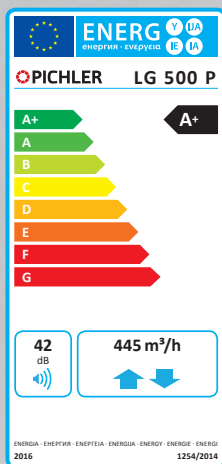


OPERATING AND INSTALLATION INSTRUCTIONS

LG 500 P



EU Regulation
1253/2014



The specified energy efficiency is applicable when controlled to local requirements and is valid up to the specified maximum air flow volume.



**COMFORT
VENTILATION**



 **PICHLER**

Systematic ventilation.

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1 Introduction

Dear customer, thank you for your decision to purchase the *compact ventilation unit LG 500 P*.

The *compact ventilation unit LG 500 P* is a state-of-the-art device. Its convincing features are its high degree of economy, operator friendliness and operational safety.

To operate your compact ventilation unit safely, properly, and economically, please carefully read and comply with these operating instructions.

Use the ventilation unit only in perfect condition, in compliance with the intended use, in a manner that is safety and danger conscious and in compliance with all information provided in these instructions.

If you have any queries or spare parts orders, please have the device type and serial number (see type plate on the device) at hand.

PICHLER		J. Pichler Gesellschaft m.b.H.	ÖSTERREICH 9021 KLAGENFURT Karlweg 5 T +43 (0) 463 32769 www.pichlerluft.at
Gerätetype:	08LG500PRV	Baujahr:	XXX
Seriennummer:	XXX	Gewicht:	75 kg
Auftragsnummer:	XXX		
Volumenstrom:	max. 550 m³/h		
Abmessung BxHxT:	915x855x655 mm		
Spannung/Frequenz:	230V / 50 Hz		
Leistungsaufnahme:	max. 2750 W		



Please contact us if you have any further queries or you have lost the documentation..



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2 General

This chapter contains general information on the *compact ventilation unit LG 500 P with control unit type „PI-HMI“*.



**READ THESE INSTRUCTIONS
CAREFULLY BEFORE INITIAL
STARTUP OF THE UNIT!**

This Manual contains notes and information on safe operation and proper installation of the *LG 500 P* compact ventilation unit and on its use and servicing. Refer to this Manual during servicing to ensure proper execution of the tasks. Keep this operating manual in a safe place and readily available at all times.

Fault rectification and intervention work may only be performed by a licensed, specialist installation company. We are continuously improving and developing our products. Your device may therefore differ slightly from the one referred to in

these instructions.

Subject to change without notice:

These instructions have been drawn up with the greatest care. However, no rights may be derived from them. We constantly make every effort to make technical improvements to and optimizations of our products and reserve the right to partially or wholly modify the units or technical specifications without prior notice.

For the *compact ventilation unit LG 500 P*, our „General Terms and Conditions“ in the applicable version apply.



3. Use in compliance with the intended use

INTENDED USE

The compact ventilation unit LG 500 P is used for the controlled mechanical supply and extract air ventilation of larger residential houses, as a centralized unit for up to 5 homes, schools, Doctor's practices, offices and similar applications. The range of use extends fundamentally to effective areas of 150 m² to approx. 400 m² that are designed as passive or low energy structures, with an adjustable air volume flow up to 550 m³/h.

The entire living area is provided with supply air and exhaust air ventilation by installing a mechanical, controlled ventilation system for apartments. Controlled air supply with purified and filtered outdoor air is provided in the Outdoor air areas. Odours and damp/used ambient outlet air are dissipated in the outlet air area.

The purpose of the controlled mechanical ventilation of living areas is to improve air quality and to reduce heating requirements through the use of a highly efficient heat recovery system as well as influencing indoor air humidity.

The application range and intended use of the device is limited to use in indoor air treatment systems for exhausting consumed air and supplying fresh, temperate outdoor air at a maximum conveying temperature of -15 °C to +35 °C. In addition, the conveyed air must be free of aggressive vapours and wear-inducing materials. Any other application shall be deemed to be diverting from the intended use. The manufacturer shall assume no further liability for any damages or consequential damages resulting from non-intended use.

Intended use also includes observing our prescribed operating and installation instructions. This unit, which is accessible for the general public, is intended for installation in residential or commercial buildings. The device is used for mechanical ventilation of indoor air and also for air reheating in conjunction with a heater battery.

This device is not intended to be used by people (including children) with limited physical, sensory, or mental capabilities or with a lack of suitable experience and/or knowledge, unless supervised by a person who is responsible for their safety or from whom they receive instructions on how to use the device.

The unit is not suitable for installation in the open air and must be installed in suitable and temperaturecontrolled indoor rooms. The ventilation unit is not suitable for drying out new-build properties. When the device is shut down, ensure that no air circulation can occur through the device.

The *compact ventilation unit LG 500 P* is not a ready-to-use product. It must not be put into operation until it has been properly installed and connected in the indoor air treatment system. Only qualified, assigned personnel may work on and with the device.



Any individual who transports, sets up or works on the device must have read and understood these operating instructions, particularly **Chapter 3 „Safety Instructions“**. In addition, the end user has to be informed of any dangers that might occur.



STIPULATIONS FOR OPERATION WITH FIREPLACES

Local requirements in terms of standards, laws and directives, must be taken into account.

The central air conditioners with heat recovery should not be installed in comparably sized rooms, apartments or facilities with room air dependent heating apparatus unless:

- safety systems are in place to prevent simultaneous operation of room air dependent heating apparatus and units extracting air, or
 - special safety systems will monitor waste gas extraction of a heating apparatus dependent on room air.
- For ambient air-dependent heating systems for liquid, gaseous and solid fuels, the heating or ventilation system must be switched off in the event the safety equipment triggers.

Central air conditioning equipment for controlled ventilation and extraction of air in an apartment or similar facility shall not be installed if the facility has

room air dependent heating apparatus connected to waste gas units with multiple infeeds.

For normal operation of central air conditioning systems, it must be possible to close any ducts for combustion air or waste gas systems from heating apparatus dependent on room air. Shut-off systems for waste gas from solid fuel heating apparatus must be manual. The position of the operating lever must indicate the status of the shut-off device. This is deemed complied with if a shut-off system is used to block soot (soot shut-off).

Fire protection requirements

The regional regulatory provisions, especially the fire protection regulations for air conditioning of buildings, as amended, must be taken into consideration when installing the air conditioning system in accordance with the instructions for fire protection.

STIPULATIONS IN CONNECTION WITH EXTRACTOR HOODS

On account of the heavy load and irregular operation the extract air of any kitchen extractor hood present must not be integrated into the apartment's ventilation system. The extract air from such extractor hoods should be removed separately out of the roof via an exhaust air line. The supply air is provided separately, e.g. via the window ventilation.

If an extractor hood is being operated without separate introduction of the supply air, the air volume balance in the apartment is no longer balanced and the proper functioning of the apartment's ventilation system is not ensured (odour entrainment etc.). One possibility is to operate the extractor hood with adequate air filtering in recirculated air mode.

LIABILITY

The *compact ventilation unit LG 500 P* has been developed and manufactured for use in the controlled mechanical ventilation of living areas and rooms with a similar purpose, such as seminar rooms and small offices.

For proper operation of the central air conditioning systems, it must be possible to close any ducts for combustion air and flue gas systems of fireplaces drawing in room air.

Any other use is considered to be an improper use and can lead to personal injury or damage to the compact ventilation unit LG 500 P, for which the manufacturer cannot be held liable.

In the event of the following the manufacturer is liable for no damage whatsoever:

- non-compliance with the safety, operating and servicing instructions listed in these operating and installation instructions
- the installation of replacement parts that are not supplied by the manufacturer, whereby the responsibility for the use of such replacement parts lies completely with the system installer/fitter.
- normal wear



WARRANTY

The warranty begins with initial startup, at the latest, however, one month after delivery has taken place. The warranty covers the pure replacement of materials only and does not include any claims for the compensation of services. It applies only if there is proof of appropriately performed servicing in accordance with our regulations and by a licensed company that specializes in installation work.

The warranty claim extends for a maximum period of 24 months after installation of the **compact ventilation unit LG 500 P**, however, up to a maximum of 30 months after the date of manufacture.

Warranty claims can be asserted only for material and/or design defects that have occurred during the warranty term. In the case of a warranty claim, the **compact ventilation unit LG 500 P** may not be removed without prior written approval

of the manufacturer. The manufacturer accords a warranty on spare parts only if they have been installed by an installer who is recognized by the manufacturer.

The warranty shall expire automatically at the end of the warranty period, or in the case of improper operation, such as operating without filters, installation of parts not supplied by the manufacturer, or where non-approved changes or modifications have been made to the system.

Failure to comply with these Operating and Installation Instructions will automatically void all warranties.

4 Safety

Read this operating and installation guide carefully and heed the safety information for installation, start-up, servicing and general work on the unit.

Keep this operating manual in a safe place and readily available at all times.

The safety instructions, warnings, comments and directions described in these operating instructions must always be observed.

The specifications stated in this document may not be modified.

Non-observance of these safety instructions, warnings, comments and directions can result in physical injury or damage to the compact ventilation unit.

We recommend purchasing a maintenance contract to ensure that the device is inspected and maintained at regular intervals. Your supplier can provide you with the addresses of approved specialists/installers in your area.

SYMBOLS USED

The following safety symbols indicate text passages that warn against dangers and sources of danger. Please familiarise yourself with these symbols!



Caution/Important information!



Caution! The non-observance of this warning can lead to injury or danger to life and limb and/or damage to the unit.



Caution - dangerous electrical voltage! The non-observance of this warning can lead to injury or danger to life and limb.



