

AirBox

source capture control panel



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1.0 General safety precautions

IMPORTANT – Please study all the instructions before mounting and commissioning.

Please keep these instructions in a safe place and instruct all users in the function and operation of the product.

Installation and service should only be implemented after studying the wiring diagram thoroughly.

Avoid the dismantling of any factory-mounted parts, since it impedes the commissioning of the equipment.

All electrical installations must be carried out by an authorised electrician.

1.1 Danger

Dismantling parts on the AirBox whilst in operation could be *deadly dangerous*.

Always disconnect the AirBox from the mains, when removing the cover.

2.0 Area of application

The AirBox is designed to trigger an alarm in case the pressure is above or below, the programmed parameters. In Denmark an alarm system is required by law, on all ventilation systems. The functionality of the AirBox, will in most cases be used for monitoring the differential pressure over a filter, and use the alarm function to trigger the cleaning process in the filter.

3.0 Technical data

The AIRBOX is supplied with 8 active in- & outputs (terminal T2-T10). The built-in pressure sensor is used for pressure measuring and regulation, and is programmed and showed in the 4-figured **display**.

The Menu-functionality is programmed from the display by means of 4 keys, which gives access to adjustment and reading of the 8 process parameters (parameter P0-P19).

4.0 Basic installation of the AirBox (program 530/535)

1. Connect the long piece of the supplied 4mm hose to the “-“ connection on the built-in pressure transducer. Connect the other end to the clean side of the filter. NB! Avoid bends!!
2. Connect the other section of the 4mm hose to the “+“connection on the built-in pressure transducer. Connect the other end to the dust side of the filter. NB! Avoid bends!!
3. Select the right software program (530 for pressures between 200-9900Pa) and 535 for 10-1000Pa.
4. Short circuit the T4 terminal
5. Connect the AirBox to 230 Volts as shown in the diagram

5.0 Adjustment of parameters for differential pressure

The AirBox contains 2 software programs (530 & 535), which controls how the AirBox behaves. The AirBox is by default set to 530. We now want to set up the AirBox for differential pressure.

1. After turning on the power, the Display will show "P0" on power-up
2. Press "ENTER" and select the appropriate software program by scrolling with the "+" and "-" keys and the press "ENTER" once more.
3. Shift to P1 (the set point parameter) by using the "+" key and the press "ENTER" – adjust the value to your desired set point pressure (in Pascals) and press "ENTER" once more.
4. Shift to P2 and set the lower alarm point. In practice, this indicated the minimum pressure [Pa] that the Airbox may reach before triggering the alarm function. Press "ENTER" once more.
5. Shift to P3 to set up the upper alarm area. In practice this point indicates the maximum pressure level [Pa] (this could fx. be 2000 Pa) that the Airbox may reach before triggering the alarm function. Press "ENTER" once more.
6. In order to save all the adjusted parameters, use the "+" until you get to P10.
7. Keep the "ENTER" key pressed until you get a beep (tells you that the changes you have made are now saved in EEPROM).

8. In case of failure – cut the power for at least 20 seconds and put it back on. The AirBox is now reset and you must start the programming procedure again.

5.1 Other settings

The alarm function can be turned of, by the T3 terminal off or setting the parameter P2 = 0.

The control function and the alarm function can also be turned on/off in terminal T4

