Installation and Operating Manual

Pluggit Avent P180

Please observe and complete the commissioning protocol on page 23!

Best possible air quality and highest ventilation efficiency for living areas up to 120 m²

- Particularly quiet thanks to sandwich design
- Supply air can be optionally introduced high up or low down with special silencers
- High-performance heat exchangers made of aluminium: energy savings through optimum heat recovery, highly effective thermal conductivity and extremely low pressure losses
- Backward bent ventilator blades made of plastic: maximum efficiency, highly resistant to soiling, easily cleaned and long service life
- DC motors for lower power consumption
- Maximum rated volume flow (level 2) up to 130 m³/h
- Remote control with cord featuring a large display; facilitates easy viewing and setting of temperatures and ventilator fan speeds
- Passive house certified

Fresh Air Units
Passive house certified

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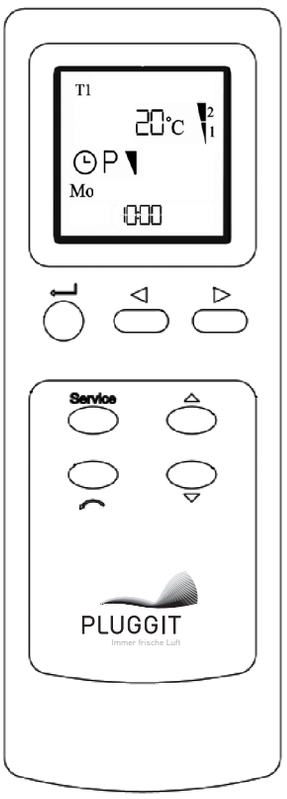
REMOTE-CONTROL QUICK GUIDE FOR AVENT P180



T1: Outside temperature in °C
T2: Fresh air supply temperature in °C
T3: Exhaust air temperature in °C
T4: Outlet air temperature in °C

S1: Current speed of outlet air ventilator
S2: Current speed of supply air ventilator
The figure denoting the speeds must be multiplied by 10 (units in rpm).

Setting time and weekday:

Press any button to activate the remote control
Press ENTER ↵ the clock symbol flashes
Press ENTER ↵ the weekday flashes
Use the LEFT and RIGHT ◁ / ▷ buttons to select the weekday
Press ENTER ↵ the hours flash
Use the UP and DOWN △/▽ buttons to set the hour
Press RIGHT ▷ the minutes flash
Use the UP and DOWN △/▽ buttons to set the minutes
Press ENTER ↵

Setting the performance level manually:

Press any button to activate the remote control
Use the UP and DOWN △/▽ buttons to select the desired level

Level 3	Super mode; switches back to Level 2 automatically after six hours
Level 2	Normal mode
Level 1	Economy mode
OFF	Shutdown mode; switches back to Level 2 automatically after two hours

Resetting the filter warning:

Press any button to activate the remote control
Press ENTER ↵ the clock symbol flashes
Press RIGHT ▷ 2x the filter symbol flashes
Press ENTER ↵

If ERROR 02 is displayed, briefly interrupt the power supply to the ventilation unit. Then the actions indicated must be carried out within a minute.

The following actions must be carried out by a skilled tradesperson only Heating appliance setting:

Press any button to activate the remote control.
Press and hold down the UP and DOWN △/▽ buttons for 10 seconds.
Using the UP and DOWN △/▽ buttons select:

0 = off
1 = on

Press ENTER ↵

Setting the volume flow rate:

Press any button to activate the remote control.
Press and hold down the SERVICE and DOWN ▽ buttons for 10 seconds. Use the UP and DOWN △/▽ buttons to select the required ventilator fan

(2) supply air
(1) outlet air

Press the RIGHT ▷ button once; the speed flashes
Use the UP and DOWN △/▽ buttons to set the speed.
Speed displayed in three digits; settings in steps of 10.
Press ENTER ↵

ESSENTIAL INFORMATION IN BRIEF

We would like to congratulate you on purchasing this high-quality Pluggit Avent P Fresh Air System unit with heat recovery (HR). The unit is part of the Pluggit 2Q-Fresh Air System that offers you, the user, many advantages with regard to your health and general well-being, it saves a lot of energy and protects the very fabric of your building.

- Guarantees a minimum change of air in accordance with § 6 EnEV (German Energy Saving Ordinance)
- Constant supply of fresh air
- Reliable protection against damage due to damp and mould forming
- Constant removal of stale, damp air
- High levels of heat recovery
- High standards of hygiene, certified cleanability

Pluggit products are manufactured to strict quality standards, are highly efficient and have a very long service life.

Caution! To guarantee flawless operation please read the instructions carefully to fully understand how the unit functions and is commissioned.

Important information:

- Always keep filters and air inlets clean.
- The unit should be left on all the time.
- If the outside air temperature is very low it can prove practicable to set the unit to run at Level 1 (basic ventilation) – at least when no one is at home – to prevent the air humidity in the house from sinking too low.
- Alterations that influence the system pressure (adding or removing components) can lead to faults occurring!
- Please do not make arbitrary alterations to the basic settings of the remote control. Keep the remote control out of reach of children.
- The unit is equipped with a manually operated 'speed controller'.
- Filter monitoring is time dependent.

SAFETY INFORMATION

The unit has been built according to European safety standards. Improper use can lead to damage or injuries. Please read the whole of this document carefully and adhere to the instructions, in particular if the device is open (for example when changing filters):

- The unit shuts down automatically when opened. Nevertheless, you must disconnect the unit from the power supply before beginning any work on the unit.
- Wait until all ventilator fans stop rotating.
- Observe local regulations (installation and use) when using the unit in a house with an open heating appliance or other non room-sealed heating appliances.
- Do not operate the unit without filters or when the filters are soiled.
- Do not make any modifications to the inside of the device.
- All maintenance work (except to change filters) must be carried out by skilled technicians.

OPERATING INSTRUCTIONS – GENERAL INFORMATION

Avent P fresh air units with heat recovery functionality provide ventilation for dwelling areas and remove used air from so-called wet-rooms such as bathrooms, toilets and kitchens. This means that the planned and required minimum air change is guaranteed through a constant supply of fresh air. At the same time this prevents mould forming and damage due to damp. Without a fresh air unit you would have to open all the windows every two hours to achieve the same result.
Damp, stale and contaminant laden air is extracted. The heat contained within this air is used to heat the fresh incoming air. Please note that heat recovery can only work properly if the building is well sealed and the windows closed.
However, it is still possible to air rooms quickly by opening the window if the rate at which the air is changed is not sufficient for any particular reason (cigarette smoke, kitchen smells, party ...).

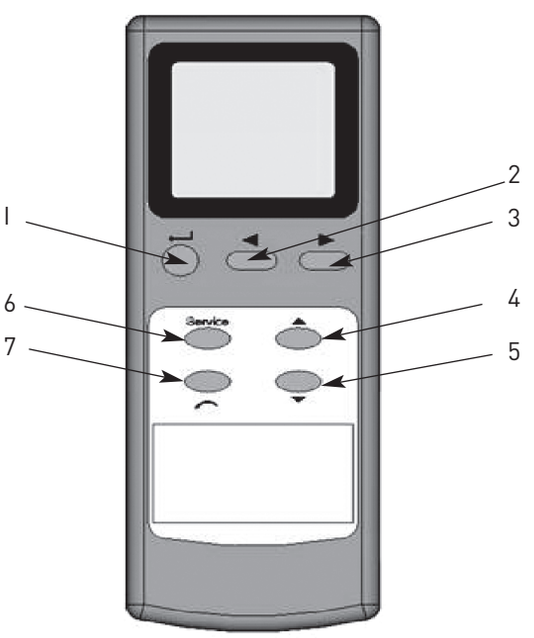
The system should not be used during the building phase as the ductwork, filters and ventilator fans can become soiled with building dust. The system should be commissioned after all other installation work has been completed.
Furthermore, the device was not designed to dry-out newly built structures. There is too much condensation during this phase; intensive heating is necessary in addition to thorough airing by opening the windows or a special dehumidifier has to be used. Please seek advice from your architect.

