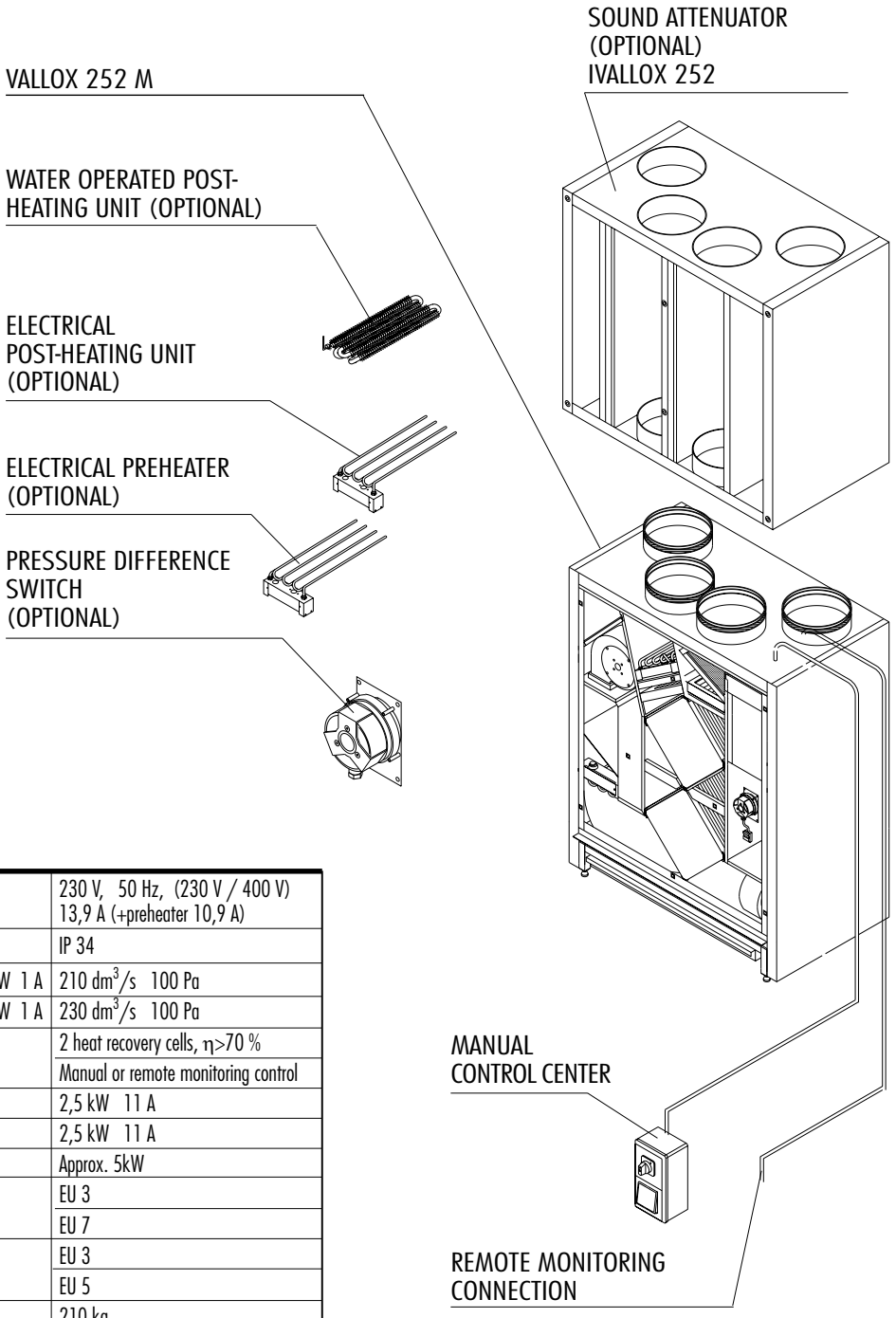
VALLOX 252 M

VALLOX-product code:	3158500 L
VALLOX 252 M	3158510 R
HVAC code:	7911076 L
VALLOX 252 M	7911077 R



TECHNICAL SPECIFICATION

Power supply		230 V, 50 Hz, (230 V / 400 V) 13,9 A (+preheater 10,9 A)
Protection class		IP 34
Fans	Supply air 2x230 W 1 A	210 dm^3/s 100 Pa
	Discharge air 2x230 W 1 A	230 dm^3/s 100 Pa
Heat recovery		2 heat recovery cells, η>70 %
Heat recovery bypass		Manual or remote monitoring control
Preheater		2,5 kW 11 A
Electric post-heating unit		2,5 kW 11 A
Water post-heating unit		Approx. 5kW
Filters	Supply air	EU 3
		EU 7
	Discharge air	EU 3
		EU 5
Weight/basic unit		210 kg
Ventilation adjustment options		– manual control (manual control unit)
		– remote monitoring control
Options		– sound attenuator
		– preheater
		– electric post-heating unit
		– water post-heating
		– pressure difference switch unit

VALLOX 252 M

OPERATING PRINCIPLE OF THE VENTILATION UNIT

Models:
VALLOX 252 M L
VALLOX 252 M R

VALLOX 252 M removes contaminated air and replaces it with filtered and heated outdoor air.

Efficient filtering of outdoor air (EU3 + EU7) prevents harmful particles from entering the ductwork and rooms via the unit. Good filtering of discharge air (EU3 + EU5) diminishes the contamination of the unit and ensures effective operation of heat recovery and the discharge air fans. Clogging of the filters and the ductwork can be monitored if the unit is equipped with pressure difference switches.

With efficient 2-step heat recovery, most of the heat of contaminated discharge air can be transmitted to outdoor air coming inside. The efficiency of the heat recovery cells is approx. 70%, or 75...80% if supply air fan heat is taken into account. If outdoor air does not get sufficiently warm in the heat recovery cells, it is possible to use an (optional) heating unit operated by water or electricity.

In the summertime, needless heating of outdoor air can be avoided with the heat recovery bypass function, operated either manually or by remote control.

The automatic defrosting of the heat recovery cells intermittently stops the supply air fans when the temperature of discharge air goes under the pre-set threshold value. To avoid or to decrease the stopping of the supply air fans, supply air can be heated with an electrical preheater. If the unit is equipped with a preheater, defrosting starts when outdoor air temperature goes below ca. -15/-25°C (max./min. supply air stream). Without preheating, the operation starts when outdoor air temperature falls below ca. -5°C.

VALLOX 252 M can be operated with the manual control unit contained in the delivery. With the manual control unit, you can select the min. or max. ventilation power, and stop the unit. The control unit also features a heat recovery bypass switch. The manual control unit cannot be used in remote monitoring control.

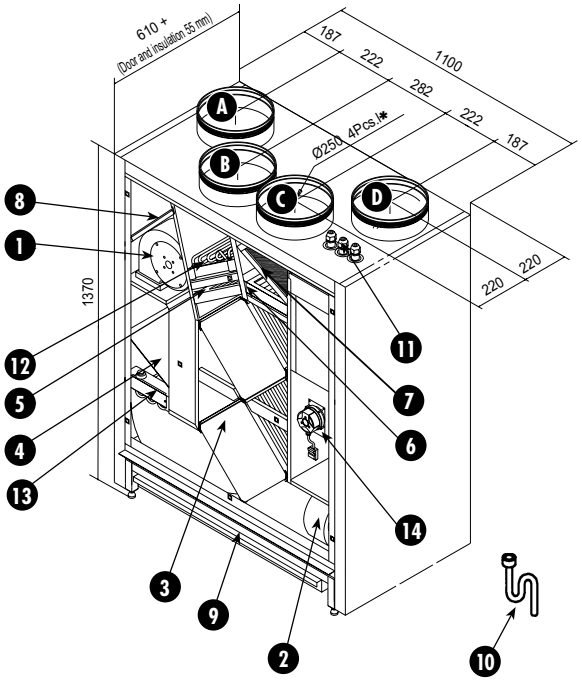
In remote monitoring, you can stop the unit, and adjust three different power positions (min, half, max). Heat recovery bypass can also be controlled in remote monitoring. Control voltage in remote monitoring is 24 VAC.

The unit gives potential-free signals of operation modes of the selected power positions and the optionally installed pressure difference switches of the ductwork.

The unit can supply control voltage (24VAC) to separate damper motors of the outdoor air and extract air ducts. This control voltage is switched off when the unit is stopped. The function can be used in both manual and remote monitoring control.

The separate damper motors are not included in the delivery.

* detachable inner coupling



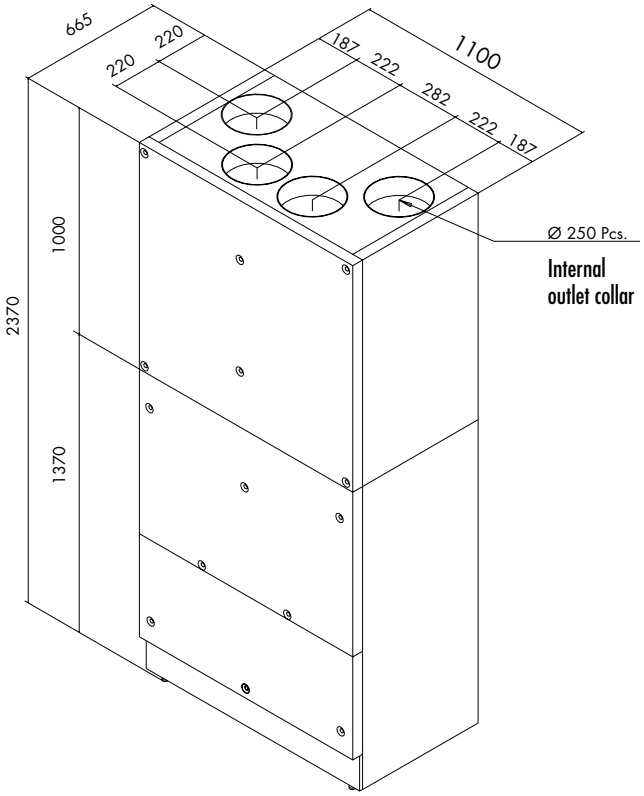
VALLOX 252 M-L
- A = OUTDOOR AIR
- B = SUPPLY AIR
- C = DISCHARGE AIR
- D = EXTRACT AIR

