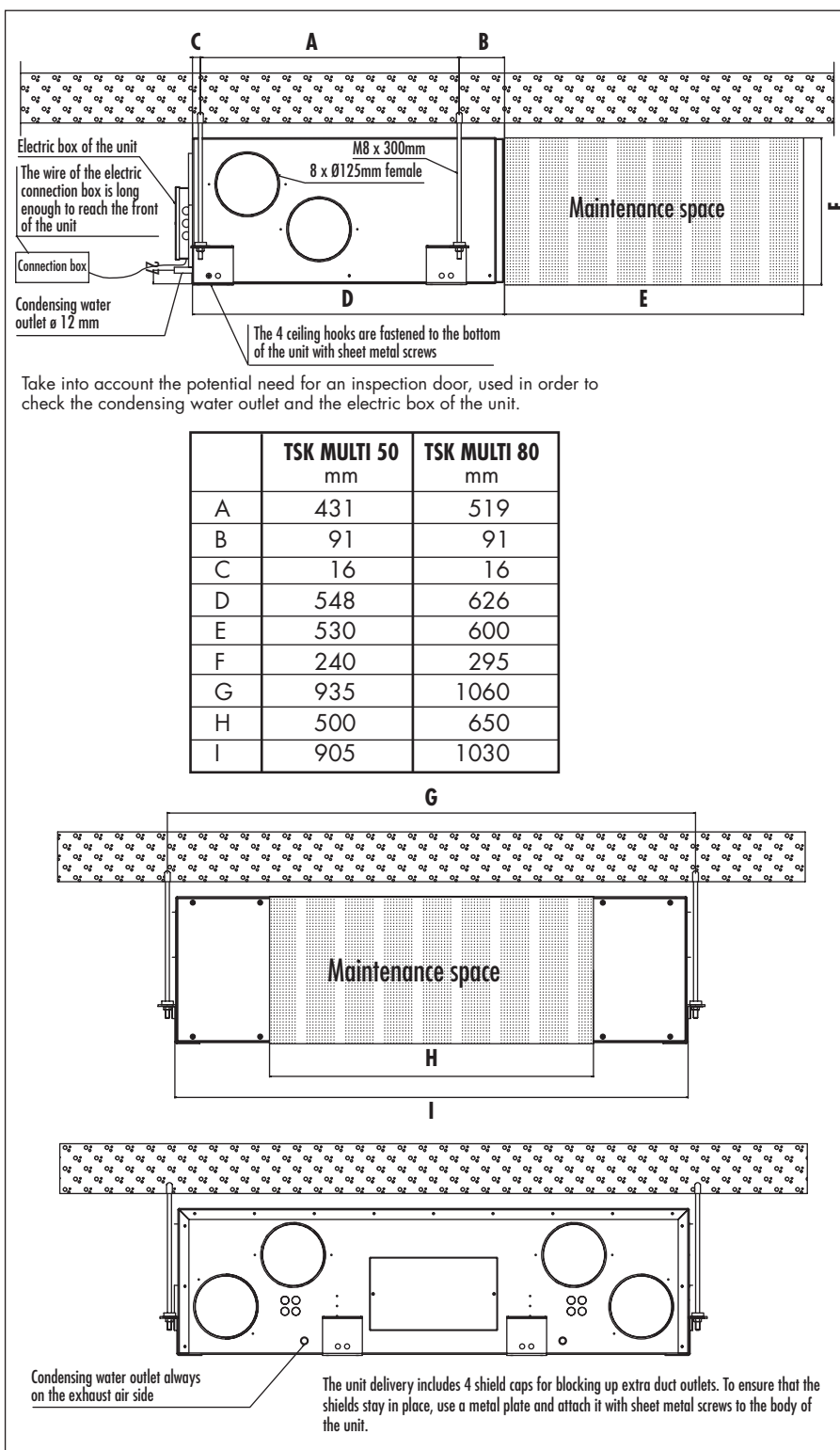
VALLOX TSK MULTI 50/80 has to be mounted in a place where temperature does not fall below +10 °C. Without protective casing, the unit must be located in a place with no acoustic disturbance: a storeroom, utility room, suspended ceiling etc.

Mounting

VALLOX TSK Multi 50/80 is normally mounted to a ceiling with 4 fastening hooks delivered with the unit. The weight of the unit, 45 kg, has to be taken into account during fastening.

Condensing water

The delivery includes a water seal. With a pipe connected to the water seal, water condensing from extract air can be led to a floor drain (not straight to the drain). The pipe must not rise after the water seal. The unit has to be mounted level with the horizontal in order to ensure that condensing water can get out of the unit.



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