OPERATING INSTRUCTIONS

The required air flow rates are determined during the planning stage and programmed by a technician. Using the UP and DOWN △/▽ buttons on the remote control (please note: the remote control switches to the sleep mode after two minutes inactivity and is activated by pressing any of the buttons) you can select between the following three levels in the main display:

Level 1:
Minimum ventilation if you are going to be absent for a longer period of time (for example work, holiday) or outside temperatures are very low (below -5 °C).
Level 2:
Basic ventilation for normal use.
Level 3:
Super ventilation, for example when cooking, smoking cigarettes or the shower is used a lot.

In addition, ventilation levels can be altered automatically with the aid of a weekly programme, for example to switch to Level 1 when everybody is out working or to switch to Level 3 when cooking or showering.
Once the programme is complete the unit reverts automatically to the ventilation level that was active before the programme started.



1) INPUT/ENTER ↵
2) LEFT ◁
3) RIGHT ▷
4) UP △
5) DOWN ▽
6) SERVICE
7) BACK/ESCAPE ↶

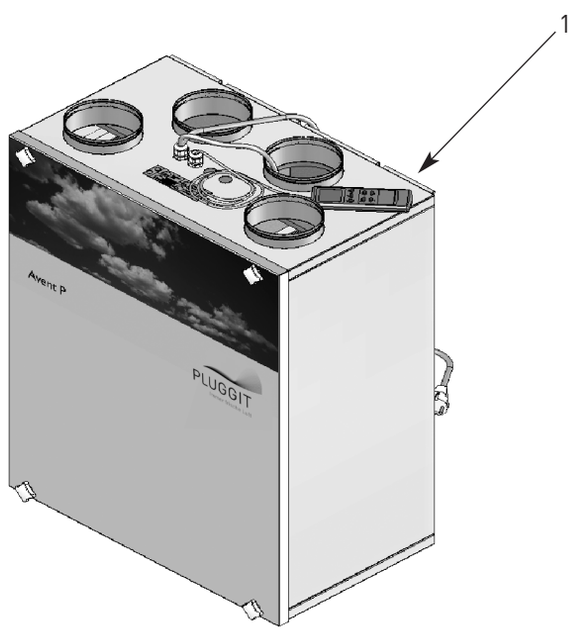
Caution!!!

The work described below, in particular that regarding changes to the settings, must be carried out by a specialist company. Alterations to the basic settings, for example using the Service buttons to alter the temperature settings, can result in situations that endanger life and the building (heating appliance setting) and lead to the guarantee being declared null and void.
Any servicing necessary to restore the basic settings in such a case will be subject to a charge.

UNPACKING

The carton contains the following items:
The ventilation unit with remote control (1) secured to the top of the unit, a wall rail, four rubber feet with washers and screws.

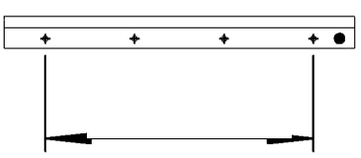
- Open the carton at the top.
- Remove all of the packaged items.
- Withdraw the unit carefully from the carton.



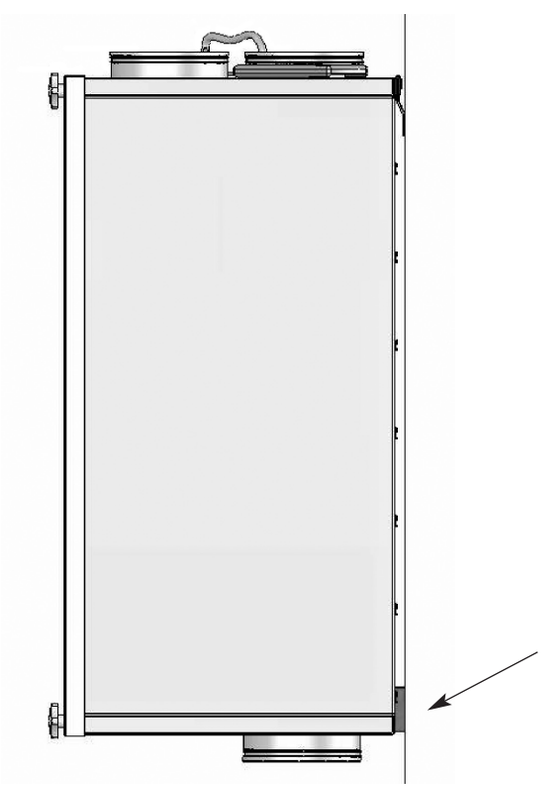
Observe the following points when selecting the installation location:

- Ensure the ventilation unit is accessible at all times for maintenance purposes.
- Allow 1.2 m of free space above the unit for the connections.
- The installation location must be carefully selected to ensure that there is no transmission of noise via the wall.
- The place of installation must not be cooler than 7 °C even in winter and the condensate outlet must be frost-proof.
- Ensure there is sufficient space in front of the front cover of the device so that maintenance work can be carried out and the filters replaced without hindrance.

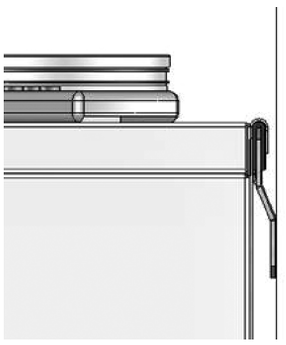
1. Attach the wall rail horizontally to the wall using two to four screws suitable for the type of wall construction.



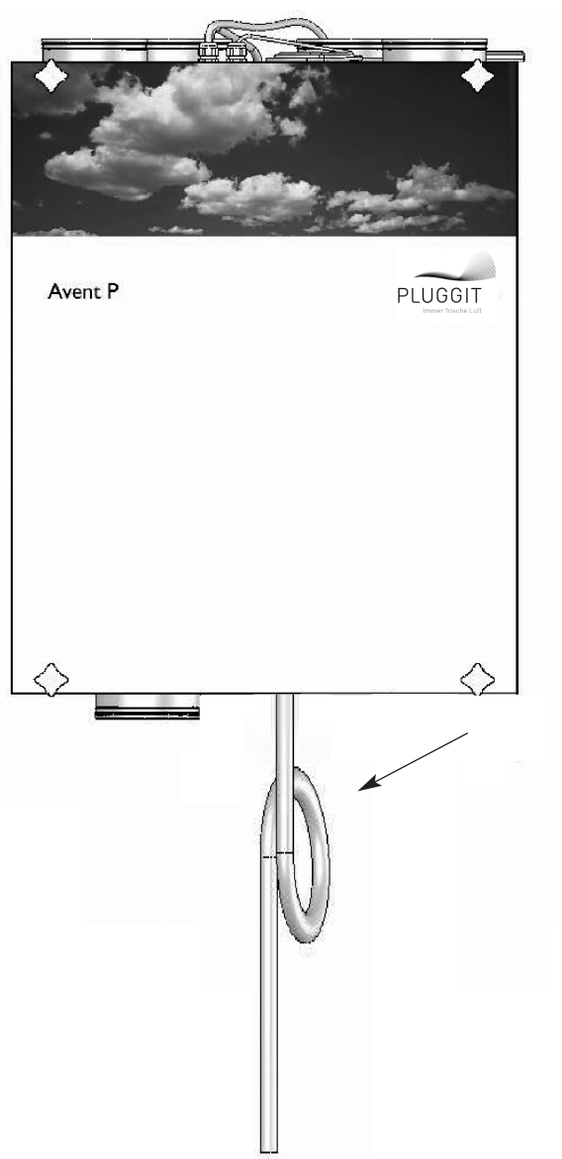
2. Attach the two self-adhesive rubber buffers to the bottom of the device on the side facing the wall.