VALLOX M 252-R
- A = EXTRACT AIR
- B = DISCHARGE AIR
- C = SUPPLY AIR
- D = OUTDOOR AIR

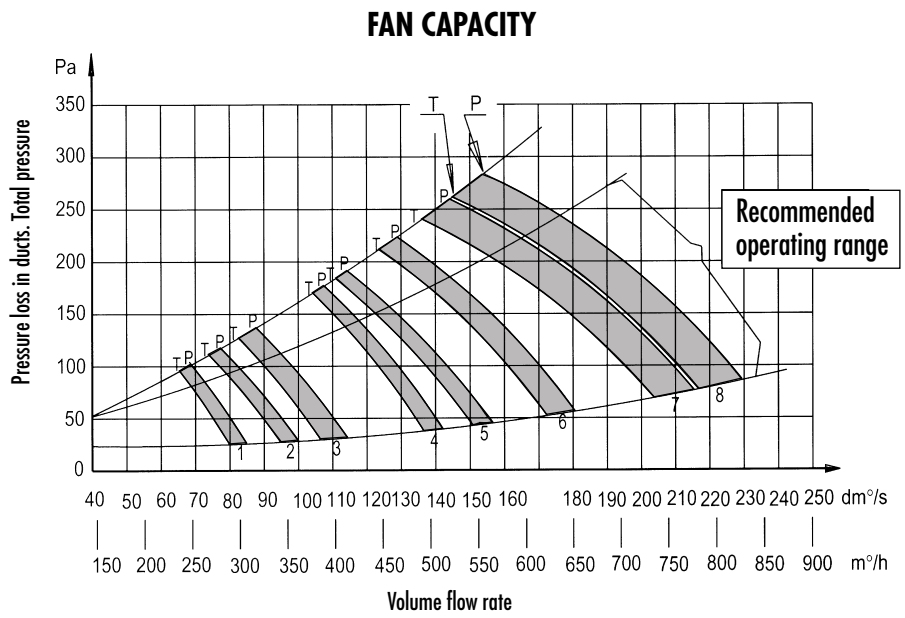
Main parts
1. Supply air fans
2. Discharge air fans
3. Heat recovery cells
4. Heat recovery bypass
5. Supply air filter EU7
6. Discharge air filter EU5
7. Discharge air filter EU3
8. Outdoor air filter EU3
9. Condensing water reservoir
10. Condensing water outlet
11. Electrical connection lead-throughs

Optional equipment
12. Post-heating unit
    • water operated or electrical
13. Preheater
    • electrical
14. Pressure difference switch unit

Sound attenuator unit
Installed above the unit

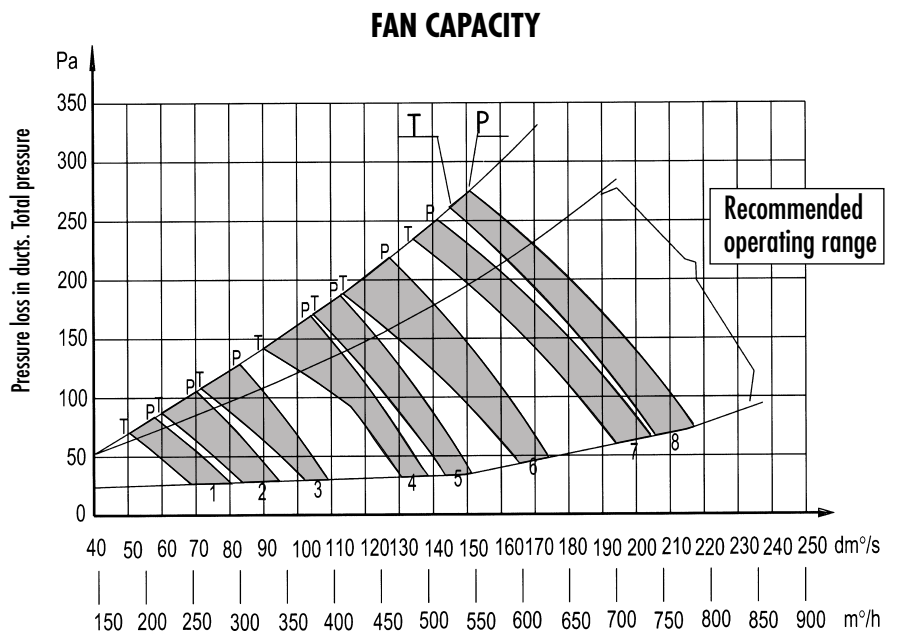


VALLOX 252 M



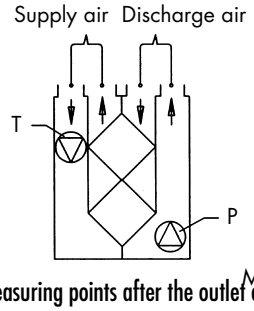
Fan curves: P = discharge air fan, T = supply air fan

VALLOX 252 M with Sound Attenuator



Fan curves: P = discharge air fan, T = supply air fan

VALLOX 252 M Measuring Points

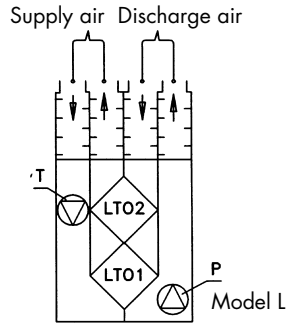


Measuring points after the outlet collar.

Fan curves indicate the total pressure available for duct losses.

Fan speeds	Control voltage V	Air flow l/s	Input power W
1	90	80	200
2	100	95	230
3	110	110	275
4	130	135	350
5	140	150	390
6	160	175	450
7	200	205	590
8	230	230	675

VALLOX 252 M with Sound Attenuator Measuring Points



Measuring points after the outlet collar.

Fan curves indicate the total pressure available for duct losses.

Fan speeds	Control voltage V	Air flow l/s	Input power W
1	90	74	200
2	100	85	230
3	110	99	275
4	130	127	350
5	140	143	390
6	160	170	450
7	200	206	590
8	230	220	675

VALLOX 252 M

SOUND VALUES

- Sound power levels in the ducts measured in accordance with the standard ISO/DIS 5135:1995.
- Sound pressure levels in the room (10 m² sound absorption) determined according to the regulation 4873/531/84 issued by the Finnish Ministry of Environmental Affairs

	Hz	Sound power level from VALLOX to supply air ducts by octave band L_W, dB CONTROL POSITION / AIR FLOW 1 76l/s	4 138 l/s	6 169l/s	8 208 l/s	Sound power level from VALLOX to discharge air ducts by octave band L_W, dB CONTROL POSITION / AIR FLOW 1 85 l/s	4 141 l/s	6 179/s	8 226 l/s
Medium frequency of the octave band, Hz	**63**	62.0	65.5	68.0	69.5	63.0	68.5	72.0	74.5
	125	55.0	60.0	63.5	67.0	59.0	66.0	68.5	72.0
	250	48.0	55.5	61.0	64.5	47.5	57.0	61.0	66.0
	500	36.0	44.5	49.5	54.5	36.5	43.5	48.0	52.0
	1000	38.5	43.5	47.0	50.0	36.0	43.5	48.0	49.5
	2000	28.5	38.5	45.0	50.0	28.0	38.5	45.0	49.5
	4000	20.0	30.0	35.0	39.5	15.5	28.5	34.0	38.0
	8000		20.0	27.0	32.0		18.5	27.0	31.0
L_W, dB		63.0	66.5	70.0	72.0	64.5	70.5	74.0	77.0
L_WA dB(A)		44.0	50.5	55.5	59.0	45.0	53.5	57.0	61.0
		Sound power level coming from VALLOX through the envelope to the rooms where the unit has been installed CONTROL POSITION / l/s 1 78/85	4 129/139	6 166/176	8 212/217	**VALLOX 252 M**			
L_pA, dB(A)		33	40	44	47				

L_pA = A-weighted sound pressure level (10 m² sound absorption)

	Hz	Sound power level from VALLOX to supply air ducts by octave band L_W, dB CONTROL POSITION / AIR FLOW 1 77 l/s	4 133 l/s	6 169l/s	8 209 l/s	Sound power level from VALLOX to discharge air ducts by octave band L_W, dB CONTROL POSITION / AIR FLOW 1 80/s	4 135 l/s	6 167 l/s	8 204 l/s
Medium frequency of the octave band, Hz	**63**	55.0	61.0	63.0	66.5	55.5	59.5	63.0	67.0
	125	52.0	57.5	60.0	62.5	53.5	59.0	62.5	65.0
	250	33.0	40.5	46.5	50.5	34.0	43.0	48.0	51.5
	500	18.0	27.5	35.0	41.5		25.5	31.0	36.5
	1000	13.5	16.0	25.0	32.0		17.0	24.5	30.0
	2000	14.0		19.0	27.0			20.5	27.0
	4000				15.5				18.5
	8000								
L_W, dB		57.0	62.5	65.0	68.0	57.5	62.5	65.5	69.0
L_WA dB(A)		35.5	41.0	44.5	48.0	37.0	42.5	46.5	49.5
		Sound power level coming from VALLOX through the envelope to the rooms where the unit has been installed CONTROL POSITION / l/s 1 74/82	4 131/138	6 167/175	8 208/221	**VALLOX 252** **with Sound Attenuator**			
L_pA, dB(A)		32	38.5	43	46.5				
L_WA, dB(A)		36-*	42.5-*	47-*	50.5-*				

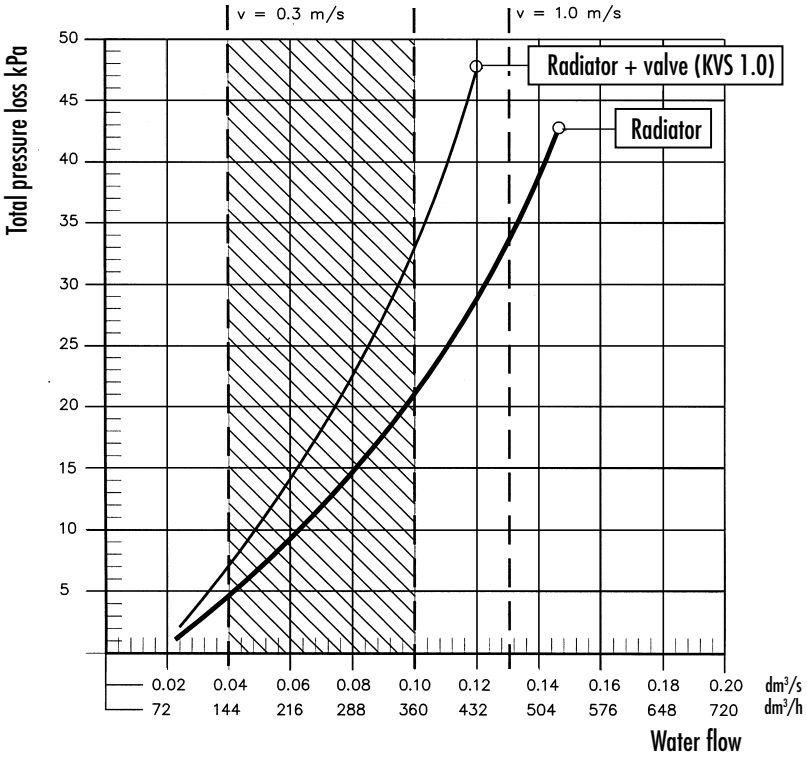
L_WA = A-weighted sound pressure level

* = difference between sound power level and pressure level when unit location and total absorption area are taken into account (in a classroom, for instance, t.ex. L_WA -* = 12 dB)