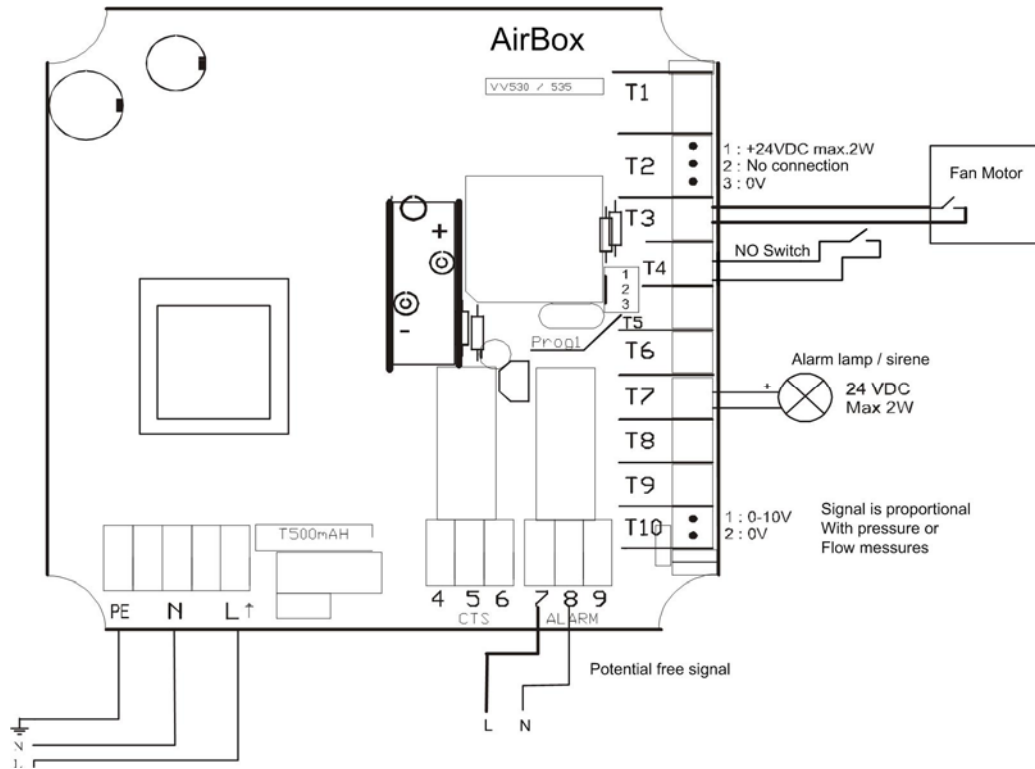
6.0 Error correction

In case the Functionality of the Airbox is not as expected, please use the following check-list:

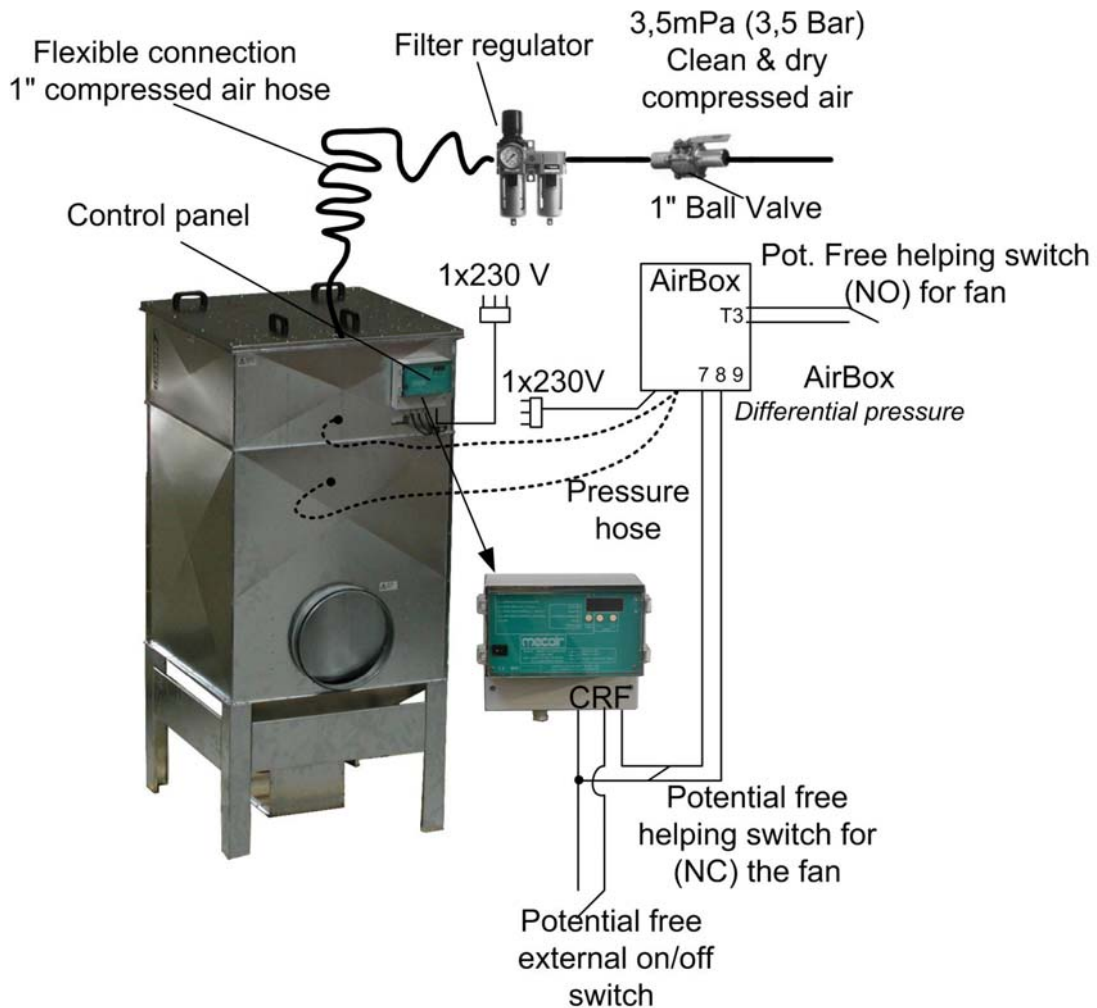
- The alarm function (green lamp) is switched off – Because T3 or T4 is not connected.
- The control is turned of – because T4 is not short circuited
- The pressure sensor measures imprecisely – because the sensor is not calibrated precisely (ask your dealer)
- The pressure measurement is switched off or is un-precise – Because there is a bent on the pressure hose
- Alarm function is triggered with out a reason – Because there is a bent on the pressure hose
- Alarm function is triggered with out a reason – Because the parameter span in P2/P3 is to narrow. Raise the P3 level!
- The light in the display is turned off – because the fuse in the power supply has to be changed.