3. Mount the unit onto the wall. Ensure the rubber dampers are positioned between the wall rail and the device.



4. Attach the condensate hose to the condensate drain on the bottom of the unit.

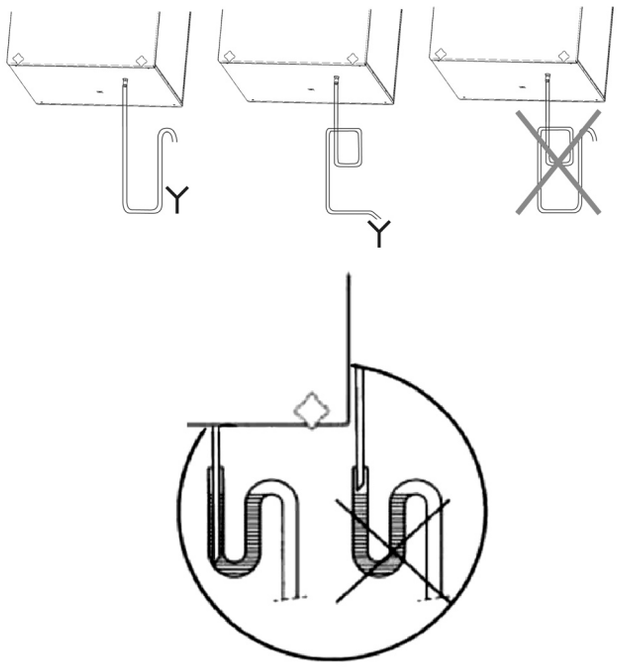


5. Install a siphon with water trap to ensure that no air can be drawn into the unit via the condensate hose.

6. Connect the other end of the hose to a suitable container and pour approx. 1/4 litre of water into the condensate trough. Ensure that the water can drain away without hindrance.

7. Outside and outgoing air ducting must be vapour-tight thermally insulated along their entire length, meaning from where they come into contact with the unit to the outside wall. When routed through cool areas exhaust air ducting must be very well thermally insulated to avoid condensation forming on the insides. Thermally insulate supply and exhaust air ducting that is routed through cool areas to counter heat loss.

8. The remote control is screwed to the wall with the wall bracket adjacent to the ventilation unit.



COMMISSIONING

The unit starts up as soon as 230 V is applied. The unit must be commissioned by a skilled technician. The unit does not perform an automatic calibration routine; it must be balanced (the balance between the flow of supply air and the exhaust air). In addition, it is possible to display the four temperatures measured in the unit and the delivery rate of the ventilator fans (S1: outlet air fan; S2: fresh air fan).

T1 Outside air temperature

T2 Fresh air supply temperature

T3 Exhaust air temperature

T4 Outlet air temperature

The respective temperatures are measured before or after the heat exchanger as appropriate.

The air flow rate for ventilation levels 1, 2 and 3 have been factory set as follows:

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Level 1	70% of Level 2
Level 2	130 m^3/h
	(adjustable from 70 to 130 m^3/h)
Level 3	130% of Level 2

The volume capacity depends on the system pressure. The volume flow rates correspond to reference values.

To display the current ventilator fan speed when S1 or S2 (volume flow rate) is displayed press and hold down the SERVICE button. The value displayed represents the speed divided by 10 (thus, 155 indicates a speed of 1550 rpm).

SETTING THE VOLUME FLOW RATE

The unit is factory-set at 1550 rpm for Level 2 exhaust air extraction and fresh air supply.
That corresponds to a volume flow rate of approx. 130 m^3/h. For Level 2, the possible speeds are 900-2100 rpm.

If the preset speed must be changed please press and hold down the SERVICE and DOWN ▽ buttons simultaneously for 10 seconds. 1:155 (1 = exhaust air fan S1; 155 = 1550 rpm) is displayed on the bottom of the display. Use the RIGHT ▷ and LEFT ◁ buttons to select the mode to be altered. For example, if the fan speed is to be altered, press the RIGHT ▷ button followed by the UP △ or DOWN ▽ arrow button to select the desired speed for the exhaust air. The speed for Level 1 is automatically reduced by 30% to 70% of Level 2 and Level 3 is automatically increased by 30% to 130% of Level 2, which means these levels must be set separately. Press the ENTER ↵ button to confirm your selections; the display reverts to the standard display mode.

To view the current ventilator fan speeds use the LEFT ◁ and RIGHT ▷ buttons to move the cursor to position S1 (exhaust air fan) or S2 (fresh air supply fan).

REMOTE CONTROL SYMBOLS

T1: Outside air temperature in the ventilation unit (summer bypass not opened)

T2: Fresh air supply temperature

T3: Exhaust air temperature

T4: Outlet air temperature

S1: Volume flow rate – exhaust air

S2: Volume flow rate – fresh air supply

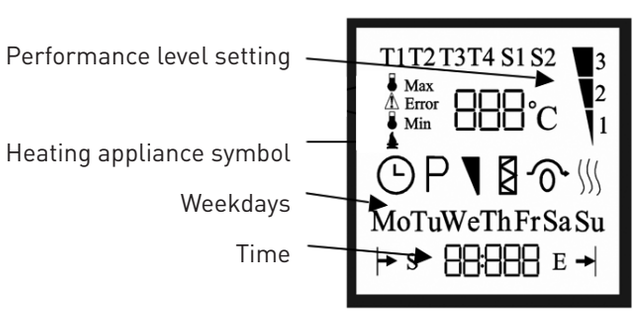
Clock: please refer to 'setting the time and weekday'

P Programming: please refer to 'Weekly programme'

Setting the volume flow rate: this must be undertaken by a skilled service technician only!

Filter warning: flashes when filters are soiled. Please refer to 'Changing filters'

Preheating: flashes if preheating is selected (even if no electrical preheater is fitted)



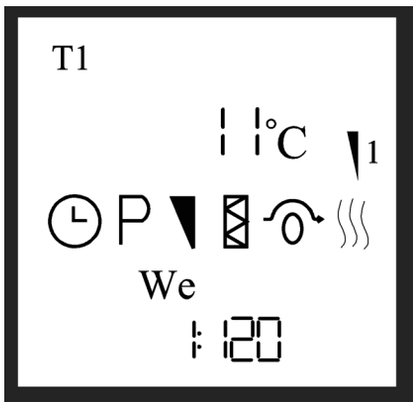
S Start time for a programme:
Please refer to 'Weekly programme'
flashes when the performance level for a programme is being determined

E End time for a programme: please refer to 'Weekly programme'

The bypass symbol is displayed although the unit is not equipped with a bypass

SELECTING THE AIR FLOW RATE

Using the UP and DOWN △/▽ buttons you can choose between the performance levels 1, 2 and 3 from the main screen display. Level 1 then automatically sets to 70% of the volume flow rate of Level 2, Level 3 to 130% of Level 2.



SETTING THE TIME AND WEEKDAY

It is only important for the time to be set correctly if weekly programmes have been programmed and are active. The time needs to be reset after a power failure occured. The following button combinations will enable you to set the weekday and the time:

1. Activate the remote control (press any button)
2. Press the ENTER ↵ button once (Clock symbol ◷ flashes)
3. Press the ENTER ↵ button again (display line weekday Mo...Su flashes)
4. Select the day using the RIGHT ▷ or LEFT ◁ button
5. Press the ENTER ↵ button to confirm (00 : 00 flashes)
6. Set the hour using the UP and DOWN △/▽ buttons (00 : 00 flashes)
7. Press the RIGHT ▷ button once (00 : 00 flashes)
8. Set the minutes using the UP and DOWN △/▽ buttons (display e.g. 16:35)
9. Press the ENTER ↵ button to confirm the time

Please note: For display purposes the weekdays are abbreviated as follows (Mo = Monday, Tu = Tuesday, We = Wednesday, Th = Thursday, Fr = Friday, Sa = Saturday, Su = Sunday).

To make use of the weekly programme at the required times the time and weekday must be reset every time filter maintenance is carried out or the power supply to the unit is turned off (please refer to the section 'Setting the time and weekday')! Your remote control supports 20 different daily and time-dependent programmed settings for each of the three performance levels.

Example 1: Level 3 is to be activated every day of the week when meals are prepared. This requires a programme (programme 1: Mo to Su - 12:00 to 14:00 - Level 3).

Example 2: In addition, Level 1 should run from Friday to Sunday evening from 00:00 to 10:00. This requires a further programme (programme 2: Sa + Su - 00:00 to 10:00 - Level 1).