WATER RADIATOR PERFORMANCE

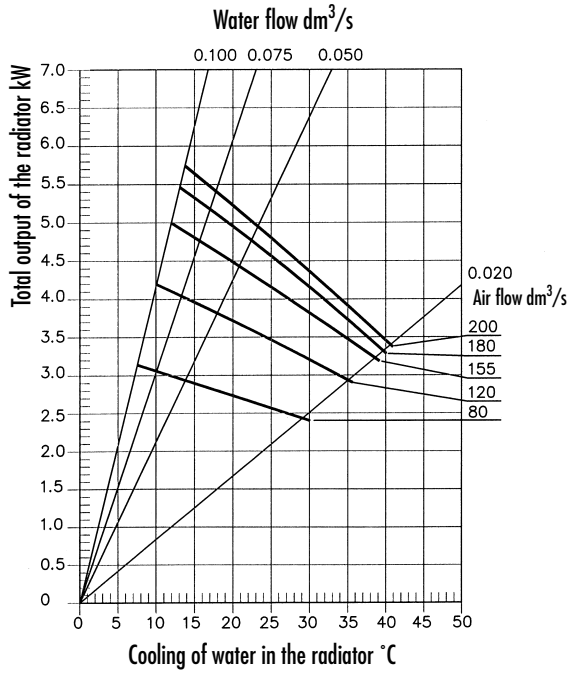
Pressure Loss in the Water Radiator

The recommended area of operation is ruled. Determined for 100% water.

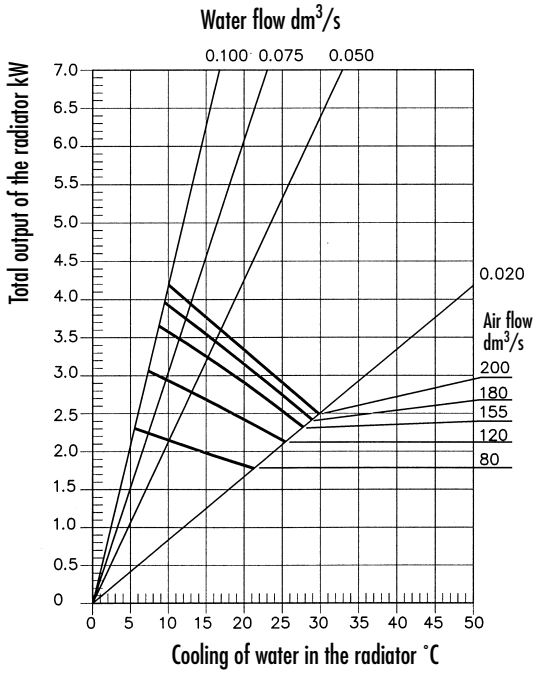


Water Radiator Output

Temperature of water entering the radiator (tv) 70 °C
Temperature of air entering the radiator (ti)15 °C

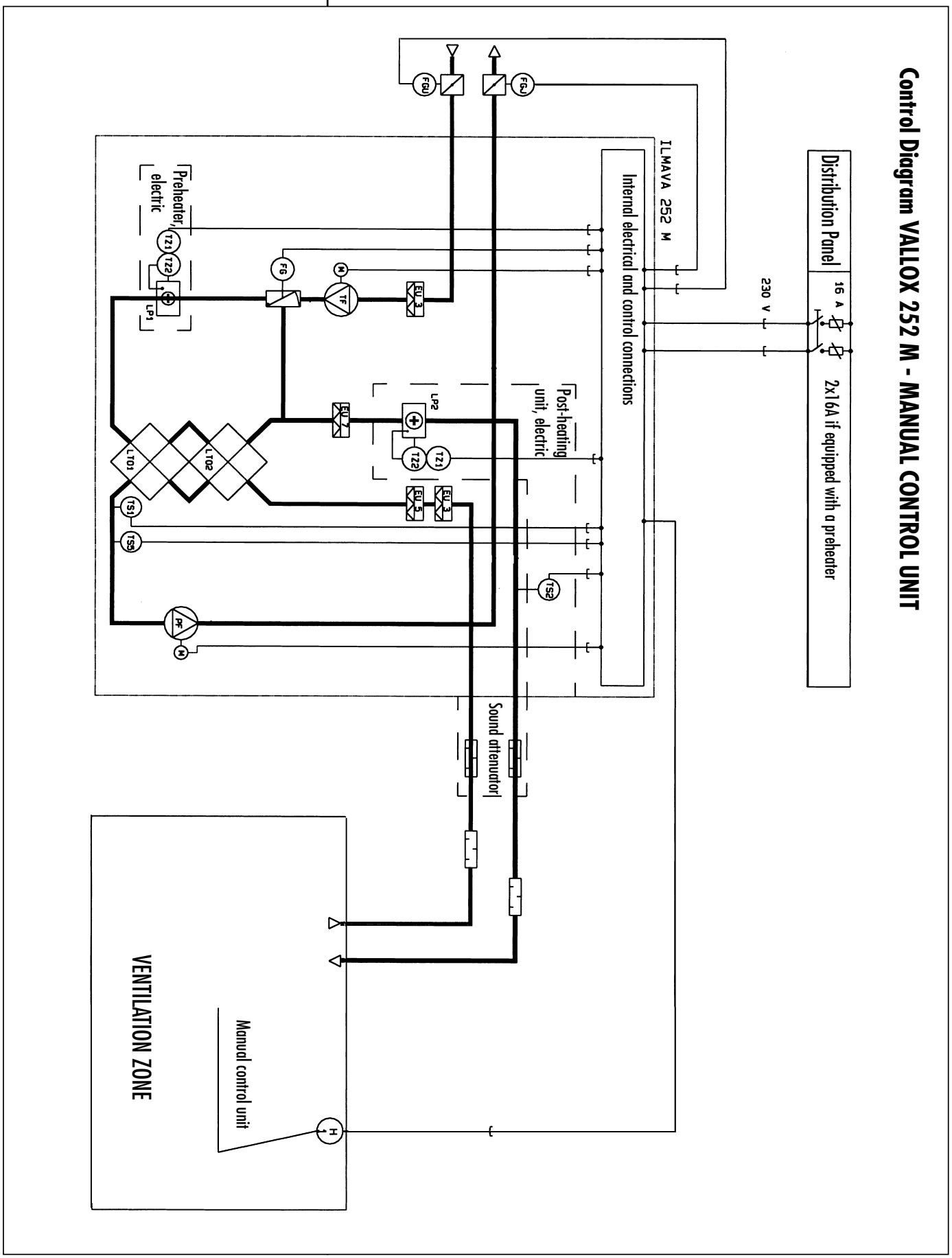


Temperature of water entering the radiator (tv) 55 °C
Temperature of air entering the radiator (ti)15 °C



VALLOX 252 M

CONTROL DIAGRAM VALLOX 252 M - MANUAL CONTROL



VALLOX 252 M

DESCRIPTION OF OPERATION VALLOX 252 M - MANUAL CONTROL UNIT

Control of Operation
The ventilation unit can be stopped by the fan speed switch on the manual control unit.

Fan Speed Adjustment
The users can control the fan capacity of the ventilation unit in two steps using the speed selection switch on the manual control unit (H) in the ventilation zone.

Supply Air Temperature
The control / adjustment center of the unit directs the operation of the post-heating unit (LP2) on the basis of the measuring data on the sensor of the TS2 temperature thermostat, aiming at keeping supply air temperature at the temperature value set with the TS2 thermostat (10....25 C).

Heat Recovery Bypass
Heat recovery can be bypassed using the Summer / Winter switch on the manual control unit (H).
When the switch is in the Winter position, heat recovery is on. The Summer position bypasses heat recovery and deactivates the preheater (LP1), if used, and the post-heating unit (LP2).

Heat Recovery Defrosting
The TS5 temperature thermostat directs the operation of the preheater (LP1) on the basis of the measurement data supplied by the temperature sensor, preventing the risk of freezing and the stopping of the supply air fan (TF). If the capacity of the preheater (LP1) is not sufficient, or if there is no preheater, the TS1 defrosting thermostat of the heat recovery cells stops the TF supply air fan on the basis of the measuring data on the temperature sensor, thereby preventing the heat recovery cell from freezing. As soon as the risk of frosting passes, the fan restarts automatically. The threshold temperature for defrosting (-2...+6 °C) and the difference area (2 °C) can be set on the thermostat.

Overheating Protection of the Heating Unit
Overheat protection thermostats TZ1 and TZ2 monitor the surface temperature in the LP1 and LP2 heating units. If surface temperature exceeds the threshold, overheat protection is triggered and power supply to the heating unit is stopped. The TZ1 overheating protector is reset automatically, and the TZ2 protector manually.