SAFETY REGULATIONS



Installation, commissioning, maintenance, and repair must be performed by an authorised specialist (heating specialist firm/installation specialist firm).

The local national regulations and standards apply without restriction beyond these operating installation instructions in respect of operation of the device.

Ensure that your system installer/fitter shows you how to operate the device and the control unit after installation. Use of the ventilation unit may only take place in accordance with the use set out in **point 2.1 'Use in compliance with the intended use'**.

All safety and danger notices attached to the device and described in these instructions must be observed. In the event of any malfunctions, shut down the unit immediately and secure it suitably

against being switched back on. Faults on the unit must be rectified immediately. Make sure that children do not play with the unit.

After servicing and maintenance work, the operating safety of the device should be re-established by expert personnel.

The attachment or installation of additional parts and components is not permitted. Any modifications or changes to the **compact ventilation unit LG 500 P** are prohibited. Only original replacement parts may be used.

Modifications and adaptations to the ventilation unit are not permitted and release the manufacturer from any warranty and liability.

SETTING UP THE UNIT



The national and local regulations must be observed for installation and setup. The unit must be installed only in compliance with the national installation regulations.

Installation shall be performed in accordance with the general, locally valid construction, safety and installation regulations of the appropriate local authority or of the water and electricity company and other institutions.

The unit may be installed only in frost-free and dry rooms. The room temperature in the set-up room must have a continuous temperature between a minimum of +5 °C and a maximum of +40 °C.

The device is intended for free-standing installation or wall mounting and may only be set up when there is suitable load-bearing floor or wall construction. No vibrations must be allowed to affect the unit. A suitable water drain with effective drain trap (siphon) must be provided for discharging condensate water accumulated during operation of the device.

Installation work for the water, heating and Condensation connectors may only be performed by a professional.

Proper installation is essential for ensuring the water-tightness and effectiveness of the condensate discharge line and in order to prevent damage to the building. The condensate drainage has to be checked for operability by means of an on-site inspection prior to initial start-up and after any servicing work. During manual transport take care that only reasonable human lifting and carrying forces are used.

System components of the ventilation system, such as air lines, that are installed in potentially unheated areas must be suitably insulated to prevent heat loss or Build-up of condensation (where temperatures fall below the dew point). Outdoor and exhaust air must always be insulated

The locally-applicable construction and fire prevention provisions, regulations and standards must be adhered to. Appropriate suitable measures for erection of the unit, e.g. the installation of fire dampers in air pipes etc., may have to be taken.

Take into consideration the ambient influences and do not install the ventilation unit in the vicinity of combustible liquids or gases, in swimming pools or in areas subject to the influence of chemicals.



ELECTRICAL CONNECTION WORK



- Warning: dangerous electrical voltages!
- Failure to observe this risk can lead to death, injury or damage to property.
- Before carrying out any work on live parts, the unit must always be disconnected completely from the power supply (all poles) and secured against being switched back on.

Work carried out on electrical connections and electrical components of the unit and its accessories may be carried out only by authorised electricians in compliance with the applicable law, requirements, standards and directives.



Before opening the unit and when carrying out work on the unit e.g. maintenance work and repairs, the unit must be isolated from the mains (all poles disconnected) and secured against being switched back on for the duration of the work.

The **LG 500 P** compact ventilation unit is designed for a 230 V/50 Hz power supply. The unit is not designed for connection to a 400 V/50 Hz, three-phase supply.



Potentially unsafe operations are prohibited. To ensure safe operation, never remove or bypass safety devices.

The electrical systems of the unit, including their warning and protective functions, shall be regularly checked for perfect operation. The unit must be shut down immediately in the event of malfunctions or defects such as loose connections or overheated cables.

Only original fuses with the prescribed rated current and dimensions may be used.

Damaged or faulty power supply cables to the unit must be repaired immediately, to avert potential danger. The unit may not be operated unless safe operational conditions have been restored.

Fault finding and immediate remediation of electrical defects and malfunctions shall be carried out by authorised electricians only. All protective systems must be checked (e.g. earth resistance etc.) after completion of electrical work on the unit. **Details siehe Kapitel 14 „Elektrischer Anschluss“.**

OPERATION OF THE SYSTEM



Operation of the ventilation unit is only permitted if all required connections in conjunction with the provided installed components, such as sound absorbers etc., have been properly established.



Upon the occurrence of any defects or damage that are able to injure people or damage property, the system has to be put out of operation immediately. Further operation must be effectively prevented until the device is completely repaired!

Where fault messages or damage occur, the device must be immediately switched off and disconnected from the mains. When opening the front covers or removing cover plates, act in a safety-conscious manner and be aware of the risks. Every working method that impairs safety is prohibited.

Operation of the device is only permitted with a connected air line or installed system components, such as sound absorbers, with a minimum line length

of 1000 mm to ensure that the fans or electrical components, for example, cannot be touched by hand.

The ventilation unit must be operated only in compliance with the project documents. These must comply with the equipment and product safety act and with the relevant applicable stipulations of the EC directives and standards.

Never operate the ventilation unit without installed air filters. The air filters must be checked or replaced regularly for contamination and damage and cleaned or replaced if necessary. Air filters must be replaced at least every six months or when a corresponding message is displayed on the control unit. Use only genuine spare filters.

If the unit has not been in service for a longer time, for hygienic reasons the air filters have to be replaced before putting it back into operation.



In case of simultaneous use of the ventilation unit with fireplaces consuming indoor air, the applicable safety instructions and standards must be observed.

In the case of indoor air dependent fireplaces the combustion air supply has to be provided separately. See the provisions on this topic under the section *"Provisions for operation with fireplaces"*.

Owing to their heavy loading and irregular operation, extractor hoods must not be integrated into the extract air or exhaust air circuit of the ventilation unit. Advice on this is provided under *point „Provisions for use with extractor hoods „. Exhaust air extractor hoods must be operated via separate air lines, with provision for a suitable fresh air supply, e.g. by opening windows, or via suitable air filters in recirculated air mode.*

USER GUIDE

5. Customer service



Please contact the installer of your ventilation and air conditioning system or contact us directly for any questions relating to the **LG 500** compact ventilation unit supplied.



J. Pichler Gesellschaft m.b.H.

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6. Ventilation unit design



The **compact ventilation unit LG 500 P** is used for the controlled mechanical supply and extract air ventilation of larger residential houses, as a centralized unit for up to 5 homes, schools, Doctor's practices, offices and similar applications.

The range of use extends fundamentally to effective areas of 150 m² to approx. 400 m² that are designed as passive or low energy structures, with an adjustable air volume flow up to 550 m³/h.

The **LG 500 P compact ventilation unit** comprises a compact, thermally insulated enclosure of galvanised sheet steel, RAL 9010 powder coated on the outside. It is designed as a self-standing or wall-mounted unit for frost-free rooms.

The ventilation unit includes a highly efficient heat recovery system with an air-to-air counterflow heat exchanger

made of recyclable plastic, with 90 % efficiency, automatic 100 % bypass and energy-saving radial fans driven by EC motors.

Also included are filtration class F7 and G4 air filters for the external and extract air respectively, both easy to service via the inspection covers on the front of the apparatus.

An external 3.5" colour touch screen serves to program the integrated, wired controller.

The **LG 500 P compact ventilation unit** is optionally available with constant pressure or Pichler System Optimiser control. Optional CO₂ or VOC sensors may be used to implement ventilation controlled for optimum comfort.



ADVANTAGES AND FEATURES

- Ventilation unit with highly efficient energy recovery
- Supply air and extract air fans with energy-saving EC motors
- Volume flow control for constant air volume flow, adjustable up to 550 m³/h
- Optional with constant pressure control
- Needs-based air volume control via CO₂ sensor
- Easy-to-use control unit
- Integrated 100 % bypass for bypassing the heat exchanger in summer mode
- Selectable, automatically operating frost protection switch for the heat exchanger, optionally available with a PTC low temperature preheater battery
- Filter monitoring integrated, upon attainment of the time interval message 'Filter change' appears on the display.
- Simple filter change without tools
- Optional reheater battery for additional raising of the room temperature

7. Control unit

The settings made on the ventilation unit are performed via an operator control unit. Control and operation of the ventilation unit is performed via the „PI-HMI“ control unit in-wall or on-wall mounting.

The touchscreen makes performing settings simple. All important operating data are displayed.



The control unit is normally installed in the living area and should be suitably positioned.

Thermal source areas, radiators, direct sunlight etc. have to be avoided on account of their temperature influence!

PI-HMI is a touchscreen panel with user-friendly graphical user interface specially developed for controlling ventilation systems. The panel communicates with the PI Air2 system via a Modbus interface, ensuring easy installation.

Product: PI-HMI

Type: 3,5" touchscreen panel



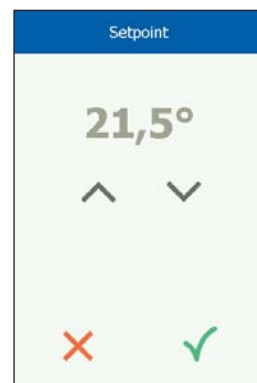
The control unit is normally fitted in the living area.

The following changes to the ventilation unit can be set from the PI-HMI control unit. When the screensaver is enabled, tap the touch display to open the start view.