Please note that

- **Levels 1 and 3 only can be programmed. This is because Level 2 is set as standard and the system automatically reverts back to Level 2 when no programme is active.**
- **It is not possible to set a programme that runs from one day into the next. For example: a certain setting is to be active from Monday evening until Tuesday morning. Two programmes are necessary (one for the time until Mo 23:59 and one from Tu 00:00 onwards)**
- **There must be a break of one (1) minute between the two programmes to allow the second programme to be recognised.**
- **During the times in which no programme is active the unit operates at the last selected level (default: Level 2).**

Example 3: If, in addition, Level 1 is to run from Sunday to Friday from 22:00 until 06:00 respectively, then two programmes are required (programme 3: Mo to Th + Su 22:00 until 23:59 Level 1, programme 4: Mo to Fr 00:00 until 06:00 Level 1).

To alter the performance levels when a programme is active press the UP and DOWN △/▽ buttons. Once the programme is finished the unit switches back to the previously set level.

Example 4: Level 1 should operate between 08:30 and 16:30 from Monday to Friday as all occupants are away from home at those times. This requires the following input:

Fig 1

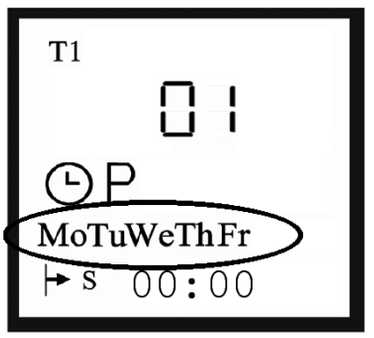


Fig 2

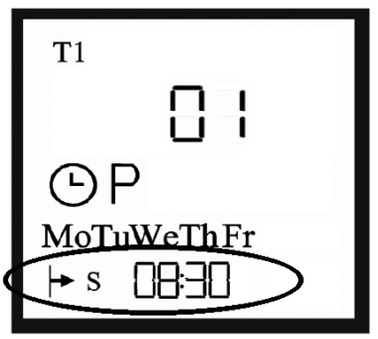


Fig 3

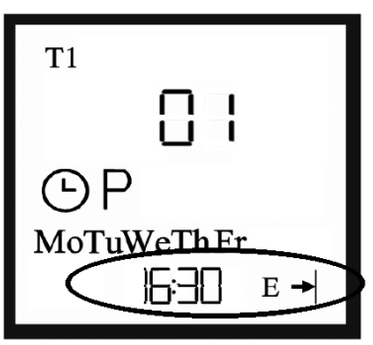
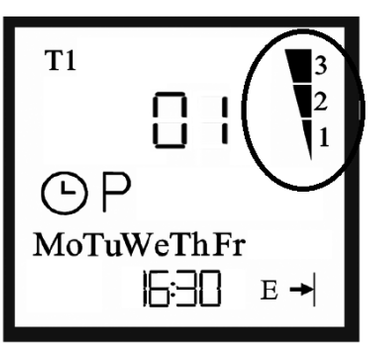


Fig 4



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1.	Activate the remote control	(press any button)
2.	Press ENTER ↵	(Clock symbol 🕒 flashes)
3.	Press the RIGHT ▷ button	(P flashes in the display)
4.	Press ENTER ↵	(01 flashes in the display)
5.	Using the RIGHT ▷ button, another if necessary select programme number X	(0X flashes in the display)
6.	Press the ENTER ↵ button to confirm	(Mo flashes in the display)
7.	If desired, press the Up △ button to activate the day	(Mo lights continually, Tu flashes in the display)
8.	If you do not want the programme to apply to that day press the RIGHT ▷ button to move to the next day	(Tu flashes in the display)
9.	Repeat steps 7 and 8 until all the desired days are activated (Mo to Fr) – (please refer to Fig. 1) To deactivate selected days press the DOWN ▽ button!	
10.	Press the ENTER ↵ button to confirm selected days	(→ S lights up continually; 00:00 flashes)
11.	Using the UP △ button select the 'start' hour	(08:00 flashes in the display)
12.	Press the RIGHT ▷ button to switch to the minutes display	(08:00 flashes in the display)
13.	Using the UP △ button select the 'start' minute	(08:30 flashes in the display, please refer to Fig 2)
14.	Press the ENTER ↵ button once to confirm	(E → lights up continually; 08:30 flashes)
15.	Repeat the steps 11 to 13 to set the 'stop' times (please refer to Fig. 3).	
16.	Press the ENTER ↵ button once to confirm	(3 2 1 flashes in the display, please refer to Fig 4)
17.	Press the DOWN ▽ button to select Level 1	(1 flashes in the display)
18.	Press the ENTER ↵ button once to confirm	(standard display mode)

Using the steps described above you can programme a total of 19 additional performance level settings. To check programme settings proceed as described above without altering the programme.

DELETING A WEEKLY PROGRAMME

Proceed as follows to delete wrong or outdated programmes:

1. Activate the remote control (press any button)
2. Press the ENTER ↵ button once (clock symbol ◷ flashes)
3. Press the RIGHT ▷ button once (P flashes in the display)
4. Press the ENTER ↵ button once (P and 01 flash in the display)
5. Using the UP △ button select programme number X (0X flashes in the display)
6. Press and hold down the ESCAPE ↶ button until the display reverts to the standard display mode.

CHANGING FILTERS / MAINTENANCE

The outside and exhaust air is cleaned via one or several filters. These must be checked regularly to keep the air and the ducting clean as well as to ensure the system operates quietly. Depending on the level of contamination of the outside air, cleaning or replacing the filter(s) can become necessary just two weeks after commissioning (for example due to heavy building-site dust levels in new development areas) or after six months. You can determine if it is necessary to clean or replace the filter(s) if the noise level of the ventilator fans in the unit increases, by visually checking the filter(s) or when the filter symbol on the remote control flashes.

After 4.5 months the filter symbol ⧖ begins to flash on the remote control; this is designed to remind you that the time to replace the filters is approaching. After a further 1.5 months ERROR 02 is displayed and the unit will shut down. Check the filters now at the latest and cancel the filter disable command initiated by ERROR 02. Press ENTER ↵ then move to the filter symbol ⧖ using the RIGHT ▷ button; to enable the unit press ENTER ↵ .

We recommend:
Check the ventilation unit carefully once a year (for example in spring) independent of the filter alarm function and replace all filters, if necessary.

The air ducting, particularly the air supply ducts should be checked every 10 years and cleaned, if necessary.

If you wish to fit different types of filters than previously fitted (for example fine filters instead of the standard G4 filters) the unit must be adjusted to allow it to be optimally adapted to the new system conditions. The adjustments must be carried out by an authorised specialist company.

Tip:
To prevent mix-ups, mark the fresh air filter and exhaust air filter! Check the condensate drain to ensure that this is clean and that any condensation can drain away freely.

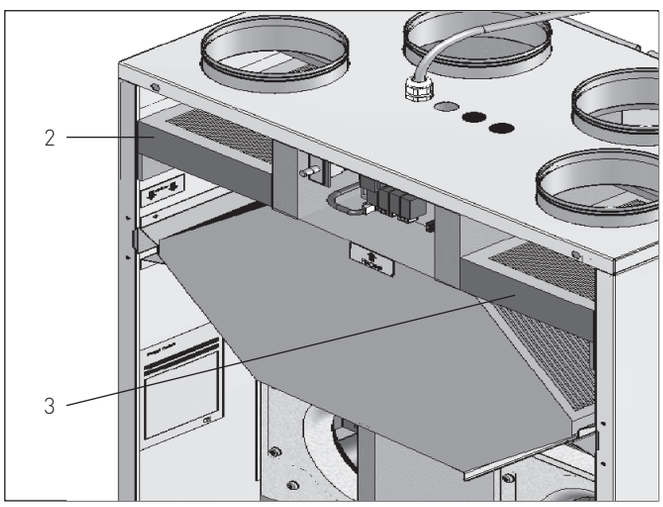
REPLACING FILTERS

The user is allowed to replace or clean the filters (please refer to the graphic opposite):

1. Remove the mains plug from the socket or switch off the power at the fuse
2. Remove the four hand screws from the front of the unit and remove the unit cover
3. Pull the filters (2, 3) to the front and withdraw
4. Insert cleaned or new filters with the grid facing downwards (arrow indicating the direction of flow facing down)
5. Replace the unit cover and secure with the four hand screws
6. Insert mains plug or switch on the power at the fuse
7. If ERROR 02 is displayed, the filter disable command must be reset to the factory setting. Please refer to page 13

To remind you when you last cleaned or replaced the filters we recommend that you write down the date on the last page of these Operating Instructions and place the manual on top of the unit for easy access.