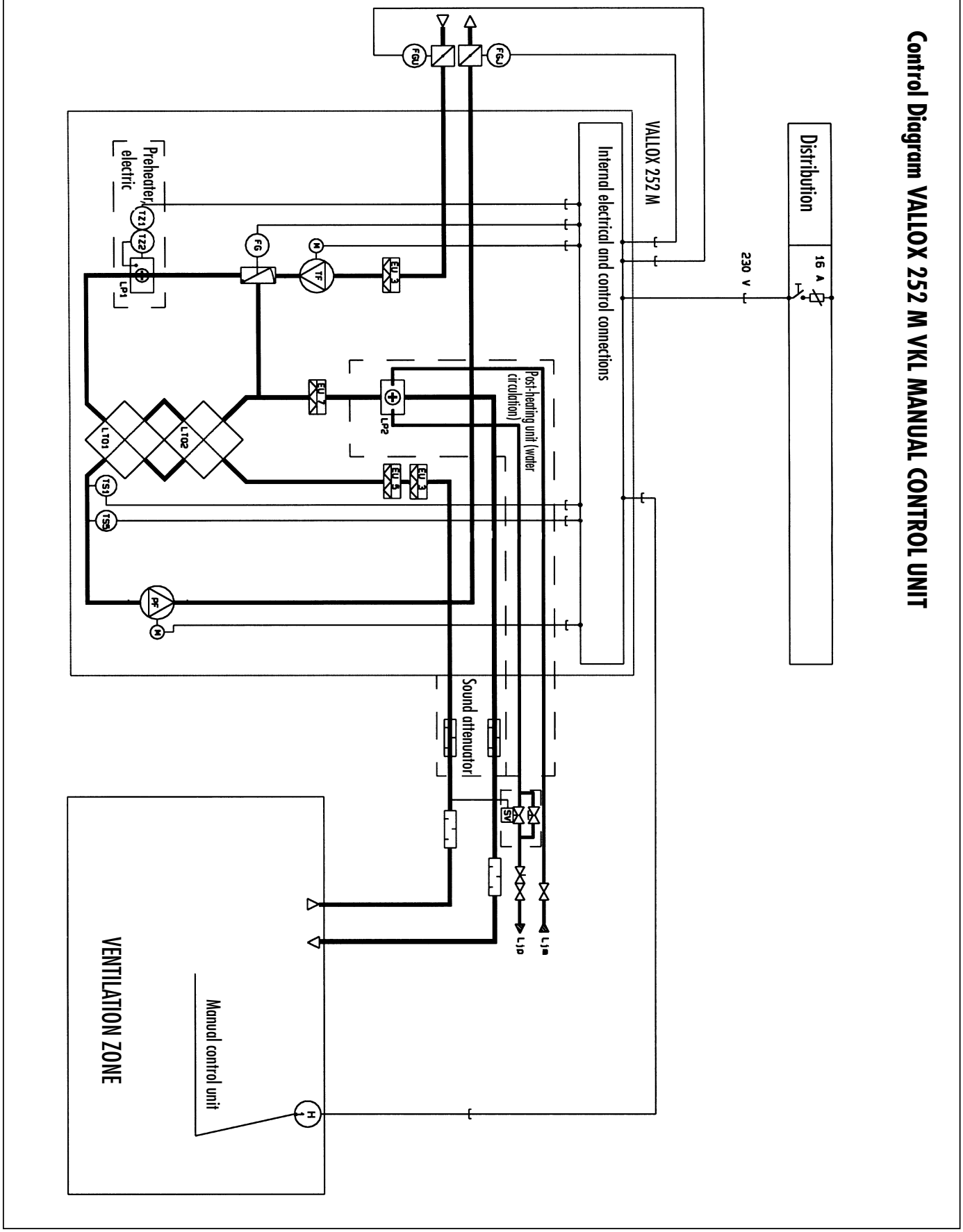
Damper Motors of the Outdoor and/or Extract Air Ducts
The spring return damper motors (24VAC) that may be installed outside the ventilation unit, in the outdoor or extract air ducts, can be controlled with control voltage (24 VAC) coming from the ventilation unit: when the ventilation unit is stopped, also the control voltage fed from the unit is stopped.

Parts List

Code	Name	Technical details (factory settings in parentheses)	Note!	Equipment	Delivery responsibility
FG	Damper motor	Automatic heat recovery bypass 24V, 2W, 8Nm	Standard	X	IU
H	Manual control unit	Fan speed adjustment, control of heat recovery bypass	Standard	X	IU
LP1	Preheater	Electric radiator 2.5kW	Options		IU
LP2	Post-heating unit	Electric radiator 2.5kW	Options		IU
LT01 LT02	Heat recovery cells	2-step, η = 70 %	Standard	X	IU
PF	Discharge air fan	qv = 230 dm3/s (100Pa)	Standard	X	IU
SU	Filter	Supply air EU7, discharge air EU5	Standard	X	IU
TS1	Temperature thermostat Heat recovery defrosting	Discharge air temperature Adjustment range -2...6 °C (2)	Standard	X	IU
TS2	Temperature thermostat Post-heating, electric	Supply air temperature	Standard	X	IU
TS5	Temperature thermostat Preheating, electric	Discharge air temperature Adjustment range -0...8 °C (2)	Standard	X	IU
TF	Supply air fan	qv = 210 dm3/s (100Pa)	Standard	X	IU
TZ1	Overheat protector of the electric radiator	Automatic reset (+60 °C)	Included in LP1 / LP2		IU
TZ2	Overheat protector of the electric radiator	Manual reset (+95 °C)	Included in LP1 / LP2		IU
FGU	Damper motor	Damper motor in the outdoor air duct (spring return) 24VAC			IU
FGJ	Damper motor	Damper motor in the extract air duct (spring return) 24VAC			IU

VALLOX 252 M

CONTROL DIAGRAM VALLOX 252 M VKL - MANUAL CONTROL UNIT



VALLOX 252 M

DESCRIPTION OF OPERATION VALLOX 252 M VKL MANUAL CONTROL UNIT

Control of Operation
The ventilation unit can be stopped by the fan speed switch on the manual control unit.

Fan Speed Adjustment
The users can control the fan capacity of the ventilation unit in two steps using the speed selection switch on the manual control unit (H) in the ventilation zone.

Supply Air Temperature
A regulating valve (not included in the VALLOX 252 M delivery) directs the operation of the LP2 post-heating unit on the basis of the measurement data given by the thermostat sensor in the supply air duct. The aiming is to keep supply air temperature at the temperature value set with the regulating valve (10...25 °C)

Heat Recovery Bypass
Heat recovery can be bypassed using the Summer / Winter switch on the manual control unit (H).
When the switch is in the Winter position, heat recovery is on. The Summer position bypasses heat recovery and deactivates the preheater (LP1), if preheating is used.

Heat Recovery Defrosting
The TS5 temperature thermostat directs the operation of the preheater (LP1) on the basis of the measurement data supplied by the temperature sensor, preventing the risk of freezing and the stopping of the supply air fan (TF). If the capacity of the preheater (LP1) is not sufficient, or if there is no preheater, the TS1 defrosting thermostat of the heat recovery cells stops the TF supply air fan on the basis of the measuring data on the temperature sensor, thereby preventing the heat recovery cell from freezing. As soon as the risk of frosting passes, the fan restarts automatically. The threshold temperature for defrosting (-2...+6 °C) and the difference area (2 °C) can be set on the thermostat.

Overheating Protection of the Heating Unit
Overheat protection thermostats TZ1 and TZ2 monitor the surface temperature in the LP1 heating unit. If surface temperature exceeds the threshold, overheat protection is triggered and power supply to the heating unit is stopped. The TZ1 overheating protector is reset automatically, and the TZ2 protector manually.

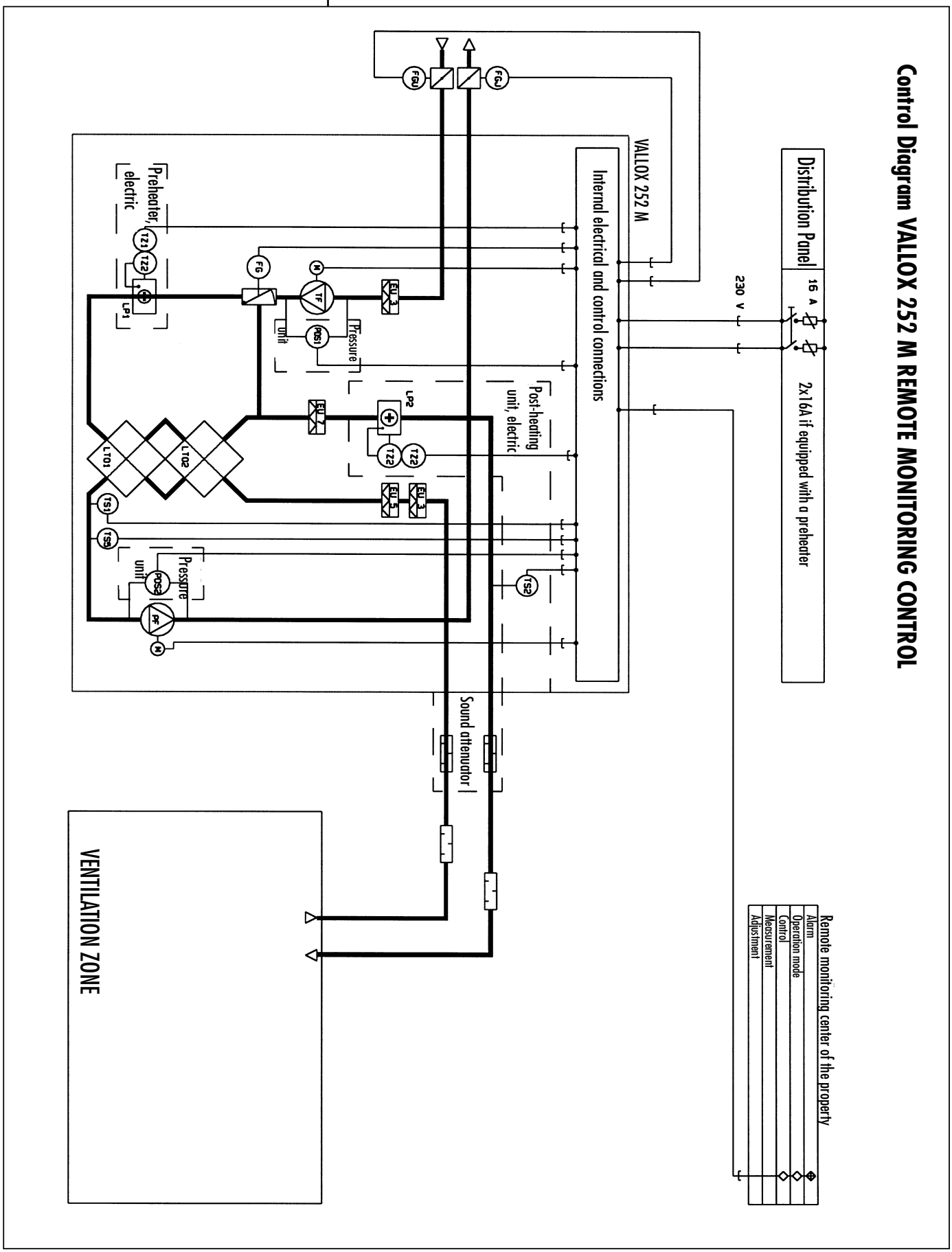
Damper Motors of the Outdoor and/or Extract Air Ducts
The spring return damper motors (24VAC) that may be installed outside the ventilation unit, in the outdoor or extract air ducts, can be controlled with control voltage (24 VAC) coming from the ventilation unit: when the ventilation unit is stopped, also the control voltage fed from the unit is stopped.

