

Topvex CAV conversion to VAV



GB Installation instructions

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1 Hardware installation

All Topvex CAV units have pressure transmitter PTS (Pressure Transmitter Supply) and PTE (Pressure Transmitter Extract) wired to the same terminals for external connections in the electrical cabinet (electrical box).

PTE connected to terminals G, 40 and 41.

PTS connected to terminals G, 40 and 42.

Terminals in the unit are addressed to following terminals in the actual pressure transmitters (see wiring diagram/wiring chart for actual unit).

PTE:

+ = G (Supply voltage 24VAC)/White wire

0 = 40 (System neutral)/Brown wire

↑ = 41 Output signal 0-10VDC/Green wire

PTS:

+ = G (Supply voltage 24 V AC)/White wire

0 = 40 (System neutral)/Brown wire

↑ = 42 Output signal 0-10VDC/Green wire

Disconnect the PTE and PTS wiring from the terminals G, 40 and 41-42, insulate the wires and hide them inside the cable channel if not used for any other purpose.

Connect the cables from the added duct connected pressure transmitters (VAV) to the same terminals.

Set the working range for the pressure transmitters.

The working ranges are set by two dip switches on the circuit board in the transmitter (see manual for transmitters or example in chapter 2.1).

2 Software adjustment for Topvex unit (Corrigo)

Log on to Administrator level with password 3333.

Menu level 1	Menu level 2	Menu level 3
Temperature Air control Time settings → Access right	→ Log on Log off Change password	→ Log on Enter password:3333 Actual level:Admin

Sensor setting.

Set the adjusted working range for the added VAV pressure transmitters in menu Configuration/Sensor setting.

Adjust SAF (supply air fan) and EAF (extract air fan) actual pressure range at 10,0 V.

Example: If pressure transmitter is set to 0...300 Pa set: 0,0 V: 0,0 Pa and 10,0 V : 300,0 Pa. Filter factor is not to be changed.

Manual/Auto Settings → Configuration Access rights	Inputs/Outputs → Sensor settings Control functions Fan control	SAF pressure at 0,0V:0,0 Pa 10,0V:XXX,X Pa Filter factor ↓
		EAF pressure at 0,0V:0,0 Pa 10,0V:XXX,X Pa Filter factor

Fan control

Set the fan control type in menu Configuration/Fan control.

Change the fan control from Flow control to Pressure control.