Caution!
Please check all of the filters in the system and clean or replace if necessary! There are other filters in the system in addition to those in the unit, possibly in the exhaust air inlets (kitchen, bathroom, WC, utility room and similar) or in the air-intake tower of the geothermal heat exchanger. As a precautionary measure, please mark the filters! The exhaust air filter should not be used to filter the supply of fresh air.



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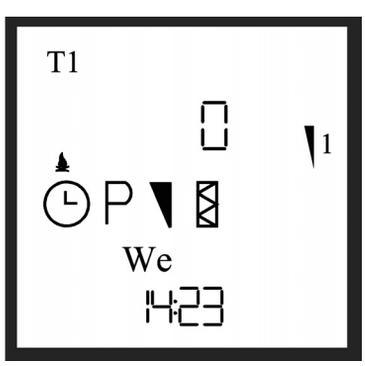
HEATING APPLIANCE SETTING

If you have a non room-sealed heating appliance (for example a stove), which is sensitive to the pressure balance in the house, you can alter the heating appliance setting using the UP and DOWN △ / ▽ buttons: 0c = not active, 1c = active.

By simultaneously pressing and holding down the SERVICE and RIGHT ▷ buttons for 10 seconds you will be prompted to enter your heating appliance setting:



If the setting is altered to the value 1c, the unit employs a different frost-protection strategy:
if a preheater is installed it will be activated if the outside temperature T1 falls below 0 °C. The unit will shut down for four hours if a ventilator fan attempts to run at a performance level that falls below a level specified in the table (for example de-icing is required because an undersized heat exchanger has been fitted); when the time has elapsed the unit will automatically start up again. If you have a heating appliance and do not want to use a preheater you can significantly increase the service life of the unit by using a geothermal heat exchanger.

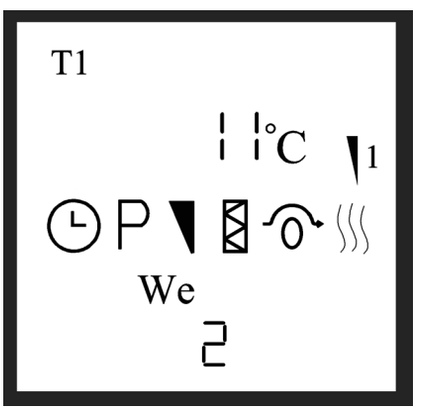
CONTROLLING THE EXTERNAL PREHEATING DEVICE (FROST PROTECTION)

The controller is equipped with a 0-10 V control output for an external preheating device (accessory). The preheater prevents exhaust air condensate from freezing. Without the preheater or preheating by means of a geothermal heat exchanger the supply or fresh air would be restricted by the integrated frost-protection circuit in the device. This restriction is not desirable, because at very low outside temperatures it leads to an imbalance of the volume flow rates and underpressure in the building as a result of which the

1. outside air is drawn into the building through the joints and
2. can hinder the extraction of exhaust gas from non room-sealed heating appliances. This can lead to dangerous concentrations of carbon monoxide in the room.

If an external preheating solution has been installed (for example a preheating device or a geothermal heat exchanger) this guarantees that the outside air is heated before it enters the ventilation unit to prevent the heat exchanger icing up. To display the control voltage for a possibly connected electrical preheating device press ENTER ↵, move the cursor to the symbol for the preheater ≋ and press ENTER ↵ again.

The control voltage for the preheating device will now be displayed. The interval ranges between 1-10 Volt. When the value has been displayed for 10 seconds the display reverts to the standard display mode.



Please note: This functionality requires a cable harness for additional functions (Type No.: APKB1). A suitable preheating device is available from Pluggit (Type No.: APHR 180)

OPTIONAL HUMIDITY SENSOR/HYGROSTAT FOR THE EXTERNAL PREHEATING DEVICE (FROST PROTECTION)

Pluggit GmbH offers a humidity sensor as an accessory. A suitable installation location would be the bathroom, for example. If the preset humidity limit is reached the unit automatically switches to Level 3. The unit will then also automatically revert back to Level 2 once humidity levels falls below the set limit value. The humidity sensor (potential-free switch) is wired to a PCB and is automatically recognised by the controls.

Please note: This functionality requires a cable harness for additional functions (Type No.: APKB1).

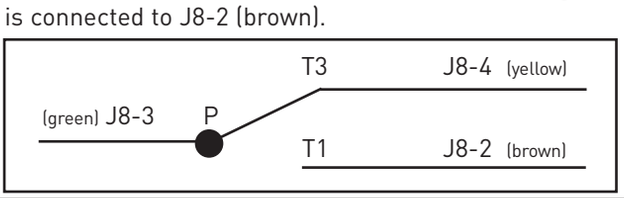
The hygrostat offers three functions:
L = supply phase = 12V Pin No. 3 (green)
E = dehumidification = Pin No. 4 (yellow)
B = alternative humidification

That means either dehumidification or humidification must be chosen. Under normal circumstances 'dehumidification' is selected. The following termination is required for the 'humidification' function.
L = supply phase = 12V Pin No. 1 (white)
B = humidification = Pin No. 2 (brown)

OPTIONAL EXTERNAL CONTROLLER (3-STEP SWITCH, BUS)

The fresh air unit can be controlled externally in conjunction with the following options and the additional cable (Type No.: APKB1):

1. 3-stage switch: The unit is set to Level 2 via the remote control. Connecting J8-3 (green) with J8-4 switches the unit to Level 3; the unit runs at Level 1 when J8-3 (green) is connected to J8-2 (brown).



   Consequently, when connecting the Pluggit 3-stage switch J8-3 must be wired to P, J8-4 to T3 and J8-2 with T1.

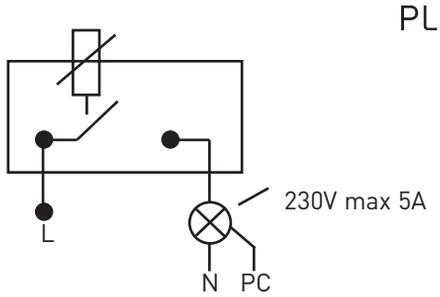
2. A BUS system can achieve the same switchover by means of actuators. In addition, the relay between the contacts J3-3 and J3-6 can be utilised for signalling faults.

3. Applying 3 Volt (potential-free) to the terminals J8-7 (positive terminal, blue) and J8-8 (negative pole, red) switches the unit to Level 1; 6 Volt Level 2 and 9 Volt Level 3. This facilitates setting several units to a certain level, for example.

ALARM WARNING MESSAGE

An alarm message is issued when a fault alarm occurs on the ventilation unit. It is not possible to differentiate between the various fault alarms.

Connection J3-3 (input) (brown)
Connection J3-6 (output) (yellow)



ALTERNATIVE POTENTIAL-FREE OUTPUT

A heating device (max. 900 W) that does not allow 0-10 V control (e.g.: third-party manufacture – ON/OFF) can be connected to the terminal J3.

ON = T1 below +/-0 °C
OFF = T1 above +1°C
Connection J3-1 (input) (white)
Connection J3-4 (output) (green)

Caution!
The maximum permissible load for the two potential-free outputs is 230V and 5A. If one of these values is exceeded control must be executed via a separate relay installed on-site. Failure to comply with this condition will lead to the guarantee being declared null and void.