Parts List

Code	Name	Technical details (factory settings in parentheses)	Note!	Equip-ment	Delivery responsibility
FG	Damper motor	Automatic heat recovery bypass 24V, 2W, 8Nm	Standard	X	IU
H	Manual control unit	Fan speed adjustment, control of heat recovery bypass	Standard	X	IU
LP1	Preheater	Electric radiator 2.5kW	Options		IU
LP2	Post-heating unit	Water radiator 5kW, 70/50 °C	Options		IU
LTO1 LTO2	Heat recovery cells	2-step, η = 70 %	Standard	X	IU
PF	Discharge air fan	qv = 230 dm3/s (100Pa)	Standard	X	IU
SU	Filter	Supply air EU7, discharge air EU5	Standard	X	IU
SV	Regulating valve	Self-operating radiator thermostat	Not included in the ventilation unit delivery		
TS1	Temperature thermostat Heat recovery defrosting	Discharge air temperature Adjustment range -2...6 °C (2)	Standard	X	IU
TS5	Temperature thermostat Preheating, electric	Discharge air temperature Adjustment range -0...8 °C (2)	Standard	X	IU
TF	Supply air fan	qv = 210 dm3/s (100Pa)	Standard	X	IU
TZ1	Overheat protector of the electric radiator	Automatic reset (+60 °C)	Included in LP1 / LP2		IU
TZ2	Overheat protector of the electric radiator	Manual reset (+95 °C)	Included in LP1 / LP2		IU
FGU	Damper motor	Damper motor in the outdoor air duct (spring return) 24VAC			IU
FGJ	Damper motor	Damper motor in the extract air duct (spring return) 24VAC			IU

VALLOX 252 M

CONTROL DIAGRAM VALLOX 252 M REMOTE MONITORING CONTROL



VALLOX 252 M

DESCRIPTION OF OPERATION DIAGRAM VALLOX 252 M REMOTE MONITORING CONTROL

Control of Operation
If needed, the ventilation unit can be stopped by controlling the contactors in the unit (Min., 1/2, Max.) or by controlling power supply via the contactor in the distribution panel.

Fan Speed Adjustment
The ventilation unit can feed control voltage (24VAC) to the remote monitoring center, and the remote monitoring center can then direct the fan capacity of the ventilation unit in three steps according to the control signal (24VAC) received by the Min., 1/2, and Max. contacts in the connection box. Remote monitoring receives potential free operation mode information on the mode selected (Min., 1/2, Max.).

Supply Air Temperature
The control / adjustment center of the unit directs the operation of the post-heating unit (LP2) on the basis of the measuring data on the sensor of the TS2 temperature thermostat, aiming at keeping supply air temperature at the temperature value set with the TS2 thermostat (10…25 °C).

Heat Recovery Bypass
With the help of control voltage (24VAC) fed from the ventilation unit to the remote monitoring center and its control functions, the heat recovery bypass function can be directed according to the control signal (24 VAC) received by the NC contact in the connection box. When heat recovery bypass is activated, the preheater (LP1), if used, and the post-heating unit (LP2) are deactivated.

Heat Recovery Defrosting
The TS5 temperature thermostat directs the operation of the preheater (LP1) on the basis of the measurement data supplied by the temperature sensor, preventing the risk of freezing and the stopping of the supply air fan (TF). If the capacity of the preheater (LP1) is not sufficient, or if there is no preheater, the TS1 defrosting thermostat of the heat recovery cells stops the TF supply air fan on the basis of the measuring data on the temperature sensor, thereby preventing the heat recovery cell from freezing. As soon as the risk of frosting passes, the fan restarts automatically. The threshold temperature for defrosting (-2…+6 °C) and the difference area (2 °C) can be set on the thermostat.

Overheating Protection of the Heating Unit
Overheat protection thermostats TZ1 and TZ2 monitor the surface temperature in the LP1 and LP2 heating units. If surface temperature exceeds the threshold, overheat protection is triggered and power supply to the heating unit is stopped. The TZ1 overheating protector is reset automatically, and the TZ2 protector manually.

Damper Motors of the Outdoor and/or Extract Air Ducts
The spring return damper motors (24VAC) that may be installed outside the ventilation unit, in the outdoor or extract air ducts, can be controlled with control voltage (24 VAC) coming from the ventilation unit: when the ventilation unit is stopped, also the control voltage fed from the unit is stopped.

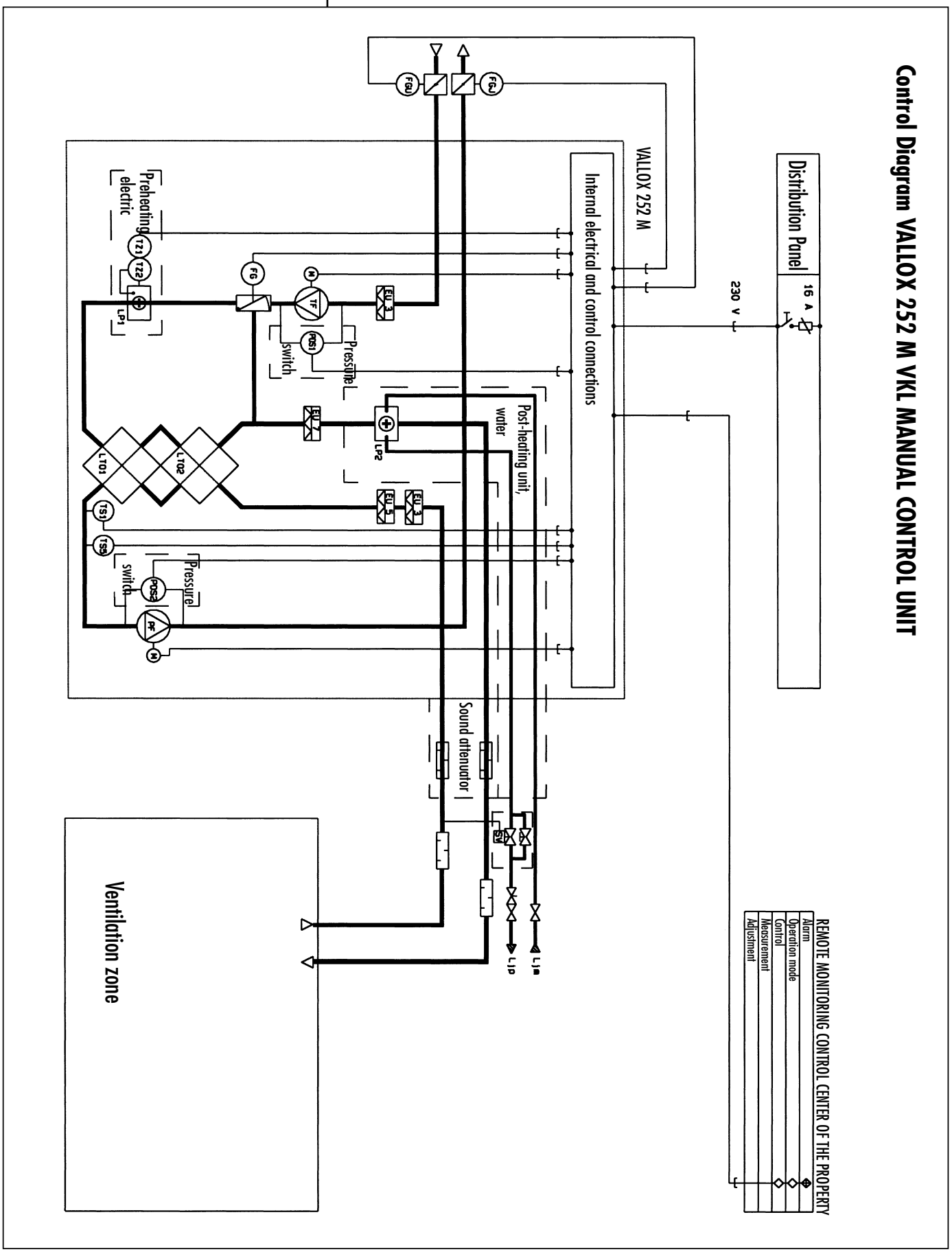
Alarms
The PDS1 and PDS2 pressure difference switches monitor the pressure difference on the supply and discharge air sides. If the pressure difference grows too large because of dirty filters or clogged ducts, remote monitoring receives potential free operation mode information from the unit.

Parts List

Code	Name	Technical details (factory settings in parentheses)	Note!	Equipment	Delivery Responsibility
FG	Damper motor	Automatic heat recovery bypass 24V, 2W, 8Nm	Standard	X	IU
LP1	Preheater	Electric radiator 2.5kW	Options		IU
LP2	Post-heating unit	Electric radiator 2.5kW	Options		IU
LTO1 LTO2	Heat recovery cells	2-step, η = 70 %	Standard	X	IU
PDS1	Pressure difference switch Pressure guard for supply air	Adjustment range 0...500Pa (420)	Options		IU
PDS2	Pressure difference switch Pressure guard for discharge air	Adjustment range 0...500Pa (420)	Options		IU
PF	Discharge air fan	qv = 230 dm3/s (100Pa)	Standard	X	IU
SU	Filter	Supply air EU7, discharge air EU5	Standard	X	IU
TS1	Temperature thermostat Heat recovery defrosting	Discharge air temperature Adjustment range -2...6 °C (2)	Standard	X	IU
TS2	Temperature thermostat Post-heating, electric	Supply air temperature	Standard	X	IU
TS5	Temperature thermostat Preheating, electric	Discharge air temperature Adjustment range -0...8 °C (2)	Standard	X	IU
TF	Supply air fan	qv = 210 dm^3/s (100Pa)	Standard	X	IU
TZ1	Overheat protector of the electric radiator	Automatic reset (+60 °C)	Included in LP1 / LP2		IU
TZ2	Overheat protector of the electric radiator	Manual reset (+95 °C)	Included in LP1 / LP2		IU
FGU	Damper motor	Damper motor in the outdoor air duct (spring return) 24VAC			IU
FGJ	Damper motor	Damper motor in the extract air duct (spring return) 24VAC			IU

VALLOX 252 M

CONTROL DIAGRAM VALLOX 252 M VKL REMOTE MONITORING CONTROL



VALLOX 252 M

DESCRIPTION OF OPERATION VALLOX 252 M VKL REMOTE MONITORING CONTROL UNIT

Control of Operation
If needed, the ventilation unit can be stopped by controlling the contactors in the unit (Min., 1/2, Max.) or by controlling power supply via the contactor in the distribution panel.