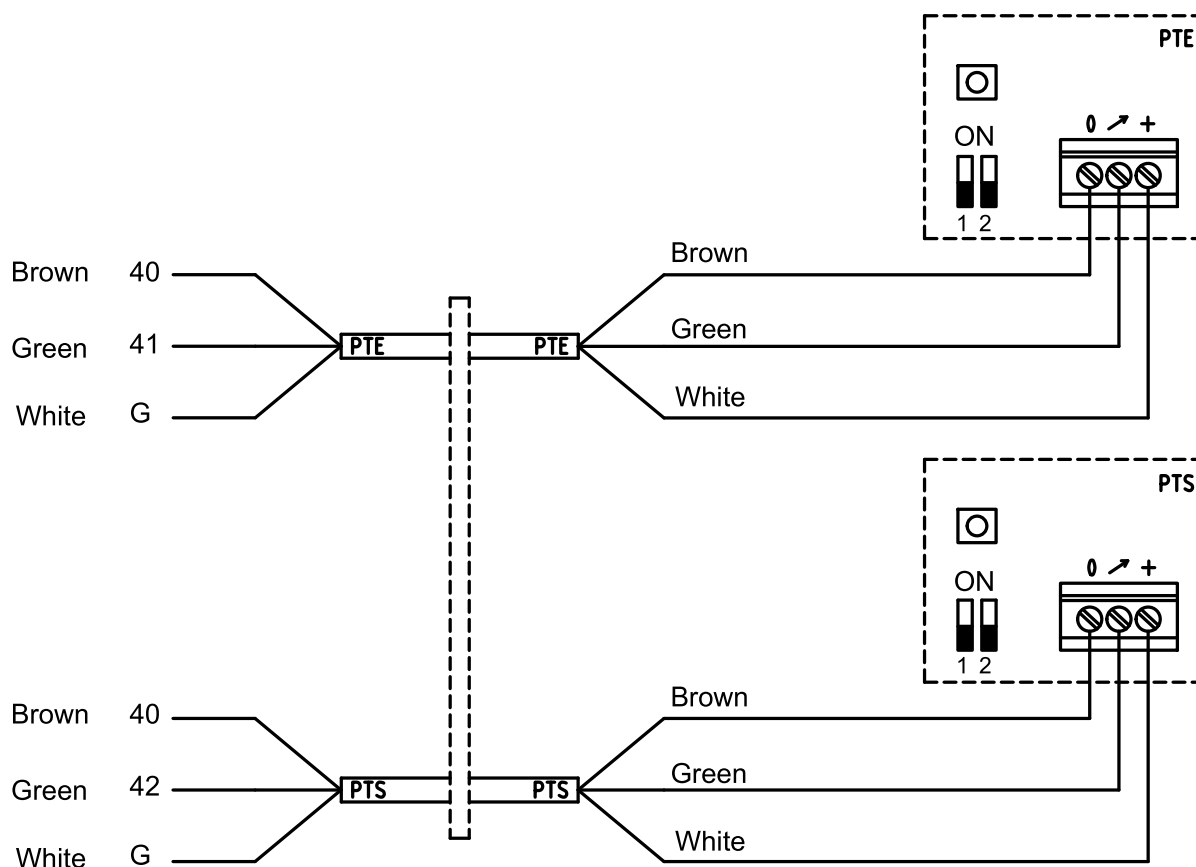
Manual/Auto Settings → Configuration Access rights	Sensor settings Control function → Fan control Extra sequence Y4	Fan control Pressure control ↓
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Air control setpoint

Adjust the new Pressure ctrl SAF and Pressure ctrl EAF set points.

Running mode Temperature → Air control Time settings	Pressure ctrl SAF Actual:0 Pa Setp:0 Pa → ↓	Pressure ctrl SAF Setp 1/1: 200 Pa Setp 1/2: 100 Pa ↓
	Pressure ctrl EAF Actual:0 Pa Setp:0 Pa → ↓	Pressure ctrl EAF Setp 1/1: 200 Pa Setp 1/2: 100 Pa ↓

2.1 Wiring VAV



	SW1	SW2	
Working range 1	ON	OFF	0...300 Pa
Working range 2	OFF	ON	0...500 Pa
Working range 3	OFF	OFF	0...1000 Pa

3 Pressure transmitters

The pressure transmitters need to be mounted in the supply and extract air ducts (figure 1) and connected according to (table 2).