MAINTENANCE PROCEDURES FOR AP SERIES VENTILATION UNITS

End customer:

Filter maintenance
If the filter maintenance symbol is displayed on the remote-control display the weekly programme must be read-out of the remote control and noted. Then all filters in the system (in the ventilation unit, exhaust air inlets in the dwelling) must be cleaned or replaced as required.

ERROR 02
If ERROR 02 is displayed the system must be reset via the remote control.

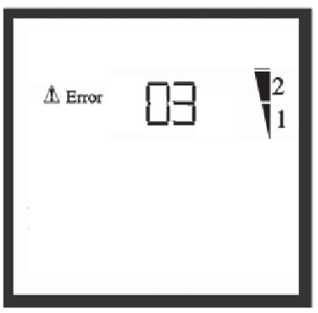
Specialist company:

System maintenance
Read-out the weekly programme via the remote control and write it down. Then carry out the following checks and cleaning procedures on the system:

- Check all filters in the system
- Clean the heat exchanger – rinse with water, if necessary
- Clean the ventilator fans with a brush or, if necessary, using compressed air
- Check that the temperature sensors are correctly positioned
- Clean the condensate drain and trough to ensure condensate can drain away freely. After cleaning ensure there is a water trap in the siphon
- Check the operational sequence of the ventilation unit
- Check the ducting for soiling (if possible)

After completing the maintenance work set the weekday and time before replacing the front cover.

Error codes are displayed on your remote control if fault alarms or malfunctions occur, for example ERROR 03. The error message can be reset by briefly disconnecting the ventilation unit from the power supply or opening the front cover. If there is a malfunction in the remote control this can be restarted by briefly removing and reinserting the batteries.



Caution!
End users should only try to rectify ERROR 02 by cleaning or replacing the filters as described in the section 'Changing filters'. All other errors must be rectified by an authorised specialist company or the guarantee will be declared null and void.

Anzeige	Error	Cause	Remedy
ERROR 02	Filter soiling in the unit of the distributor system	Unit shuts down due to filter soiling	Clean or replace filters (also those outside of the unit) and reset the ERROR Code
ERROR 03	Fault temperature sensor (symbol T1, T2, T3 or T4 flashes)	Cable break in temperature sensor	Check plug connection of temperature sensors on the PCB; replace temperature sensors if necessary
ERROR 05	Ventilator fan fault (S2 flashes - fresh air; S1 flashes - outlet air)	Ventilator fan defective; cable break	Check plug connection of ventilation fans on the PCB; replace fan if necessary
ERROR 06	Frost protection cycle despite high outside air temperatures	Heat exchanger soiled, temperature sensor defective	Check heat exchanger, clean if necessary (rinse). Replace all filters if necessary (incl. in geothermal heat exchanger, exhaust-air inlets etc); check settings
ERROR 07	Heat exchanger 'iced up'	Cold outside air temperatures, heat exchanger soiled, changes to system since first calibration	Unit automatically initiates restart after 4 hours. Check heat exchanger if error occurs again
ERROR 08	Fresh air supply < 6°C, automatic shut down	Exhaust air rooms or installation location too cold or exhaust air duct is blocked	Heat up the house
SOS	Display for operating mode that should only be activated following consultation with Pluggit	Accidental button combination pressed (SERVICE and ENTER ↵ pressed and held down for 5 sec.)	Briefly interrupt the power supply to the ventilation unit. Briefly remove batteries. Consult technician, if necessary

FAULT ALARMS/ERROR CODES

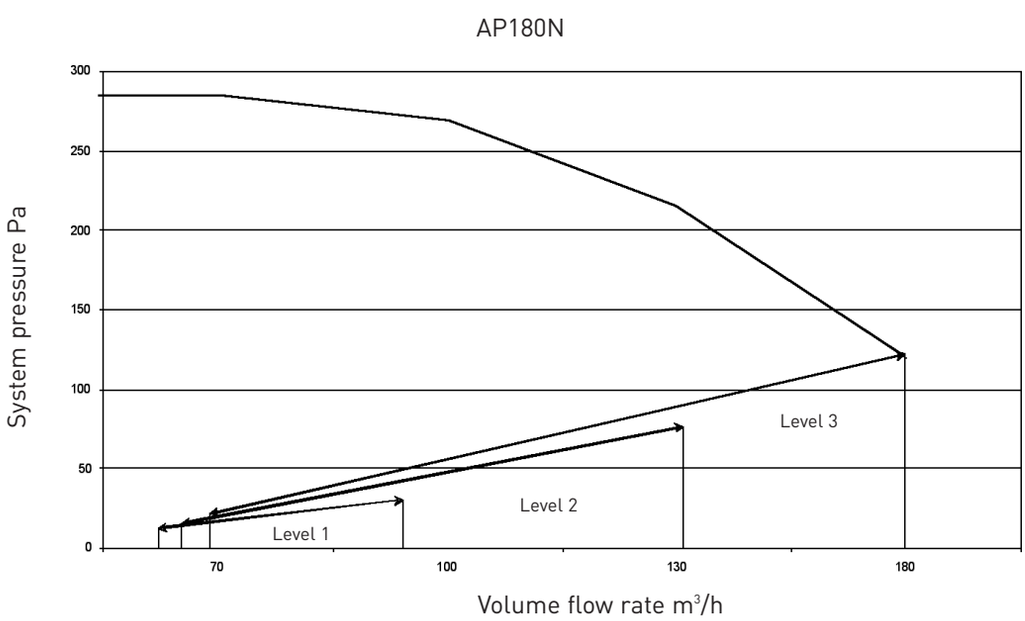
Display	Error	Cause	Remedy
00	No communication with the ventilation unit	An antenna cable is loose	Wait until display enters sleep mode; briefly interrupt power supply to ventilation unit and then press any button on the remote control within one minute
000	No communication with the ventilation unit	The remote control has not yet been assigned to the unit (PCB).	Check remote control cord
No display	Remote control defective		Check remote control cord