Fan Speed Adjustment
The ventilation unit can feed control voltage (24VAC) to the remote monitoring center, and the remote monitoring center can then direct the fan capacity of the ventilation unit in three steps according to the control signal (24VAC) received by the Min., 1/2, and Max. contacts in the connection box. Remote monitoring receives potential free operation mode information on the mode selected (Min., 1/2, Max.).

Supply Air Temperature
A regulating valve (not included in the VALLOX 252 delivery) directs the operation of the LP2 post-heating unit on the basis of the measurement data given by the thermostat sensor in the supply air duct. The aiming is to keep supply air temperature at the temperature value set with the regulating valve (10…25 °C).

Heat Recovery Bypass
With the help of control voltage (24VAC) fed from the ventilation unit to the remote monitoring center and its control functions, the heat recovery bypass function can be directed according to the control signal (24 VAC) received by the NC contact in the connection box. When heat recovery bypass is activated, the preheater (LP1), if used, and the post-heating unit (LP2) are deactivated.

Heat Recovery Defrosting
The TS5 temperature thermostat directs the operation of the preheater (LP1) on the basis of the measurement data supplied by the temperature sensor, preventing the risk of freezing and the stopping of the supply air fan (TF). If the capacity of the preheater (LP1) is not sufficient, or if there is no preheater, the TS1 defrosting thermostat of the heat recovery cells stops the TF supply air fan on the basis of the measuring data on the temperature sensor, thereby preventing the heat recovery cell from freezing. As soon as the risk of frosting passes, the fan restarts automatically. The threshold temperature for defrosting (-2…+6 °C) and the difference area (2 °C) can be set on the thermostat.

Overheating Protection of the Heating Unit
Overheat protection thermostats TZ1 and TZ2 monitor the surface temperature in the LP1 heating unit. If surface temperature exceeds the threshold, overheat protection is triggered and power supply to the heating unit is stopped. The TZ1 overheating protector is reset automatically, and the TZ2 protector manually.

Damper Motors of the Outdoor and/or Extract Air Ducts
The spring return damper motors (24VAC) that may be installed outside the ventilation unit, in the outdoor or extract air ducts, can be controlled with control voltage (24 VAC) coming from the ventilation unit: when the ventilation unit is stopped, also the control voltage fed from the unit is stopped.

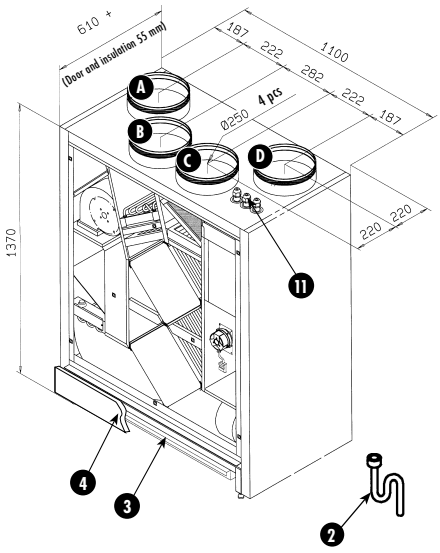
Alarms
The PDS1 and PDS2 pressure difference switches monitor the pressure difference on the supply and discharge air sides. If the pressure difference grows too large because of dirty filters or clogged ducts, remote monitoring receives potential free operation mode information from the unit.

Parts List

Code	Name	Technical details (factory settings in parentheses)	Note!	Equipment	Delivery Responsibility
FG	Damper motor	Automatic heat recovery bypass 24V, 2W, 8Nm	Standard	X	IU
LP1	Preheater	Electric radiator 2.5kW	Options		IU
LP2	Post-heating unit	Water radiator 5kW, 70/50oC	Options		IU
LTO1 LTO2	Heat recovery cells	2-step, η = 70 %	Standard	X	IU
PDS1	Pressure difference switch Pressure guard for supply air	Adjustment range 0...500Pa (420)	Options		IU
PDS2	Pressure difference switch Pressure guard for discharge air	Adjustment range 0...500Pa (420)	Options		IU
PF	Discharge air fan	qv = 230 dm^3/s (100Pa)	Standard	X	IU
SU	Filter	Supply air EU7, discharge air EU5	Standard	X	IU
SV	Regulating valve	Self-operating radiator thermostat	Not included in the ventilation unit delivery		
TS1	Temperature thermostat Heat recovery defrosting	Discharge air temperature Adjustment range -2...6 °C (2)	Standard	X	IU
TS5	Temperature thermostat Preheating, electric	Discharge air temperature Adjustment range -0...8 °C (2)	Standard	X	IU
TF	Supply air fan	qv = 210 dm^3/s (100Pa)	Standard	X	IU
TZ1	Overheat protector of the electric radiator	Automatic reset (+60 °C)	Included in LP1 / LP2		IU
TZ2	Overheat protector of the electric radiator	Manual reset (+95 °C)	Included in LP1 / LP2		IU
FGU	Damper motor	Damper motor in the outdoor air duct (spring return) 24VAC			IU
FGJ	Damper motor	Damper motor in the extract air duct (spring return) 24VAC			IU

VALLOX 252 M

MOUNTING INSTRUCTIONS



VALLOX 252 M L

- A = OUTDOOR AIR
- B = SUPPLY AIR
- C = DISCHARGE AIR
- D = EXTRACT AIR

VALLOX 252 M-R

- A = EXTRACT AIR
- B = DISCHARGE AIR
- C = SUPPLY AIR
- D = OUTDOOR AIR

1. Sleeves with draught-limiters (PK 16)
2. Condensing water outlet
3. Condensing water reservoir
4. Socle

Example of Pipe Connections VALLOX 252 M VKL

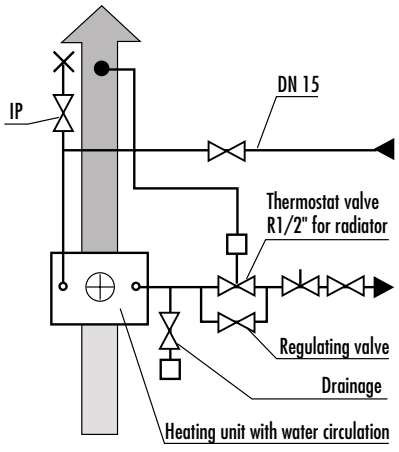


Figure A

Location of VALLOX

- The unit is mounted indoors, in a place where temperature does not fall below +10°C.
- The unit shall be mounted in a place where the sound pressure level coming through the envelope is not acoustically disturbing (storerooms, halls, utility rooms, and in some cases rooms where people spend a lot of time, such as classrooms).
- The unit is equipped with an adjustable socle. If the unit is mounted on a wall, keep in mind the weight of the unit (190kg) and vibration damping.
- The unit is splash-proof (IP34), so it can also be mounted in a damp room.

VALLOX Duct Connections

- The unit has four Ø 250 inner fittings equipped with rubber rings. The inner fittings can be detached and replaced with another type of fitting, such as bends. Fix the ducts steadily and tightly to the outlets. (Note! Aggregatets modeller L/R.) En eventuell isolering av kanalerna utförs enligt ventilationsplanen.

VALLOX Condensing Water Connections

- The water condensing from discharge air going through the unit can be removed from the bottom tank in two ways.
- When discharge air humidity is great, as in the bathroom, the condensing water is led via the screw-type hose coupling and through the condensing water outlet (water seal and hose) delivered with the unit to the floor drain.
- When discharge air humidity is low, as in an office, condensing water can be led via the screw-type hose coupling to the condensing water reservoir delivered with the unit. The reservoir is placed under the bottom tank by pushing it to the rails on the socle. In this case, a separate condensing water outlet is not used. NOTE! If a condensing water reservoir is used, it must be inspected sufficiently often.
- As the screw-type hose coupling is located almost in the middle of the unit, the unit has to be located in a horizontal position.

VALLOX Pipe Connections

- If the unit is equipped with a water post-heating unit, the unit has to be connected to the hot water circuit with copper tubes 15/13.
- The water circulation post-heating unit can be controlled with a thermostat valve R 1/2" equipped with a separate sensor. The valve is installed in the return water pipe, and the sensor in the supply duct outside VALLOX. Because of the risk of freezing in the heating unit, it is recommended to use a pipe connection as shown in the figure (A).

NOTE! THE REGULATING VALVE IS NOT INCLUDED IN THE DELIVERY.

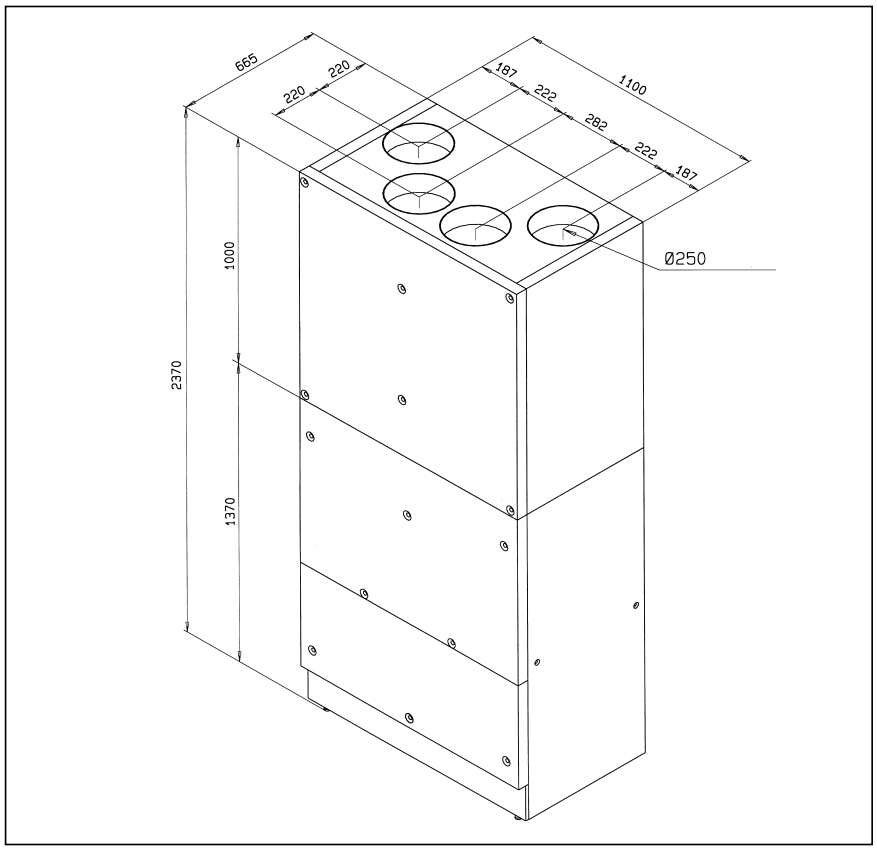
VALLOX Pressure Difference Switches

If the unit is equipped with pressure difference switches that monitor the pressure difference in the supply and / or discharge air ducts, their correct values have to be set after the ducts and the related air terminal devices (such as valves and grilles) have been mounted and adjusted. For further details, see the Instructions for using VALLOX 252 M.