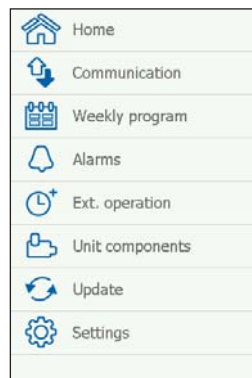
HOME SCREEN

- Basic functions (such as fan speed, temperature and configuration) can be accessed from the start view.
- Time and weekday are shown on the left in the topmost row on the display.
- The main menu (in top right) can be accessed from the icon in the top right.
- The alarm bell in the top left denotes an active alarm.
- The house icon on the left in the middle row enables an overview screen for the ventilation unit to be accessed. Temperatures, air quantities and filter pressures can be checked.
- The desired temperature value is shown in the middle row on the right. Click this value to change it.
- The icons in the lower part of the start view are for quick access to the individual components. They can be changed in the main menu under Settings – Start view, and so can be different from the figure.



MAIN MENU

- *Home screen: Press this icon to return to the home screen.*



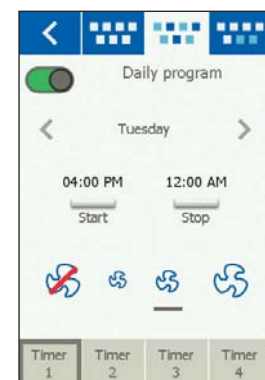
- *Communication: Here you can configure LAN settings.*

Communication	
Static/Dynamic IP	Static IP
IP Address	10.10.10.104
Netmask	255.255.255.0
Gateway	10.10.10.1
Primary DNS	10.10.10.18
Secondary DNS	10.10.10.19
Mac address	00:23:38:00:30:13

- *Weekly programm: Here you can enter times and modes for the built-in 7-day clock.*

Then you can choose among **three different modes**:

- **„Whole week“** – A ventilation setting for the whole week
- **„Daily program“** – For each day different ventilation settings can be parameterized
- **„Weekday / weekend“** – Ventilation settings on weekdays and weekends are set



By pressing the button, the mode is turned on  or off .

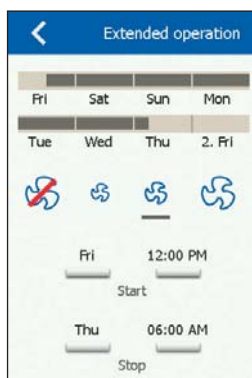
- 1 Switching between the different modes
- 2 Mode
- 3 Weekday
- 4 Time to start and stop the system
- 5 Fan speed
- 6 Timer: A fan speed can be selected for a certain period (e.g. in the morning). Up to four timers can be programmed.

- **Alarms:** Here you can view active alarms and an alarm log. In case of an alarm, this screen can also be accessed via the bell icon on the home screen.



No.	Current alarms
1	Fire alarm
2	External fire thermostat alarm
4	External stop activated
11	FanIO 1: No communication
12	FanIO 2: No communication

- **Extended operation:** If a different pattern of operation is required for a short period of time, the weekly program can be overridden. The override period can last up to a week at most. Once the period has elapsed, the system returns to standard clock-controlled operation.



Extended operation

Calendar view showing days: Fri, Sat, Sun, Mon, Tue, Wed, Thu, 2. Fri

Start: Fri 12:00 PM

Stop: Thu 06:00 AM

- **Components:** Settings of the main components

- o Air-conditioning:

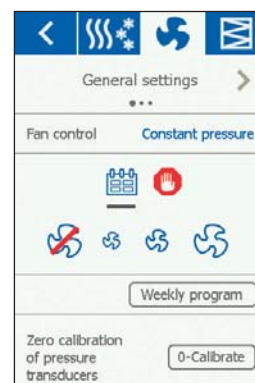
- General settings:
 - Temperature control type
 - Desired temperature value
 - Minimum Supply air temperature
 - Maximum Supply air temperature
- Heat exchanger settings
- Heating register settings
- Cooling register settings

- o Ventilation settings: (can also be accessed from the start screen)

- General settings:

The following can be selected:

 - Off: The fans are stopped and the system is not running.
 - Low: Low ventilation level is active.
 - Medium: Medium ventilation level is active.
 - High: High ventilation level is active.
 - Service stop: The system can only be restarted locally from the control unit.
 - Week program
 - Calendar program:
 - Configuration via web server
- Supply air fan settings
- Exhaust air fan settings



General settings

Fan control: Constant pressure

Weekly program

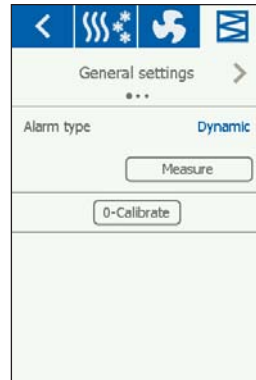
Zero calibration of pressure transducers

0-Calibrate

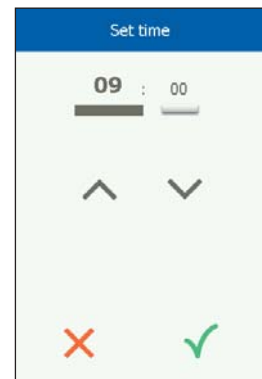


o *Filter settings:*

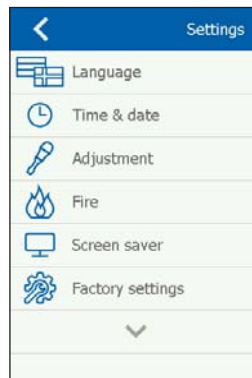
- General settings
- Outdoor air filter: Reset filter time
- Outlet air filter: Reset filter time



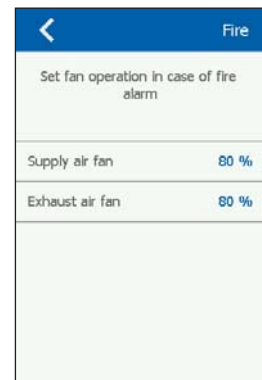
o *Time & Date:* Here you can set the time and date for the system.



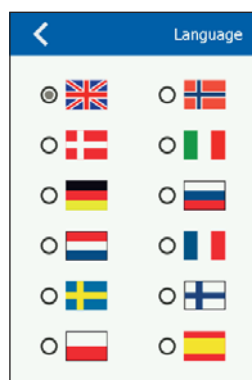
• *Settings:*



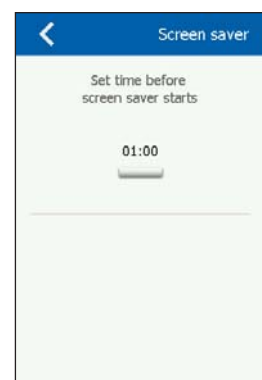
o *Fire:* When the fire alarm is active, this speed is set for the fans (default = 0%).



o *Language:* The PI-Air2 software supports the following languages



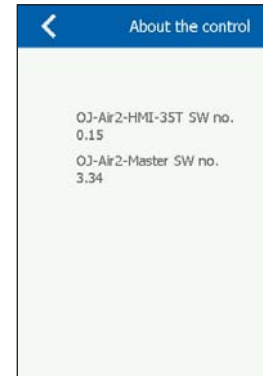
o *Screen saver:* Here you can set the screen saver timeout period.



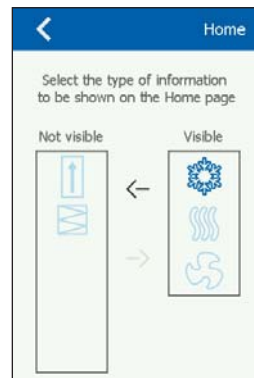
o *Factory settings:* (PIN-required) Here you can restore factory settings.



o *Software version:* Here you can view information on software versions..



o *Quick access:* (PIN-Code erforderlich) Konfiguration der Symbole im unteren Teil der Startansicht.



8 Messages / Faults

ALARM DISPLAY

The bell icon in the top corner of the start view flashes. The operator control unit „PI-HMI“ will display active alarms and an alarm log in the **ALARM** submenu. In case of an alarm, this screen can also be accessed via the bell icon on the home screen.

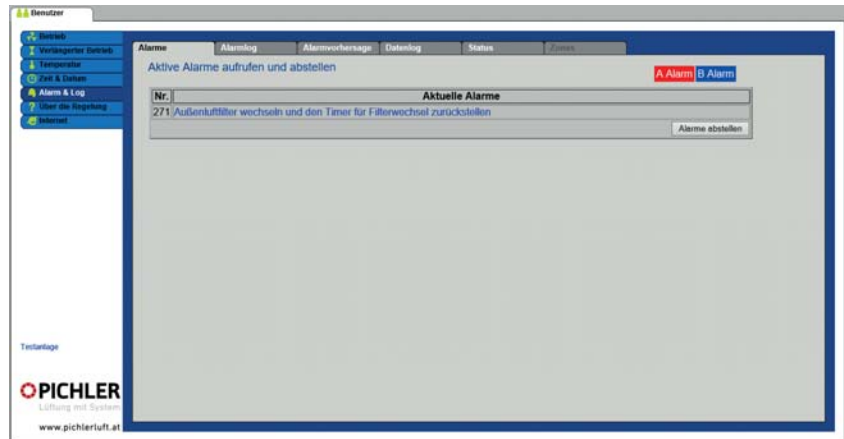
Pressing the “Reset” button acknowledges all active alarms.



WEB-SERVERS

When the integrated web server is used:

- Click Alarm in the User menu. The following window opens:



Clicking the "Turn off alarms" button resets all active alarms

9. Filter maintenance

MAINTENANCE INSTRUCTIONS (AIR FILTER)



These instructions relate exclusively to regular inspection, maintenance and replacement of air filters by the user.

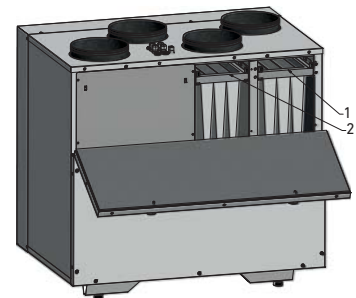
Only original replacement filters of the specified quality class must be used in observance of the filter quality class specified.