Remember to switch off the 230V before the AirBox is opened.

7.0 Wiring for AirBox



7.1 Wiring for AirBox, control panel & filter



Parameter tabel in V530/V535

Par.	Meaning	V530		V535		Description/Action Def. = Default value (from factory)
		Area	Def.	Area	Def.	
P0	VV-version indicator	530	530	535	535	Choose version VV530 or VV535
P2	Min. limit for pressure-alarm	0-9999	200	0-1000	10	Alarm at to low pressure (P10<P2)
P3	Max. limit for pressure-alarm	0-9999	999 9	0-1000	1000	Alarm at to high pressure (P10>P3)
P4	Turn off delay (sec)	0-3600	10	0-3600	10	Time (in sec) from off-signal to execution
P10	Shows actual pressure	200-9999	0	10-1000	0	Shows the measured differential pressure in pressure sensor. Plotted P-values stored w. ENTER
P11	Shows flow (l/s) in Flow measure m. K-factor	0-9999	0	0-9999	0	Shows calculated flow, (fx. FMU) with K-factor & pressure-diff. (Pa)
P12	Requested pressure at 10V	200-9999	999 9	10-1000	1000	Pressure (Pa) at 10V in 0-10V signal This value is calculated for the appropriate flow at 10V in 0-10V flow signal
P13	Choose between pressure or flow as a 0-10V signal	0 & 1	0	0 & 1	0	0 = Pressure signal on output T10 1 = flow signal on output T10
P15	K-factor for Flow measuring(l/s)	1-200 l/s	45 l/s	1-200 l/s	45 l/s	K-factor for resistance in Flow measure (fx FMU) for flow measuring
P18	Activation of PIN-code					PIN-code 1 figure at a time
P19	Shows actual pressure					New PIN-code stored w. TEST in 10 sec.
P20	Reset to Default-value	Sets Parameters back to default				Used after break down
P22	Min. limit in 0-10V	0-100	0	0-100	0	Min. limit 0-10V output (10=1V)
P23	Max. limit in 0-10V	0-100	100	0-100	100	Max. limit 0-10V output (100=10V)

Terminal table in V530/V535

Terminal	Function	Activation / connection	Use & adjustment
230V input.	230 V power supply for AIRBOX		Always to be connected
Pressure sensor	Zero point adjustment	Adjusted on large pot-meter	To be turned until the display shows 2-5 Pa
Alarm output	To independent power source	Alarm with independent power source or battery backup	7: COM 8: NC output 9: NO output
CTS output	Open/close output	Follows terminal T4, T8 or T9 with Time delay P4	4: COM 5: NC output 6: NO output
T2 output	24V DC supply	constant 24V supply	Supply to the turning damper
T3 input	Start/stop for alarm function	Alarm function is activated when T3 is closed by fan or short circuit	Start/stop of alarm function
T4 input	Start of control+alarm	Connect manual switch, short circuit,	Start/stop of control function
T5 output			Not in use
T6 output			Not in use
T7 output	Alarm output to 24 V lamp/siren	To be activated with both T3 & T4 + P10<P2 or P10>P3.	Remember to turn + & - as in diagram T7 May never be short circuited
T8 input			Not in use
T9 input			Not in use
T10 output.	Pressure transmitter	Shows 0-10V signal proportional with the measured pressure	

7.0 Liability

Warranty

Geovent A/S grants a warranty for products, which are defective; when it can be proved that the defects are due to poor manufacture or materials on the part of Geovent. The warranty comprises remedial action (reparation or exchange) until one year after date of shipment. No claims can be made against Geovent A/S in relation to loss of earnings or consequential loss as a result of defects on products from Geovent.

User liability

In order for Geovent to be capable of granting the declared warranty, the user/fitter must follow this Instruction Manual in all respects.

Under no circumstances may the products be changed in any way, without prior written agreement with Geovent A/S.

8.0 Declaration of conformity

The manufacturer: GEOVENT A/S
HOVEDGADEN 86
DK-8831 LØGSTRUP

hereby declares that:

The product: AirBox

has been manufactured in compliance with the directions of the Directive Council of 14 June 1989 in common approximation to the legislation of the member states regarding machine safety (89/392/EEC amended by the directive 91/368/EEC) with special reference to appendix 1 in the Directive regarding basic health and safety requirements in connection with the construction and manufacturing of machinery.

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LØGSTRUP

Position: Managing Director
Name: Steen Molsen

Date: 03/10/2005

Signature: _____



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