SOUND ATTENUATOR

General

- The sound attenuator is a duct silencer that should be mounted on top of VALLOX 252 M. The attenuator includes a cover that can be opened, enabling the cleaning of the attenuator without detaching the ducts.
- The sound attenuator unit also features detachable attenuation segments in supply and discharge air ducts.
- 4 Ø 250 external fittings enable the laying of ducts straight from the unit by using bends etc.
- The top of the attenuator unit incorporates lead-in sealings for the lead-through tubes of cables and for the supply and return water pipes of a water heating unit, if one is used.
- The weight of the sound attenuator unit is 105kg including the door, and 82kg without the door.



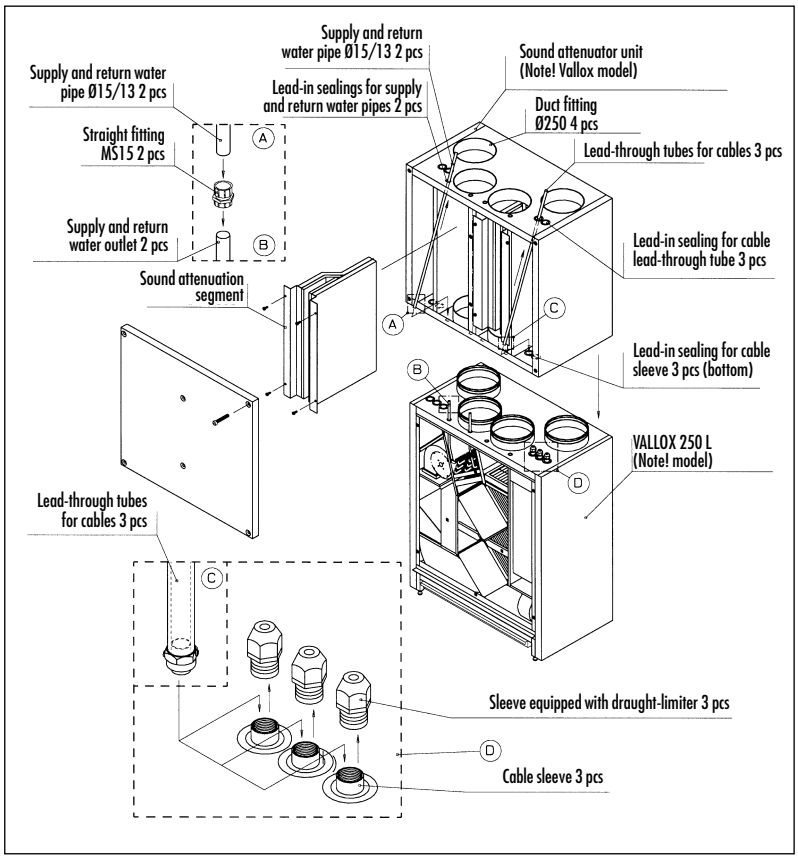
VALLOX 252 M

MOUNTING INSTRUCTIONS FOR THE SOUND ATTENUATOR

Mounting

NOTE! BEFORE MOUNTING, CHECK THE MODEL OF VALLOX 252 M (L or R).

- Detach the door of the sound attenuator. (See the adjoining picture.)
- Detach the sleeves equipped with draught limiters (see the figure, item D).
- Cut through the lead-in sealings for the cable sleeves at the bottom of the extract duct of the sound attenuator unit (no isolation inside). NOTE! VALLOX 252 model L or R. (See the figure.)
- If VALLOX 252 is equipped with a water heating unit, also detach the sound attenuation segment located in the supply air duct of the unit. NOTE! VALLOX 252 model L or R. (See the figure.)
- Lift the sound attenuator unit on top of VALLOX 252. Make sure that the cable sleeves go through. (See the figure, item D.)
- Mount the lead-through cable tubes (included in the delivery), pushing them through the lead-in sealings on top of the sound attenuator unit, and screwing them to the cable sleeves. (See the figure, item C.)
- Lay the cables to be connected through the lead-through tubes to the connection box inside VALLOX 252.
- If a water heating unit is used, lead the supply and return pipes (not included in the delivery) of the heating unit through the lead-in sealings on top of the sound attenuator unit and VALLOX 252, and connect them to the supply and return water outlets with a straight fitting, for instance.
  (See the figure, items A and B.)
- Mount the sound attenuation segment in place.
- Carefully fix the door of the sound attenuator in place.
- Fix the ducts steadily and tightly to the outlets. If ducts are to be isolated, do so following the ventilation plan.



VALLOXs Electrical Connections

- The unit is connected permanently to the electrical power network. The connection box is located inside the unit, next to the extract air duct outlet.
- The cables to be connected are led to the unit through the sleeves with draught-limiters and the cable sleeves located beside the extract air duct outlet.

Mounting

- Detach the upper door of the unit (screw M8x70, 5 pcs).
- Detach the cover of the connection box (screw 3.5x9.5, 2 pcs).
- Mount and fasten the cables needed to the terminal block following the connection instructions.
- The external wiring diagram is included in these instructions, and it is also found inside the cover of the connection box.
- The internal wiring diagram is included in these instructions, and it is also found on the cover of the fuse box inside the unit.

Installation of the Manual Control Unit

- The control panel that comes with the unit is in a surface mounting case. The manual control unit can also be flush mounted in a double gang box (U 17.2 ENSTO).
- The manual control unit cannot be used in connection with remote monitoring control.

Connection to Remote Monitoring

- The ventilation unit is connected to remote monitoring according to the wiring diagrams attached.
- The manual control unit cannot be used in connection with remote monitoring control.

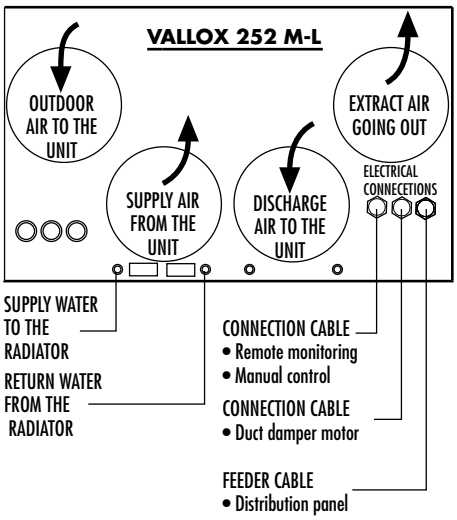
Selection of Control Voltages for Capacity Modes (Min., 1/2 and Max.)

BEFORE SELECTING CONTROL VOLTAGES, MAKE SURE THAT THE UNIT HAS BEEN DISCONNECTED FROM THE MAINS SUPPLY!

- If needed, the factory settings for adjusting fan capacity modes (Min., 1/2 and Max.) can be modified.
- The factory setting for the Min. mode control voltage is 90V. You can modify the control voltage by moving the conductor between contact 13 of the K2 contactor and the transformer to the desired voltage (100V, 110V, 130V, 140V, 160V, 200V, and 230V).
- The factory setting for the 1/2 mode control voltage is 140V. You can change the control voltage by moving the conductor between contact 14 of the K3 contactor and the transformer to the desired voltage (90V, 100V, 110V, 130V, 160V, 200V, and 230V).
- The factory setting for the Max. mode control voltage is 230V. You can change the control voltage by moving the conductor between contact 13 of the K1 contactor and the transformer to the desired voltage (90V, 100V, 110V, 130V, 140V, 160V, and 200V).

ONLY AN AUTHORIZED PERSON MAY PERFORM ELECTRICAL CONNECTIONS!

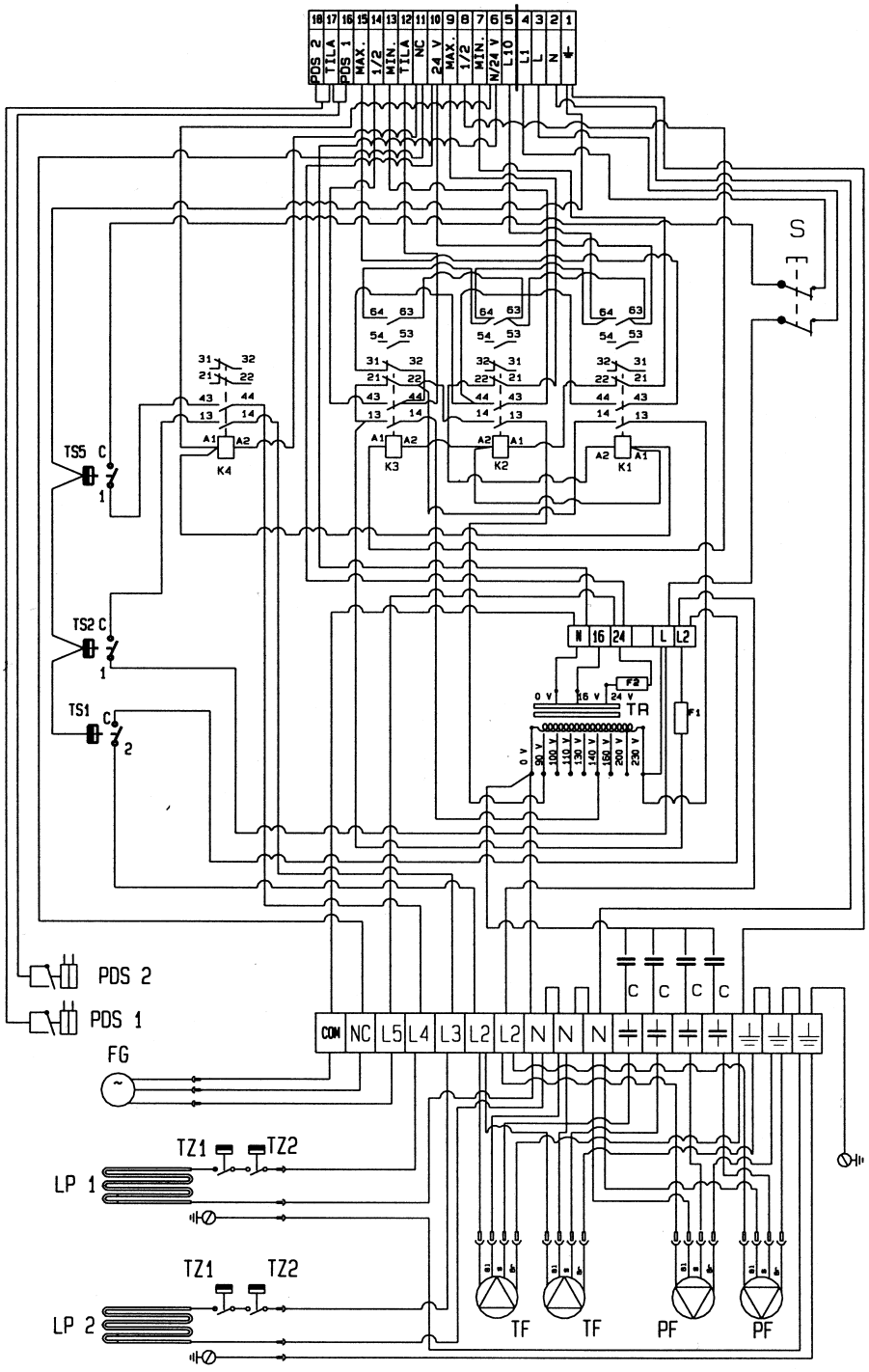
BEFORE CONNECTING THE CABLES, MAKE SURE THAT THEY HAVE BEEN DISCONNECTED FROM THE MAINS SUPPLY!