Check the condition of the air filters regularly



Very dirty filters must be replaced immediately, otherwise depending on the level of outdoor air pollution (every six months as a minimum).



Left-hand version: 1 Exhaust air filter, coarse dust filter class G4. 2 supply air filter, fine dust filter class F7, optionally F9 as a pollen filter.

FILTER MESSAGE ON THE „PI-HMI“

When the filter service time has elapsed (factory setting: 4,400 hours), the control unit signals the need for a filter change through the LED provided for this purpose, which lights yellow continuously.



FILTER MESSAGE ON THE WEB SERVER

The web server provides regular reminders of filter maintenance (the life of a filter is 4,400 hours).



FILTER CHANGING



When replacing the air filters, avoid soiling the unit and its components. Dirty air filters must be immediately and suitably disposed of.

It is advisable to package the air filters in an airtight container immediately after removal to avoid contamination of the ventilation system and the unit.



Before carrying out any work on live parts, the unit must always be disconnected completely from the power supply (all poles) and secured against being switched back on!

1. Filter message on control unit
2. Undo the wing nuts on the housing cover.
3. Open the front doors.
4. Before pulling the air filters from the unit, undo the filter slide rails, the filter tenter frames should be loosened by pulling forwards. Only then can the air filters be gently lifted out and replaced.
5. Extract the filters.

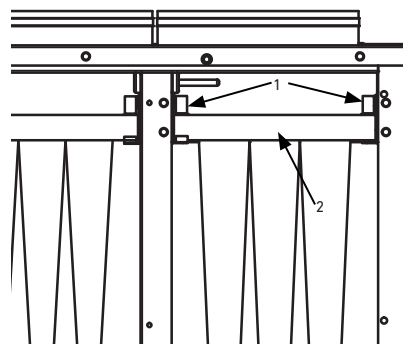


Never operate the ventilation unit without using air filters for the supply and exhaust air
! If ventilation units are shut down for long periods, air filters should be replaced before starting up again for hygienic reasons!

6. Insert the new filter. Please note: Only original replacement filters of the specified quality class may be used.



To prevent the level of filter leakage from becoming too high, ensure there is a secure seal and sufficient clamping between the air filter and the filter slide rails when inserting the new filter.



1 Filter stentering rails
2 Air filter

7. When inserting the new filter, ensure that it is installed correctly, and close the filter stentering rails.
8. Close the housing cover and secure it with the wing nuts. When replacing the cover, ensure that it is completely closed and that there is sufficient seal-tightness between the front cover and the unit housing.

Where can I order filters?

Use only original replacement filters of the filter quality class specified.

Designation	Item number	Dimensions mm
Supply air filter quality category F7 - pocket filter L = 350 mm	40LG050090	500 x 200 x 350
Optional supply air filter quality category F9 - pocket filter L = 350 mm	40LG050110	500 x 200 x 350
Extract air filter quality category G4 - pocket filter L = 250 mm	40LG050100	500 x 190 x 250
Optional extract air filter quality category F5 - pocket filter L = 250 mm	40LG050120	500 x 190 x 250

CLEARING FILTER MESSAGES

The filter times can be reset with the "Reload" button in the main menu from Unit components → "Air filter" tab.



MOUNTING / INSTALLATION

10 Scope of Supply, Transport & Packing, Storage & Disposal

SCOPE OF SUPPLY

The scope of supply comprises the following:

- the ventilation unit with „PI-HMI“ control unit.
- the operating and installation manual
- the wall-mounting strap

On delivery of the unit, check that the type and serial number on the name-plate correspond with the information on the order and delivery documents, that

the equipment (including optional accessories) is complete, and that all parts have been delivered in perfect condition.



Note: Any transport damage and/or missing parts must be reported immediately in writing to the forwarder or supplier.

TRANSPORT AND PACKAGING

The ventilation unit LG 500 P is delivered in transport packing. The safety markings on the packaging must be observed.

- Dimensions of the unit
(W x H x D): 915 x 855 x 655 mm
- Weight: approx. 75 kg without optional accessories

To prevent transportation damage, handle the compact LG 500 P ventilation device with care and secure it appropriately.

Ensure that the device is not damaged by tipping or knocking over. The unit must not be transported by the electrical connecting cable. Avoid knocks and blows when transporting.

The valid safety and accident regulations have to be complied with during transport. During manual transport take care that only reasonable human lifting and carrying forces are used.

STORAGE

The device must be stored in the packaging in a suitable, dry, dust-free room and protected against frost. Excessive storage periods, longer than a year, are to be avoided.

WASTE DISPOSAL

Ensure the packaging material is disposed of in an environmentally-friendly manner. The packing materials have to be disposed of in accordance with the local stipulations, for example, wooden pallets and cardboard packing have to be recycled.



Units that are no longer in working order have to be dismantled and properly disposed of by a specialized company via suitable collection centres and in compliance with the waste electrical and electronic equipment ordinance (WEEE), which provides for ratification of community law, directive 2002/95/EC (RoHS) and the directive 2002/96/EC (the WEEE directive).



11 Technical specifications

UNIT SPECIFICATIONS

Ventilation unit

Dimensions:

(W x H x D) 915 x 855 x 655 mm

Housing of single-shell construction made of galvanized sheet steel, coated RAL 9010 - white, 25 mm/30 mm of heat insulation

Air line connection:

4 x \varnothing 200 mm

Condensate connection:

\varnothing 15 mm unten

Electrical connection:

230 V/50 Hz/16 A

Protection class:

IP 20

Permitted ambient temperature for the unit:

+5 °C bis +40 °C

Permissible air temperatures

-15 °C bis +35 °C

Weight without accessories:

approx. 75 kg

Operator control unit „PI-HMI“

Dimensions (W x H x D)

80 x 121 x 42 mm

A max. 50 m length 6-pole MPFK6S flat cable or similar is used for split level installation.

Air filters

Outdoor air/supply air filter

Pocket filters quality category F7, optional quality category F9

Extract air filter

Pocket filters quality category G4

Fans (factory setting)

Fan speed	Speed I	Speed II	Speed III
Air volume flow [m³/h]	200	300	400
Output in [W] with external 50/100 Pa	50/65	80/100	130/155

Air volume flow setting range 150 to 550 m³/h, settable in increments of 5 m³/h.

Flow efficiency in accordance with PHI 0.33 W/m³/h. Power consumption in standby mode 7,1 W.

Heat exchanger

Counterflow heat exchanger made of plastic.

Degree of heat provision in accordance with PHI 82 %.

Comfort criterion in accordance with PHI T SAir= +16.5 °C where T FAir= -10 °C

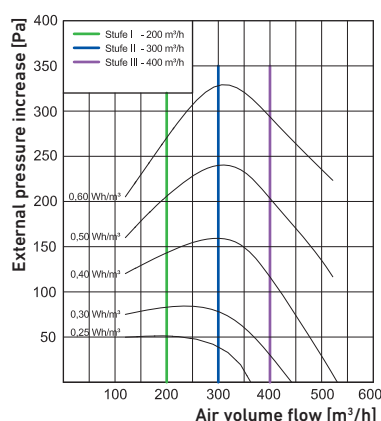
Housing seal-tightness

(according to PHI where nominal air volume flow is 366 m³/h)

external seal-tightness at 100 Pa < 0,6 %

external seal-tightness at 100 Pa < 0,5 %

CHARACTERISTIC EXTERNAL PRESSURE INCREASE - AIR VOLUME FLOW WITH VOLUME FLOW CONSTANT FUNCTION



The characteristic curves shown are valid for unit variants with constant volume flow control, supply air filter quality category F7, extract air filter quality category G4 and the design with PTC pre-heater battery in bypass mode.

The SFP values shown take into account power consumption for both fans for supply air and extract air as well as the power consumption of the control unit.