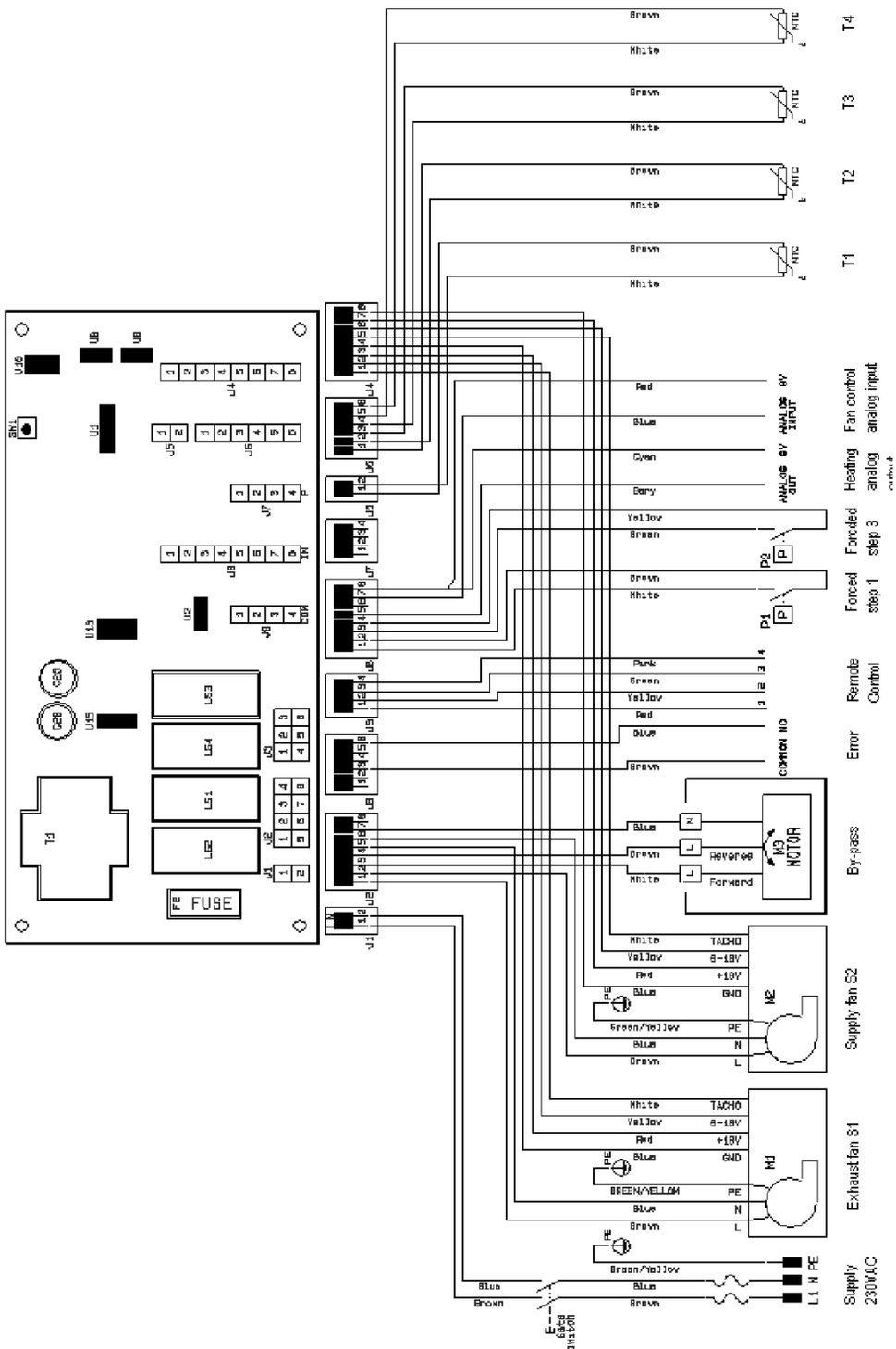
TECHNICAL DATA

Typ: AP180

Line voltage:	230 V AC, 50 Hz	Protection class:	IP44
Current:	21.5-130 W	Nominal air volume:	70-180 m³/h
Current consumption:	39 W at 100 m³/h; 100 Pa	Filtration:	G4
		Weight:	38.5 kg
DC ventilator fans:	2x, backward bent	Dimensions (W x H x D)	600 x 805 x 376 mm
Speed control:	3-level presetting option	Remote control:	included, with cord

Performance and specific ventilator fan capacity





Electrical connections

J1 230 V AC
1. L
2. N

J2 voltage output
1. Ventilator fan 1 – L
2. Ventilator fan 2 – L
3. Summer bypass
4. Winter bypass
5. Ventilator fan 1 – N
6. Ventilator fan 2 – N
7. Bypass – N
8. Not connected

J3 relay
1. Potential-free output A
2. Not connected
3. Error A
4. Potential-free output B
5. Not connected
6. Error B

J4 ventilator fan control
1. Tacho 1
2. PWM control voltage 1
3. 10 V (ventilator fan 1)
4. 0 V
5. Tacho 1
6. PWM control voltage 2
7. 10 V (ventilator fan 1)
8. 0 V

J5 Temperature sensor 1
1. NTC T1
2. NTC T1 outside air

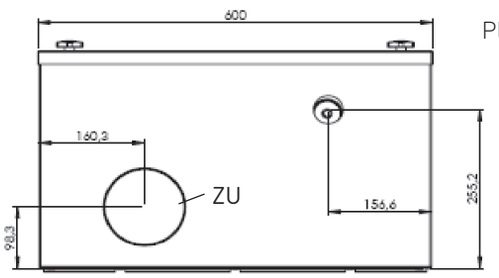
J6 Temperature sensor 2–4
3. NTC T2
4. NTC T2 fresh air supply
5. NTC T3
6. NTC T3 exhaust air
7. NTC T4
8. NTC T4 outlet air

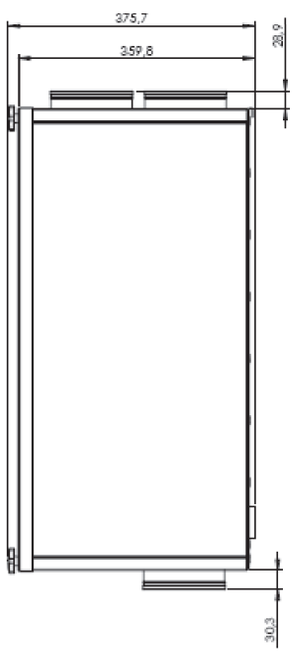
J7 Pressure
1. Not connected
2. Not connected
3. Not connected
4. Not connected

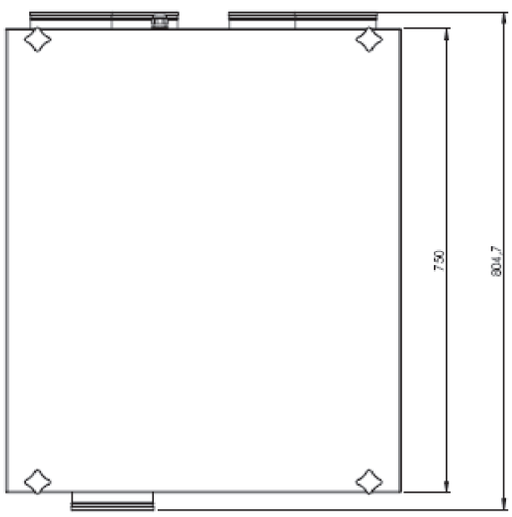
J8 Additional terminals
1. 12 Volt
2. Air quality
3. 12 Volt
4. Humidity
5. Heating element control voltage (0–10 Volt DC)
6. Not connected
7. External volume flow rate control (0–10 Volt DC signal)
8. 0 V

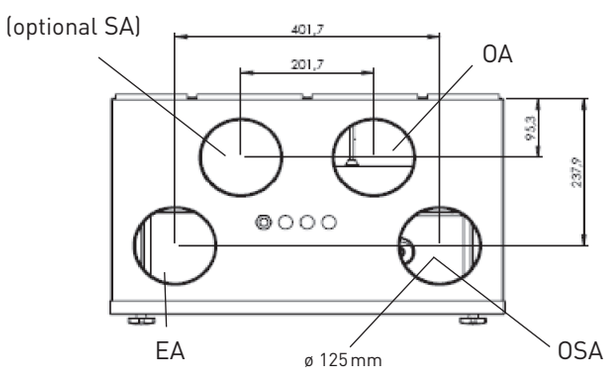
J9 Communication
1. 12 Volt
2. Transmit
3. Receive
4. 0 V