Manual control unit

VALLOX 252 M

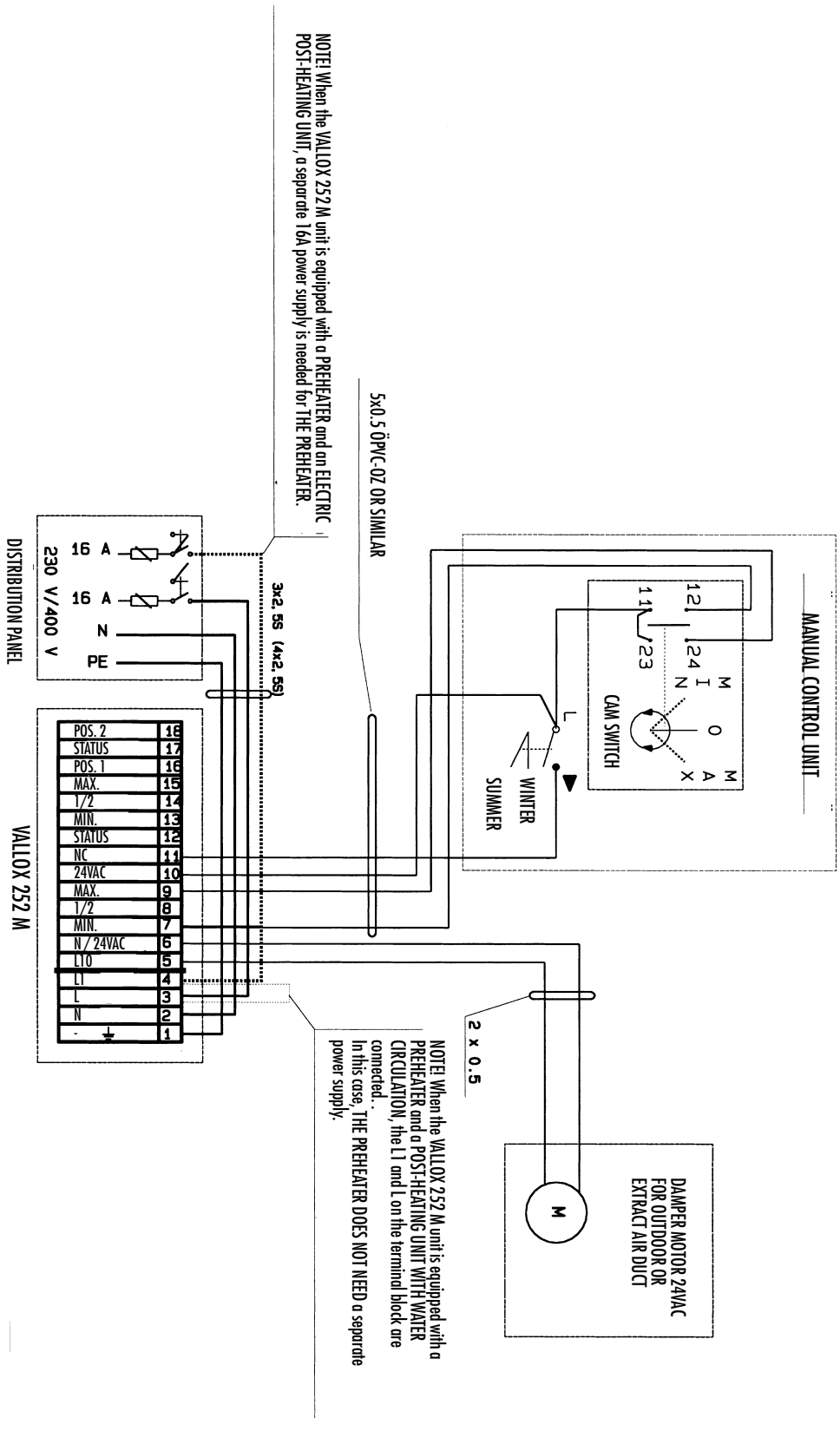
INTERNAL WIRING DIAGRAM VALLOX 252 M



TF = Supply air fan 2x230W
PF = Discharge air fan 2x230W
C = Capacitor 6mF
FG = Damper motor
TR = Transformer 230V 4A/24V 25VA
TS1 = Defrosting thermostat for heat recovery cells + 2oC (adjustable)
TS2 = Thermostat for post-heating unit +15oC...25oC
TS5 = Thermostat for preheater +4oC (adjustable)
K1 = Contactor max. speed
K2 = Contactor min. speed
K3 = Contactor 1/2 speed
K4 = Contactor, disconnection of the heating units for heat recovery bypass
S = Service switch (door switch)
LP1 = Preheater 2,500W (optional)
LP2 = Post-heating unit 2,500W (optional)
TZ1 = Overheating protector +60oC
TZ2 = Overheating protector +95oC (manual reset)
PDS1 = Supply air duct pressure difference switch (optional)
PDS2 = Discharge air duct pressure difference switch (optional)
F1 = Fuse 4A
F2 = Fuse 1.6A

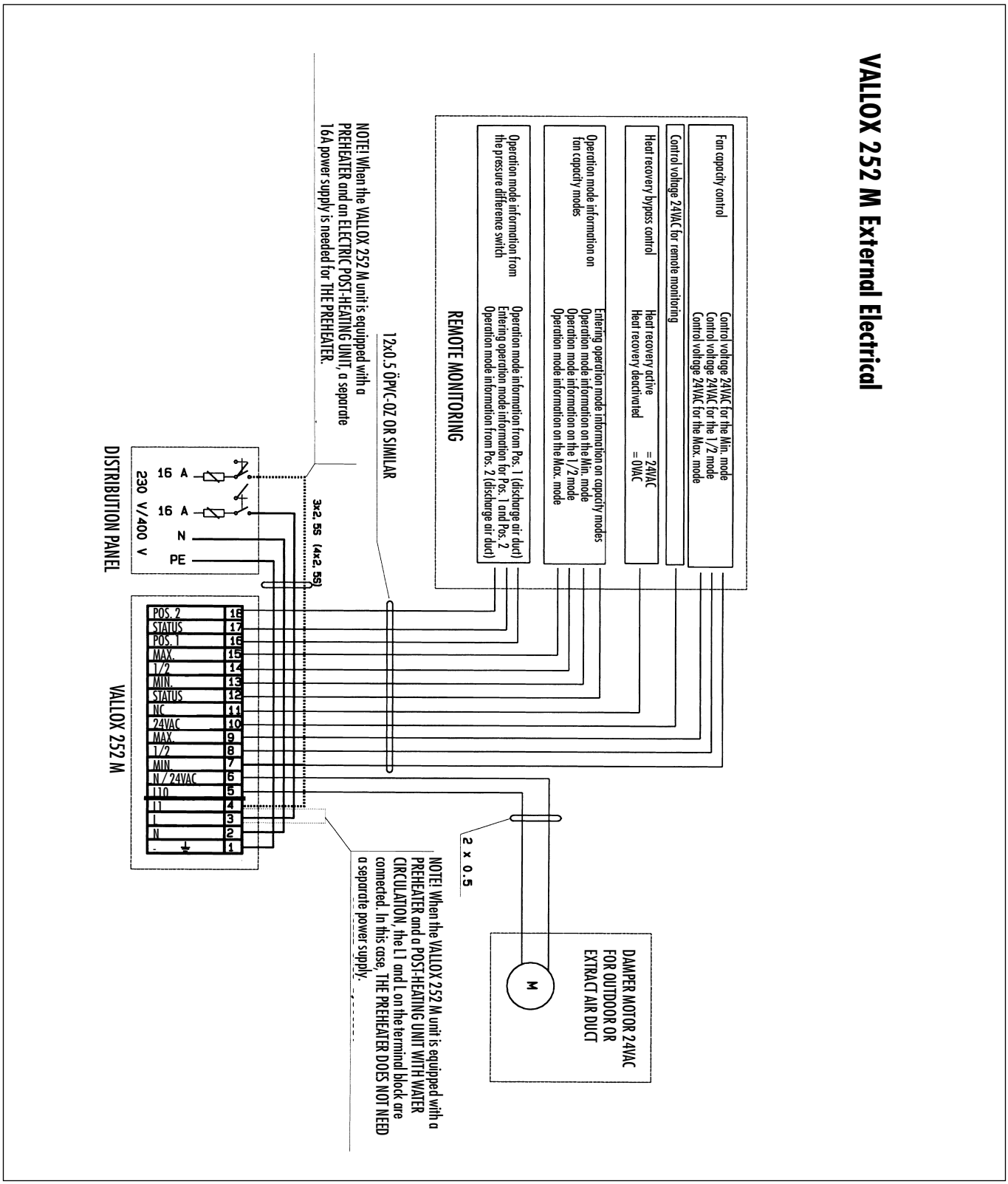
VALLOX 252 M

EXTERNAL ELECTRICAL CONNECTIONS VALLOX 252 M - MANUAL CONTROL



VALLOX 252 M

EXTERNAL ELECTRICAL CONNECTIONS VALLOX 252 REMOTER MONITORING CONTROL



VALLOX

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