ACOUSTIC SPECIFICATIONS

Speed I = 200 m³/hSpeed II = 300 m³/hSpeed III = 400 m³/h

splitter on the exhaust air side

Remark: Tolerances ± 2 dB for acoustic data

with external pressure increase of 100 Pa and integrated sound absorption

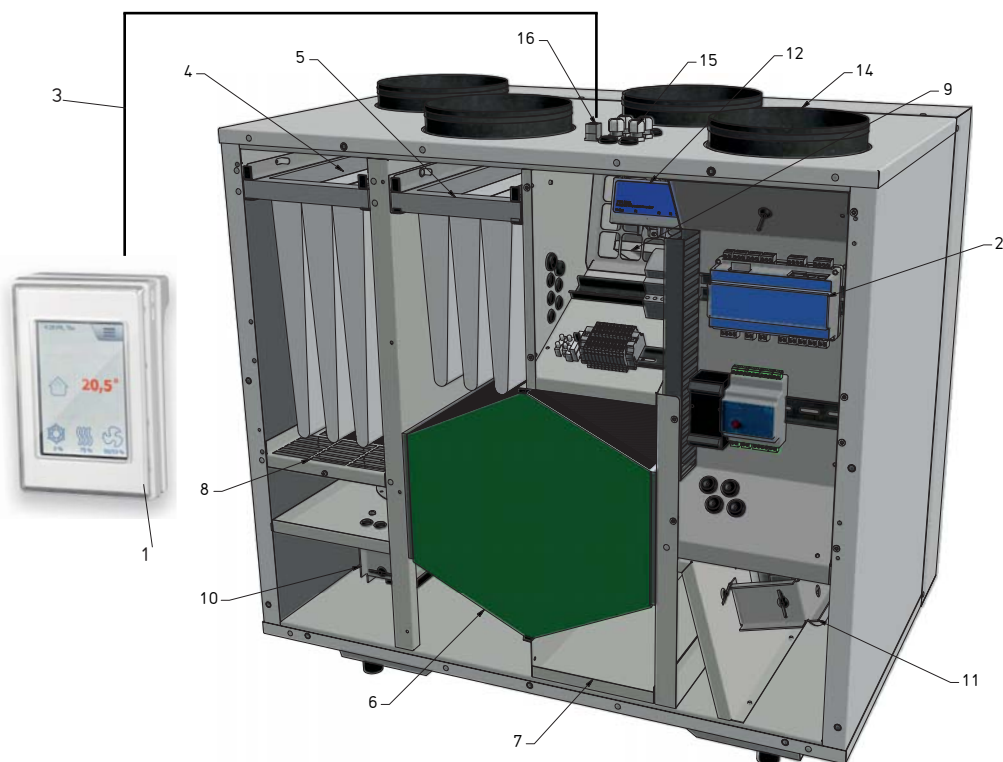
Measuring point	Housing emission			Outdoor air			Supply air			Exhaust air			Extract air		
Fan speed	I	II	III	I	II	III	I	II	III	I	II	III	I	II	III
63 Hz	45	47	49	65	67	69	59	65	72	66	68	70	62	64	66
125 Hz	44	44	44	60	60	60	55	58	61	63	63	65	56	57	57
250 Hz	44	47	49	60	61	62	49	52	55	66	68	69	57	58	59
500 Hz	35	37	40	45	50	55	37	43	48	48	55	62	44	49	54
1000 Hz	31	32	33	31	35	39	25	31	37	37	42	47	30	35	39
2000 Hz	26	29	31	27	32	37	18	25	31	40	45	51	27	32	36
4000 Hz	24	28	31	21	26	32	14	20	26	37	42	47	16	21	26
8000 Hz	19	21	22	13	17	21	11	13	16	25	31	38	11	13	14
Total L_{WA} in dB(A)	39	41	44	53	55	57	44	48	53	53	53	58	61	51	55

GENERAL

USER

SPECIALIST PERSONNEL

GERÄTEAUFBAU



1. Operator control unit type „PI-HMI“
2. Control unit (mounted in non-visible front cover)
3. Connecting lead MPFK6S
4. Outdoor air filter of quality class F7
5. Extract air filter of quality class G4
6. Counterflow heat exchanger (optional enthalpy heat exchanger)
7. Condensate tank with discharge fitting
8. Frost protection heating with a PTC low temperature preheater battery

9. Bypass valve with actuator (behind pressure sensor)
10. Outdoor air and supply air fan
11. Exhaust air and extract air fan
12. Pressure sensor for volume flow constant function
13. Exhaust-air-side sound absorber insert
14. Air duct connectors
15. Cable inlets
16. RJ12 connector for control unit



1. Operator control unit type „PI-HMI“

Settings for the ventilation unit are configured from the “PI-HMI” control unit.

The current operational statuses and system values, e.g. operating mode, fan speed, temperatures, etc., are shown on the colour touch display. Automatic or manual mode can be selected.

In automatic mode the system operates fully automatically in accordance with programmable time programs, while in manual mode the fan speed, for example, can be increased individually (air blast ventilation). The “PI-HMI” control unit can also be used to make individual operating parameter settings during servicing work.

2. Control unit

The individual operating parameters are set by the skilled installer or service technician, matched to the relevant application on site, via the PI-Air2-control system installed in the ventilation unit.

The settings can be made either via the “PI-HMI” control unit or via the PC interface and communication software.

3. Connecting lead MPFK6S

A cable MPFK6S or similar 6-core flat cable is required for communication between the operator control unit and the power unit. The connecting cable is not included in the scope of supply. The cable length must not be longer than 50 m.

4. Outdoor air filter of quality class F7 (optional pollen filter of quality class F9)

The outdoor air filter removes dust and contamination from the outdoor air.

5. Extract air filter of quality class G4 (optional F5))

Coarse contamination is filtered out of the extract air via the extract air filter.

6. Counterflow heat exchanger

The highly-efficient heat exchanger removes the energy content from the extract air and transfers this into the supply air. Optional enthalpy heat exchanger available.

7. Condensate tank with discharge fitting

Any condensate incurred in the heat exchanger during operation is collected via the condensate trough. The condensate incurred is discharged via the connected condensate drainage system, which is routed via an effective odour trap.

8. Frost protection heating with a PTC low temperature preheater battery (optional)

In very cold outdoor air temperatures, protects against freezing of condensate in the heat exchanger. The outdoor air is pre-heated, depending on the outdoor air temperature, via the optional electrical PTC lowtemperature pre-heater battery.



If an optional water register is used for heat exchanger anti-freeze protection, it must be protected appropriately from freezing in sub-zero temperatures.

9. Bypass valve with actuator

The 100% bypass is controlled as a function of the preset room temperature, the measured extract air temperature and the outdoor air temperature.

As a result the heat exchanger can be circumvented in the summer and the cool outdoor air blown out at night either directly or via the earth collector into the living space.

10. Outdoor air and supply air fan

Ensures the air volume flow for the supply air; provides the living spaces with conditioned outdoor air.

11. Exhaust air and extract air fan

Ensures the air volume flow for the extract air; conveys the consumed air externally out of the apartment.

12. Pressure transducer for volume flow measurement

Sensors for readings and pressure for the volume flows of the fans.

13. Front cover with screw plug

The front cover can be easily opened for maintenance work to the device, e.g. filter exchange.

When closing it, make sure of complete fastening and sufficient seal tightness between the front cover and the unit's housing.

14. Air duct connectors

Is for the purpose of connection to the air line system. When installing, ensure correct connection to the supply, extract, outdoor air and exhaust air lines.

15. Cable inlets

Fundamentally the ventilation unit is supplied electrically ready wired. The cable inlets are used for making the electrical connection and to connect the optional system accessories (such as temperature sensor).

16. RJ12 connector for operator unit

The Modbus cable (provided) can be used here to connect the control unit up to the ventilation unit controller.



VERSIONS

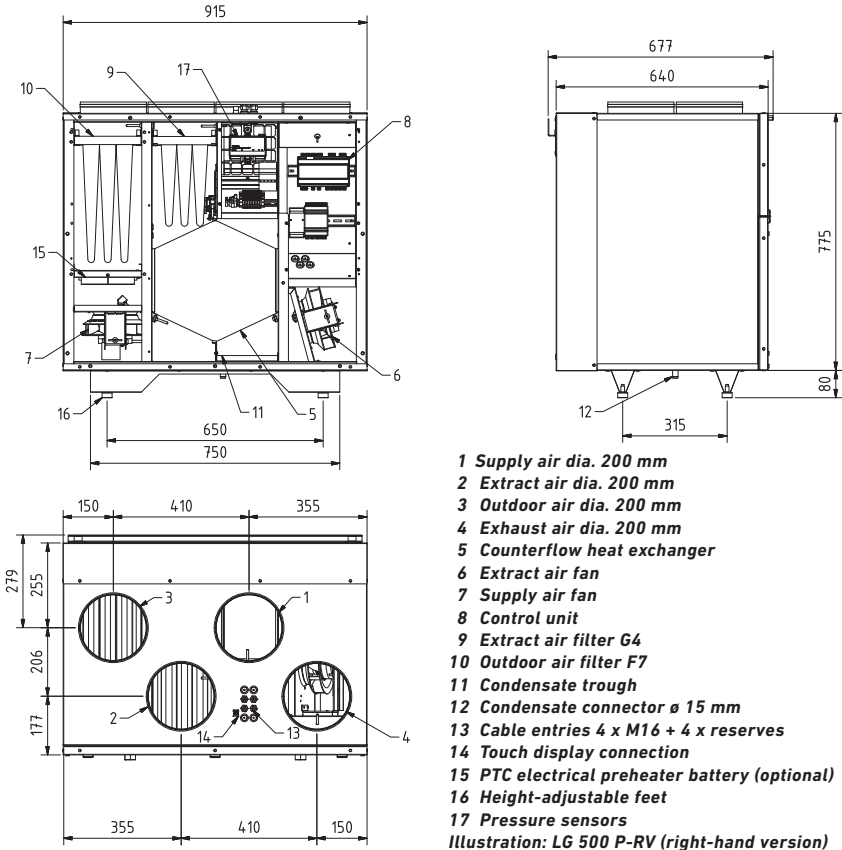
The compact ventilation unit LG 500 P is available in several different versions:

- right-hand or left-hand, depending on the location of the supply air connecting piece
- with or without electrical PTC pre-heater battery
- With standard or enthalpy heat exchanger for moisture recovery
- Pressure sensor for constant pressure control function

Version	Right-hand version	Left-hand version
Part no. without integrated PTC preheater battery	08LG500P-R	08LG500P-L
Item no. with an integrated PTC preheater battery	08LG500P-RV	08LG500P-LV
Optionally with an enthalpy heat exchanger for moisture recovery	08LG500P + 08EWTLG500	08LG500P + 08EWTLG500
For standing or wall-mounted installation 1 Supply air 2 Extract air 3 Outdoor air 4 Exhaust air		

DIMENSIONS

Illustration with optional PTC pre-heater battery, sound absorption unit for exhaust air side and pressure sensor for extract air and supply air.