Pluggit Avent P180



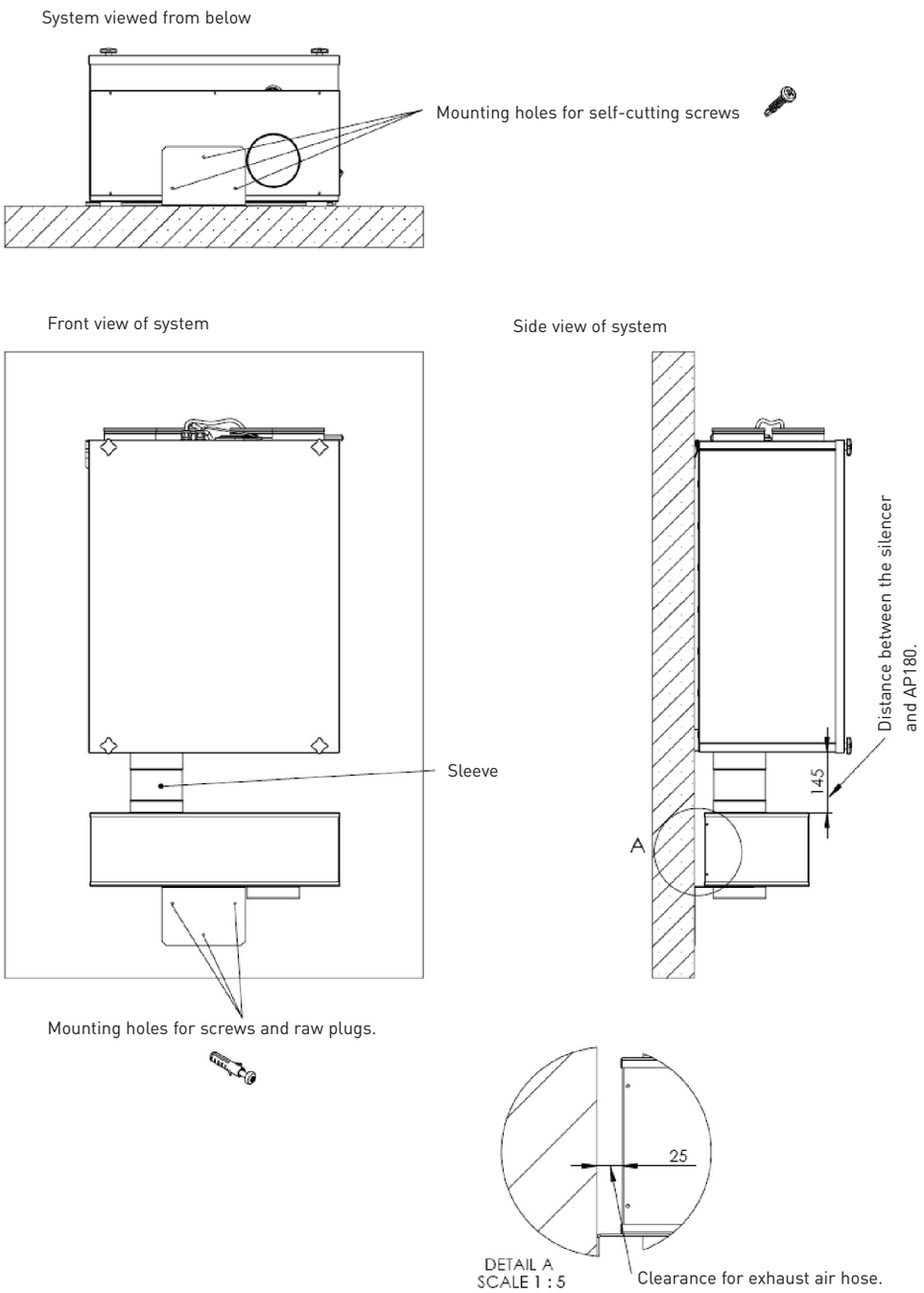






OSA = Outside air
SA = Supply air
EA = Exhaust air
OA = Outlet air

Dimensions for installing the silencer



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CE

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CE - Konformitätserklärung

Pluggit GmbH
Wamslerstr. 2
D - 81829 München

Tel: +49 89 357731-0
Fax: +49 89 357731-79

Konformitätserklärung für folgende Geräte zur kontrollierten Wohnraumlüftung mit Wärmerückgewinnung:

Avent P180 (AP180)
Avent P300 (AP300)
Avent P450 (AP450)

Oben beschriebene Produkte stimmen mit den folgenden Richtlinien überein:

98/37/EEC	Maschinenrichtlinie
73/23/EEC	Niederspannungsrichtlinie
89/336/EEC	EMV-Richtlinie.

Sie wurden in Übereinstimmung mit den folgenden harmonisierten Normen produziert:

EN 292	Sicherheit von Maschinen
EN 50 081-82	EMV (Störaussendung und –festigkeit)
EN 60 335-1	Sicherheit elektrischer Geräte

München, den 25.8.2005

Peter Feichtinger,
Geschäftsführung Pluggit GmbH

Dipl.-Ing. Peter Kröplin
Produktmanagement Pluggit GmbH

COMMISSIONING PROTOCOL
SYSTEM TEST/SETTING/INSTRUCTION

PLUGGIT
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Pluggit member of staff		**Name/address of specialist company**
Unit type		
Serial number		
Date		**Tel.:**
Construction project/client		**Tel.:**
Street/postcode/town		

The system has been fully installed and commissioned with particular attention paid to the following measures (tested).
Particular factors that need to be observed to ensure the system operates flawlessly have been noted.

Inspected/carried out	**Completed**	**Remarks**
Ventilation unit is noise decoupled (air and structure borne) and mounted in an accessible, frost-free location (› 7°C)		
Condensate drain installed properly and frost-proof with a wastewater hose DN40 and siphon		
Outside wall grille and **all** filters inspected and found to be clean; roof cover is securely mounted		
Ducting is securely mounted, OSA/OA ducts are insulated vapour-tight, SA/EA ducting thermally insulated, if necessary		
Fresh air distributor and exhaust air collection unit inspected		
Supply air outlets, exhaust air inlets (filters) inspected/checked and found to be clean		
Silencers for supply and exhaust air mounted		
Pluggmar properly installed. Nominal width pipe /channel		
Ventilation unit calibrated, outside air is above – 5 °C		
Ventilation unit set to Level 2 (Level 1 and Level 3 adjust automatically) (Level 1 = 30% lower than Level 2; Level 3 = 30% higher than Level 2)		Level 2: Volume flow rate: EA (S1): ____ SA (S2): ____ m^3/h Speed: EA (S1): ____ SA (S2): ____ rpm
All filters have been pointed out and how to clean and replace them has been explained. The filter symbol in the remote control has been pointed out.		Filter class, fresh air: _____ Filter class, exhaust air: _____
Ventilation openings have been pointed out and the joint operation of ventilation systems and non room-sealed heating appliances explained.		
The operating instructions have been handed over		
How the system functions and how to operate it has been explained.		
Accessories (geothermal heat exchanger, preheating device, others) have been explained		
Special advice:		

The system has been handed over in perfect working order and without any reservations. A relevant note has been made in this protocol of the incorrect or poor performance of any other installation included in the construction project. The client/end user has been informed that any changes to the ventilation system (except for the work that the user may carry out as described in the first part) may lead to damage, be a source of danger and risk the guarantee being declared null and void.

Signature Pluggit member of staff

Date/signature client/end user

Please keep this protocol safe for future reference. In case of a complaint during the guarantee period the protocol must be produced at the request of Pluggit GmbH or the authorised dealer as proof you are entitled to receive a replacement under the conditions of the guarantee.

FILTER MAINTENANCE RECORD

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Replacement filters are available from your specialist dealer: _____

_____

_____

_____

Available filters:
Outside air

- ☐ Ventilation unit
- ☐ Air-intake tower GTC
- ☐ Allergenic filter AF400
- ☐ Other: _____

Exhaust air:

- ☐ Exhaust air inlet
- ☐ Ventilation unit
- ☐ Other: _____

Please note: Cleaning the filters is part of the inspection process.
We recommend that the filters are replaced once a year!

Check	Replaced	Date	Check	Replaced	Date

NOTES

NOTES

BIA Avent P180_engl./V01 08.2008

The technology makes the difference.

2Q

By laying the concealing ventilation in the floor and through ideal placing of the air outlets, a perfectly aligned cross-ventilation is created. Displacement ventilation means that fresh air is transported into the room, without the risk of draughts, without any annoying noises, and without any pressure, and during the cold months, pre-heated.

allfloor

allfloor – in ceilings, walls, above or beneath concrete and screed – the system concept from Pluggit offers maximum flexibility when installing ventilation ducts and therefore is as ideal for use in new buildings as it is in building renovations.

EE

Energy efficiency – a high degree of heat recovery alone makes a ventilation system appear high-performing and energy-efficient only superficially. Instead, what is important for the assessment is the ratio of energy used to the degree of heat recovery achieved – called the electrical energy efficiency. As a result of the high density, a consumption-optimised device-design and the latest heat exchanger technology, our ventilation systems achieve excellent values in terms of heat recovery and energy efficiency.

CleanSafe

The principle of CleanSafe guarantees an almost impossible potential for dirt in our distribution system through technically smooth surfaces and, additionally, a problem-free cleaning concept, the convincing results of which have been confirmed by an independent testing institute.

Please download the current texts for invitation to tender in the format data norm, excel or text from our homepage **www.pluggit.com** or request them at **info@pluggit.com**!

Do you love fresh air? For more information about the company, the intelligent technology of the Pluggit 2Q-Fresh Air Systems, references and distribution partners, go to **www.pluggit.com** or for dialogue go to **www.lueftungsblog.de**

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