3.1 Topvex

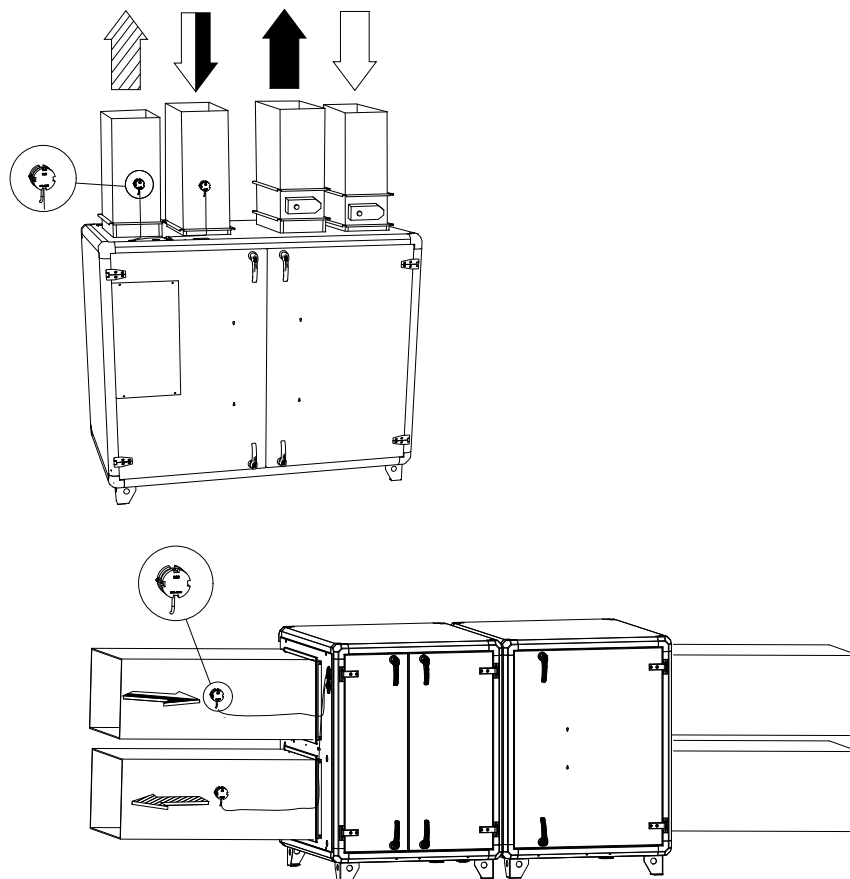


Fig. 1 VAV installation

Table 1: Symbol description

Symbol	Description
	Supply air
	Exhaust air
	Outdoor air
	Extract air

4 Topvex SR/TR 03-06, SR09-11, TR09-15 External Connections

Table 2: Connections to external functions

Terminal block		Description	Remark
	PE	Ground	
N	N	Earthed neutral (supply voltage)	Used for phase 230V 1~ and 400V 3~
L1	L1	Phase (Main supply voltage)	Used for phase 230V 1~ if the unit has this mains supply 400V 3~/230V 3~
L2	L2	Phase (Main supply voltage)	400V 3~/230V 3~
L3	L3	Phase (Main supply voltage)	400V 3~/230V 3~
1	G	Auxiliary supply (Pressure transmitter. Water valve actuators)	24V AC
2	G0	Reference (Water valve actuator mains supply)	24V AC
10	DO ref	DO reference	G (24V AC)
12 ¹	DO 2	Outdoor/Exhaust air damper	24V AC Max. 2,0 A continuous load
WP	L1	Circulation pump hot water system	230V AC
14 ¹	DO 4	Cooling pump	24V AC
15 ¹	DO 5	DX Cooling step 1	24V AC
16 ¹	DO 6	DX Cooling step 2	24V AC
17 ¹	DO 7	Alarm output for DO signals	24V AC
30	AI Ref	Supply air temperature sensor reference	neutral
31	AI 1	Temperature sensor, supply air	
40	Agnd	UI reference	neutral
41 ²	UAI 1/(UDI 1)	Pressure transmitter extract air	
42 ²	UAI 2/(UDI 2)	Pressure transmitter supply air	
44	UAI 3/(UDI 3)	Frost protection sensor water heating battery	Use terminal 40 as reference
4 ³	DI ref	Extended running/Fire alarm reference	+ 24V DC
P1:50/P2:60	B	Exo-line B	Modbus, Exo-line connection
P:151/P2:61	A	Exo-line A	Modbus, Exo-line connection
P1:52/P2:62	N	Exo-line N	Modbus, Exo-line connection
P1:53/P2:63	E	Exo-line E	Exo-line connection
74 ³	DI 4	Extended running	Normally open contact Use terminal 4 as reference

Connections to external functions cont'd

Terminal block		Description	Remark
75 ³	DI 5	Fire alarm	Normally open contact Use terminal 4 as reference
76 ³	DI 6	External stop	Normally open contact Use terminal 4 as reference
90	Agnd	AO Reference	neutral
93	AO 3	Control signal valve actuator, Water Heating	0–10V DC
94	AO 4	Control signal valve actuator, Cooling	0–10V DC

1. *Maximum current load for all DO combined: 8A*
2. *Connection to external pressure sensor in case of pressure controlled unit (VAV)*
3. *These inputs may only be wired to voltage free contacts*

Systemair AB reserves the right to make changes and improvements to the contents of this manual without prior notice.



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