12 Functioning of the ventilation system

FUNKTIONAL OVERVIEW

Function	Description	Standard	Optional*	Accessories required
Ventilation control method:	Constant volume flow control	●		
	Air quality control CO ₂	●		07RCQ248330
	Air quality control VOC	●		VOC sensor (special)
	External control signal 0-10 V		●	
	Constant pressure control		●	08LGREGDRUCK
	PICHLER System Optimiser		●	08LGREGSYSOP
Temperature control method	Constant supply air temperature	●		
	Constant extract air temperature	●		
Ancillary functions	External air compensation	●		
	Summer nights cooling (only for weekly program)	●		
Possible heating and cooling components	Internal E-pre-heating battery, 4-level (Standard dependent on apparatus)	●		
	Control of an external E-re-heater battery		●	
	DX cooler controller		●	
	Control of a water pre-heater battery		●	
	Control of a water re-heater battery		●	08LGREGWREG
	Control of a water cooling battery		●	
	Control of a water combi battery		●	
Communication	Integrated web server		●	
	Modbus TCP/IP		●	
	Modbus RTU (not possible with System Optimiser!)		●	
	BACnet		●	
Signal exchange hardware	Analog input for VOC/CO ₂ sensor (on terminal)	●		
	Low rpm input	●		
	High rpm input	●		
	Shut-off valves 2x Belimo LM24A control (on terminal)	●		
	Error message Level A (floating max. 30V / 3A)	●		
	External start input (inverted)	●		
	External stop input (on terminal)		●	
	External fire alarm input (on terminal)		●	
	Operational (floating max. 30V / 3A)		●	

* The options must be specified in the order and will attract additional costs!

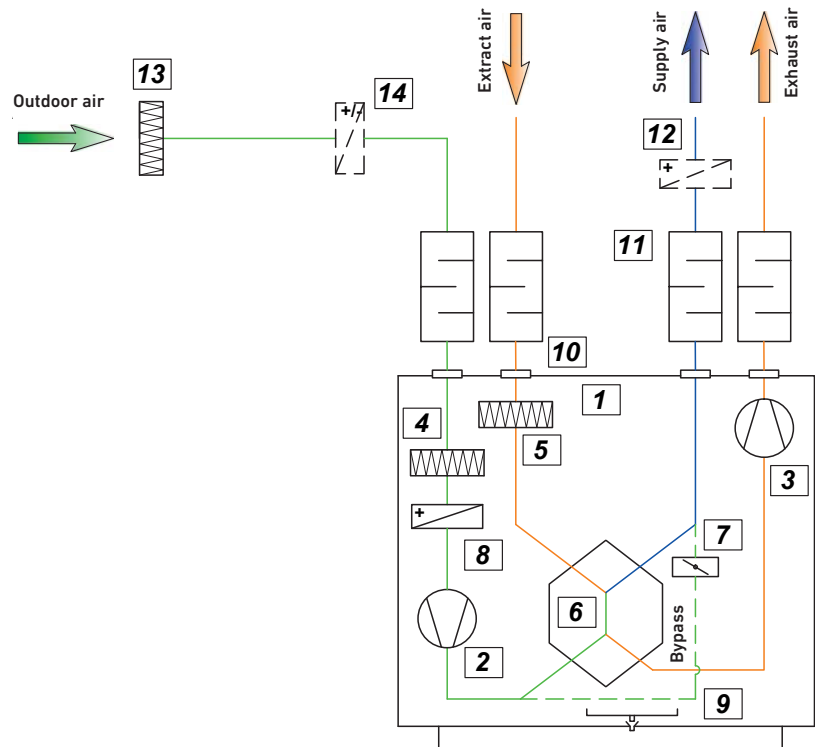


SYSTEM DESCRIPTION

With mechanically-controlled living area ventilation, used, damp outlet air is routed away from the wet areas of a residence (such as bathroom, toilet and kitchen) and is replaced by fresh, purified and filtered outdoor air in the rooms used (such as living rooms and bedrooms).

High energy savings in the operation of the ventilation unit can be realised through needs-based system operation, the use of a highly efficient heat exchanger for the transmission of heat from the extract air into the supply air and the use of energy-efficient fans with the latest EC motor technology.

It should be particularly ensured that the highly efficient heat exchanger is protected against freezing via a suitable, controlled frost-protection strategy and that an effective condensate water outlet, among other measures, is in place. The more airtight the building shell and the more effectively a house is insulated, the more effective this technology is.



The circuit diagram illustrates the fundamental design of the domestic ventilation unit with the optional additional system enhancements.

- 1 Unit's housing
- 2 Supply air fan in EC execution
- 3 Extract air fan in EC execution
- 4 Outdoor air filter for fine dust F7 (optional as pollen filter in quality category F9)
- 5 Extract air filter G4 for coarse dust
- 6 Counterflow heat exchanger (optional enthalpy heat exchanger)
- 7 Bypass flap

- 8 Frost pre-heating for counterflow - heat exchanger (optional)
- 9 Condensate water tank with discharge and drain trap (siphon) supplied by the customer
- 10 Connection pieces for the ventilation unit
- 11 Sound absorbers (optional) in the line system
- 12 Re-heater battery design with warm water (optional) with downstream supply air temperature sensor
- 13 Suction element with pre-filter G4
- 14 Antifreeze protection with water pre-heater register filled with glycol (optional)

GENERAL

USER

SPECIALIST PERSONNEL



POSSIBILITIES OF SYSTEM EXPANSIONS FOR FROST PROTECTION



Depending on extract air temperature and humidity, a danger of freezing will exist at the heat exchanger exhaust air side, particularly under frost conditions in winter. The heat exchanger must be protected against ice formation during low outside air temperatures of ca. -3°C or less, using suitable measures. Various strategies may be followed to protect the heat exchanger from freezing:

- Frost protection via heat exchanger bypass

- Antifreeze protection with water pre-heater register (must be filled with glycol)
- Frost protection via pre-heater coils – electric version

A frost protection alarm will trigger if none of these measures produce an effect after 5 minutes, i.e. if exhaust air temperature remains below minimum level despite fully open bypass damper and PWW pre-heating exchanger or electrical pre-heater on full power.

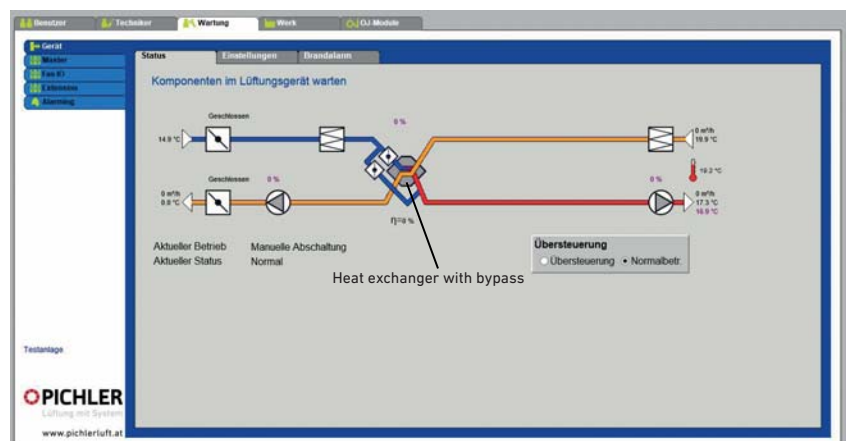
FROST PROTECTION VIA HEAT EXCHANGER BYPASS

If the ventilation unit has no pre-heating exchanger, a bypass may be used to protect the heat exchanger from freezing. Cold outside air will in this case bypass the heat exchanger via a duct and the warm extract air will be used to protect the exchanger from freezing.

With this arrangement, a re-heater exchanger is recommended, in order to maintain a minimum supply

air temperature.

The bypass shutter for the heat exchanger is controlled by a modulating 0-10 V signal from the Air2 system. The exhaust air temperature is measured after the outlet air has passed the heat exchanger to protect the heat exchanger from freezing up.



Description of the control system:

The bypass arrangement will protect the heat exchanger from freezing. The temperature sensor must be positioned in the exhaust air directly after the heat exchanger.

To protect the heat exchanger from freezing, the frost protection temperature (factory setting -5°C) and frost protec-

tion P-band (factory setting 2°C) parameters must be set. This means that the bypass damper will remain closed down to a frost protection temperature plus frost protection P-band. Starting from this temperature, the bypass damper will steadily open and will be fully open when the frost protection temperature is reached.



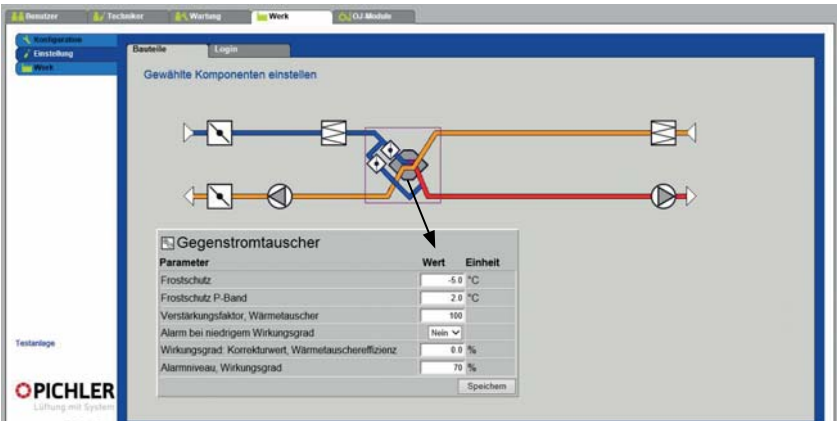


Illustration: Primary parameters

Primary parameters	Description
Frost protection	<ul style="list-style-type: none">The bypass damper will open fully controlled at temperatures below the frost protection temperature and frost protection P-band. This means that the outside air will bypass the heat exchanger and the room extract air will continue passing through the heat exchanger.
Frost protection P-band	<ul style="list-style-type: none">At temperatures below the set frost protection P band plus the set frost protection, the bypass damper will be linearly controlled up to fully open.
Amplification factor, heat exchanger	<ul style="list-style-type: none">Set the heat exchanger's amplification factor.
Alarm at low efficiencies	<ul style="list-style-type: none">Determine whether an alarm will trigger when efficiency is too low.
Efficiency: Correction factor for efficiency calculation	<ul style="list-style-type: none">Set correction factor for efficiency calculation.
Efficiency alarm level	<ul style="list-style-type: none">Set low efficiency alarm limit.To trigger the alarm, the system must be 'running', the efficiency must be less than the set value and the „alarm at low efficiency“ parameter must be set to „Yes“.

FROST PROTECTION VIA WATER PRE-HEATING EXCHANGER (IT MUST BE FILLED WITH GLYCOL)

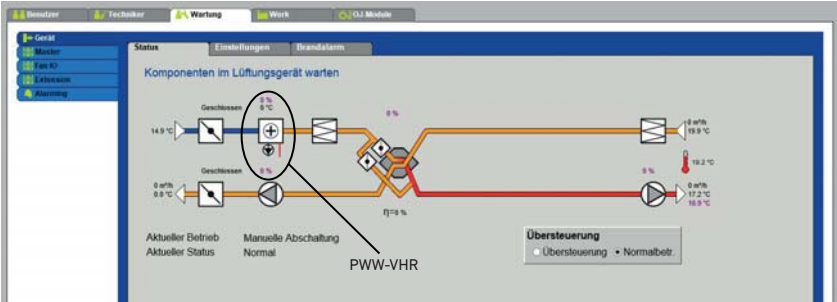
The compact ventilation unit LG 500 P may optionally be fitted with a water pre-heating exchanger to protect the heat exchanger from freezing. The cold outside air will to this end be pre-heated in an optional heating exchanger integrated in the air duct. The pre-heating exchanger will maintain the temperature before the heat exchanger above a set minimum to counter freezing of the heat

exchanger.

The water-glycol mixture is regulated via a 0-10 V mixer controller with heating circuit, including a circulating pump. The heating circuit must operate with antifreeze.



The heating circuit must operate with antifreeze. (Glycol)



Description of the control systems:
The pre-heating exchanger will maintain the temperature before the heat exchanger at a set minimum.

The sensor must be fitted directly after the pre-heating exchanger. Always operate the pre-heating exchanger with antifreeze..



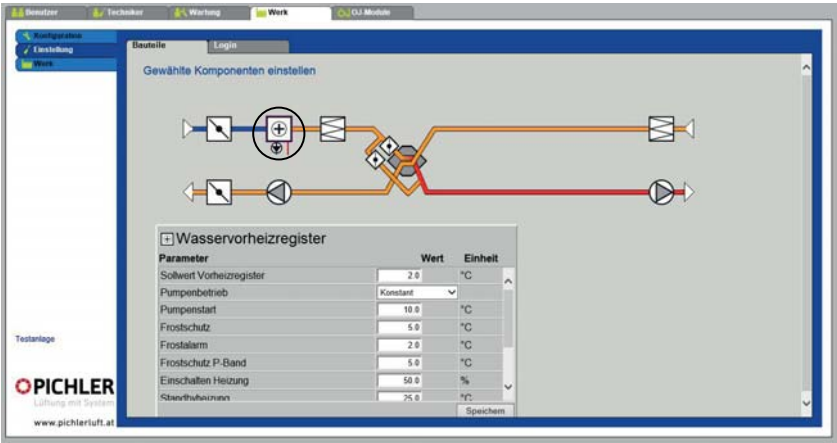


Illustration: Primary parameters

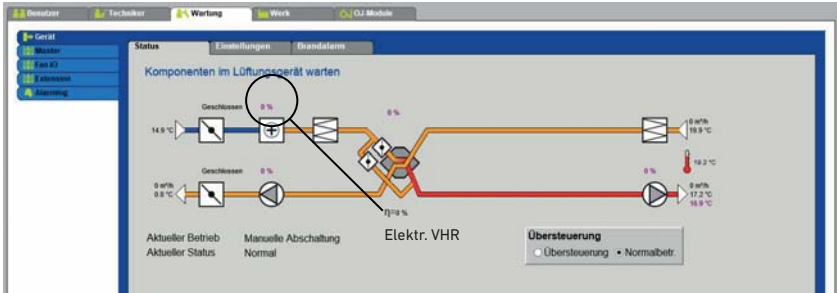
Primary parameters	Description
P-band	<ul style="list-style-type: none">• P-band for the pre-heater PI controller.
I-time	<ul style="list-style-type: none">• I-time for the pre-heater PI controller.
Set-point, preheater	<ul style="list-style-type: none">• Desired air-temperature set-point after pre-heating exchanger.
Pump operation	<ul style="list-style-type: none">• "Constant". The circulating pump in the PWW heater will run continuously when power to the OJ-Air2Master is on.• "Auto". The circulating pump in the PWW heater will run when heating is required (valve setting >0.1%).• "Outside temperature". The circulating pump in the PWW heater will run when heat is required or when the outside temperature drops below the value set in the "Pump start" parameter.
Pump start	<ul style="list-style-type: none">• The pump will start when the outside temperature falls below the set value.• "Pump operation" must be set to "Outside temperature".
Motor-driven valve	<ul style="list-style-type: none">• Set the control range of the motor-driven valve (0-10 V/2-10 V).

For activation of the individual components (U-pump, mixing valve, sensor, etc.), the external controller extension for the 08LGREGWREG water register is required.

FROST PROTECTION VIA INTEGRATED ELECTRICAL PRE-HEATING EX-CHANGER

The compact ventilation unit LG 500 P may optionally be fitted with an electric pre-heating exchanger to protect the heat exchanger from freezing. The cold outside air will to this end be pre-heated via a shell and tube heat exchanger

mounted directly in the outside air duct to counter freezing of the heat ex- changer.



Description of the control system:
The pre-heating exchanger will maintain a minimum required temperature before a heat exchanger.

A PI control algorithm is implemented here.

The electrical pre-heat register has 4-level control.

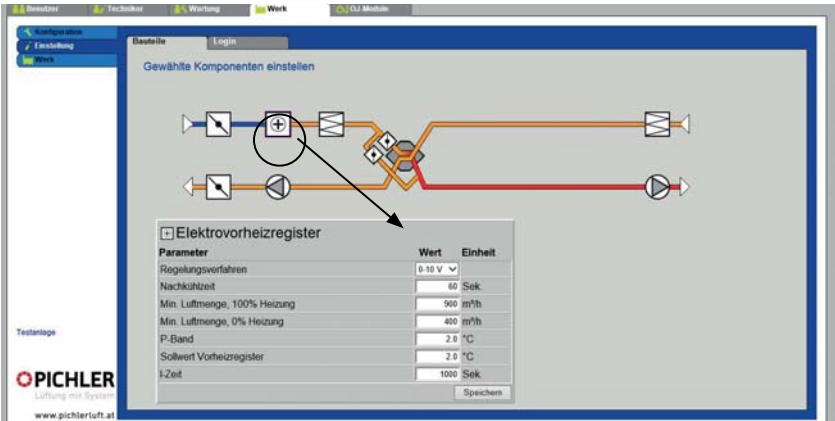


Illustration: Primary parameters

Primary parameters:	Description
Set-point, preheating	• Desired air-temperature set-point after pre-heating exchanger P-band.
Post cooling time	• The electrical heater elements may overheat should air flow be reduced or stopped. The heating elements will be disconnected during post cooling and the ventilation units will continue to run as per the set air volume set-point. The set value defines the period required to ensure cooling of the electrical heating exchanger.
P-band	• P-band for PI controller pre-heater
I-time	• I-time for PI controller pre-heater

SYSTEM EXTENSION FOR EXTERNAL AUXILIARY HEATING

In order to be able to increase the air outlet temperature for the living area further after the heat exchanger, additional external heating can be installed.


This afterheating can be achieved via an external electrical or warm water heater battery integrated into the air line system.

REHEATING WITH ELECTRIC REHEAT REGISTER (E-NHR)

The Supply air undergoes additional heating by an electric reheat register positioned externally. The electric reheat

register has infinitely variable control and is integrated in the temperature controller of the ventilation unit.

POST HEATING VIA PUMPED HOT WATER RE-HEATING EXCHANGER (PWW-NHR)

 A return flow sensor (immersion sleeve or straß-on sensor) must be installed for frost protection of PWW-NHR.

The heating circuit of the supply air re-heating exchanger may also be operated with antifreeze. The fans will stop when a frost alarm triggers.

The supply air undergoes additional heating by a pump-warm-water (PWW) reheat register.

The external controller extension for the 08LGREGWREG water register is required to activate the individual components (U-Pump, mixing valve, sensor).



SYSTEM EXTENSION FOR EXTERNAL COOLING



The heating circuit must operate with antifreeze. (Glycol) In water-based cooling batteries and cooling circuits no frost protection monitoring is carried out by the control system! The glycol filling may only be dispensed with in exceptional cases, in indoor areas and if there is absolutely no risk of frost (e.g. if the cooling battery is installed downstream of a frost-monitored heater battery).

An external cooling register can be installed in the air duct system to lower the air exit temperature for the living

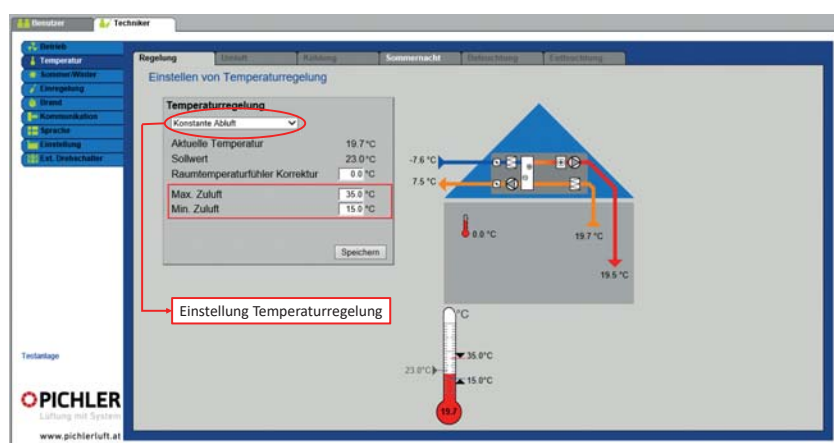
area after the heat exchanger. The following external cooling components can be integrated as options in the ventilation unit controller.

- DX register:
- Cold water register
- Combination register

For activation of the individual components (U-pump, mixing valve, sensor, etc.), the external controller extension for the 08LGREGWREG water register is required.

Temperature control type:

- Constant supply air temperature
- Constant extract air temperature



EXTERNAL CONTROL EXTENSION FOR EXTERNAL WATER REGISTERS



The frost protection strategy for water-dependent heating/cooling batteries must always be checked against the local system requirements and on-site conditions, and modified if necessary. It may sometimes be necessary to install an additional safety assembly (e.g. frost protection thermostat, heat exchanger). In case of risk of frost we recommend to always use a glycol filling. Outdoor heating circuits must always be operated with antifreeze (glycol)!

External control extension for ventilation units with a PI-Air2 control system. Provides for controlling a maximum of two external water registers (pre-heater, postheater, water cooling battery and combi exchanger). Control system extension pre-assembled and wired in the surfacemounted housing.

- Dimensions (W x H x D):
255 x 180 x 110 mm

- Material: polystyrene
- Colour: light grey, similar to RAL 7035
- Degree of protection: IP 54/66
- Suitable for indoor use
- Metric knockouts for screwed cable glands

Accessories included:

- Clamp-on temperature sensor PT1000 (2 pieces)
- Modbus flat cable (7 metres)
- RJ12 plug for press-fit applications (2 pieces)



DEMAND-DRIVEN PLANT OPERATION

The Pichler Air2 system can offer several options for demand-driven air flow control:

- Constant CO₂/VOC value
- Constant pressure control
- Fan optimiser system
- Pichler optimiser system

CO₂/VOC-CONTROL

CO₂-/VOC-Controll:

- The plant must be configured with a CO₂/VOC-sensor.
- The CO₂/VOC-sensor may be fitted either as a room sensor or as a duct sensor in the extract air duct.



Needs-based operation with air quality sensors

Optional accessories for needs-based operation

Intelligent air quality sensors with a surface-mounted housing are available as optional accessories. The sensors help to control a needs based ventilation in living and working spaces.

The air volume flow can be controlled via the sensors (see table)

Needs-based operation via the CO₂ / VOC and/or humidity sensor module only functions in automatic mode. The assignment of the fan speeds, the ppm and humidity values can be changed via the integrated web server.

Electrical connection of the sensors:
24 Vdc

Temperature range of the sensors:
- 20 bis + 60 °C

Sensor modules	Measuring range	Measuring sensor
CO ₂ -/VOC-sensor module	0 to 2000 ppm	1

EXTERNAL CONTROL EXTENSION WITH PRESSURE SENSORS

Pressure sensors for external mounting including a connection kit. Serves to ensure the constant pressure control of ventilation units by means of a PI-Air2 control system.



Including:

- A double pressure sensor
- Air tube (1.5 metres)
- Connecting nozzles (2 pcs.)
- Modbus flat cable (5 metres)
- RJ12 plug for press-fit applications (2 pcs.)



GENERAL

FAN OPTIMISER

- Supply air and extract air fans are controlled by fan optimiser signals from the supply and extract air ducts.
- The fan optimiser signal (infinitely variable) is connected to the analogue input.
- The plant must be fitted with 2 separate fan optimisers – one each in the supply and extract air ducts.

PICHLER OPTIMIZER SYSTEM

- Allows ventilation to suit requirements (controlled with CO2 or room regulator) for the individual zones (rooms)
- Optimises airflow based on air volumes currently required for the individual zones
- Plug-and-play system

When the PI zone modules (in rooms/zones) and the PI optimiser are used together with flow regulators, the fan speeds are adjusted as required to save energy. This guarantees the best possible operating point of the system.

USER

EXTERNAL CONTROL EXTENSION WITH PICHLER SYSTEM OPTIMIZER

PI-SYS-OPT is a controller extension for ventilation units with PI-Air2 controller. Provides for the demand-optimized control of the central ventilation unit within a range of up to 25 zones. The system can be extended to a maximum of 125 zones. Control system pre-assembled and wired in the surface-mounted housing.

- Dimensions (W x H x D): 255 x 180 x 110 mm
- Material: polystyrene
- Colour: light grey, similar to RAL7035
- Degree of protection: IP54/66
- Suitable for indoor use
- Metric knockouts for screwed cable glands



SPECIALIST PERSONNEL

OPTIONAL: BUILDING AUTOMATION – NETWORKING

The Pichler Air2 system offers several options for networking into a higher level building automation system.

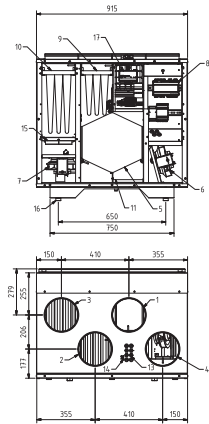
- Integrated web server
- Modbus RTU
- Modbus TCP/IP
- BACnet
- LON

The corresponding bus connection will be activated/parameterised ex factory on customer request.



13 Installation

PREREQUISITES FOR INSTALLATION OF THE UNIT



The *compact ventilation unit LG 500 P* is to be installed in accordance with general and locally applicable safety and installation regulations and in accordance with the provisions of these operating instructions.

The erection and installation work may be performed only by authorized skilled personnel.

The ventilation unit must only be set up in a frost-free room, e.g. in a cellar or loft, with ambient temperatures of a minimum of +5 °C and a maximum of +40 °C. Accumulating condensate water must be discharged frost-free and safely via a gradient and using an effective drain trap (siphon).

The installation position for the device must be selected so as to allow sufficient room to fit air line connections, electrical connections and the condensate connection (12) as well as to perform maintenance and inspection work.

In front of the unit a free space of at least 1 m has to be taken into consideration for tending and servicing work.

An even and sufficiently hard installation surface should be used for installing the ventilation unit. The ventilation unit can also be mounted on a solid wall, capable of supporting the device weight, using the wall-mounting bracket supplied as standard. In doing so sufficient dimensioning (structural analysis) of the load-bearing components has to be ensured.

The following devices must be available in the installation room:

- Air line connections for the supply, extract, outdoor air and exhaust air
- An electrical mains connection of 230 V/50 Hz, fuse 16 A
- Condensate drainage line with an effective odour trap (siphon)

All on-site work (drainage, floor structure etc.) must be completed prior to installation of the ventilation unit.

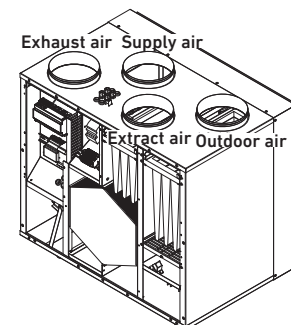
After connection of the air lines to the ventilation unit, the unit is fixed and can no longer be moved.

The outdoor air and exhaust air lines, for example, between the ventilation unit and roof leadthrough, have to be sufficiently insulated for energy reasons and for the purpose of avoiding condensate formation. No condensate must be allowed to form on the air lines or in the roofing.

In the case of line routes outside of the thermally insulated building shell these routes have to be sufficiently insulated in the cold area.

To ensure proper and functional system operation, suitable insulation, sound insulation and installation materials, conforming to the planning documents and technical data, such as adequate sized sound absorbers, supply air and extract air valves, overflow openings etc. should be provided for. In principle, all device connection pieces should be fitted with sound absorbers to ensure an appropriate sound level in the living area.

Air line leadthroughs through walls or ceilings have to be made so that they do not resonate due to structure-borne noise.



To protect against coarse contamination, for example, leaves, insects etc., a fine mesh wire grating has to be provided as a prefilter directly at the central outdoor air intake point. The protective grating has to be checked and, if necessary, cleaned at regular intervals, in particular in the spring and autumn. Inspection openings should be provided in the air line system to facilitate cleaning and maintenance of the system.

GENERAL

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DEVICE INSTALLATION

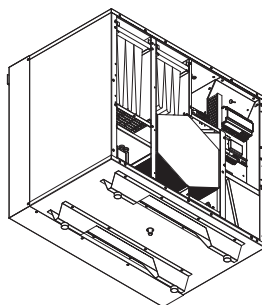


For all work see *point safety instructions* of these instructions have to be heeded!

SETTING UP THE VENTILATION UNIT-FREE-STANDING INSTALLATION

The ventilation unit is supplied ready to operate and ready to plug in.

to perform maintenance and inspection work.



View from below

The ventilation unit is supplied ready to operate and ready to plug in. Ensure that there is sufficient room to fit air line connections, electrical connections and the condensate connection as well as

After setting down the ventilation unit at the place of installation, it has to be aligned in position. The ventilation unit must be installed horizontally and securely. Optimal drainage of condensation is only guaranteed with precise alignment. Alignment of the unit is possible easily via the adjustable feet of the unit.



Ensure that there is sufficient distance between the underside of the device and the floor to guarantee fault-free function of the condensate discharge.

WALL MOUNTING

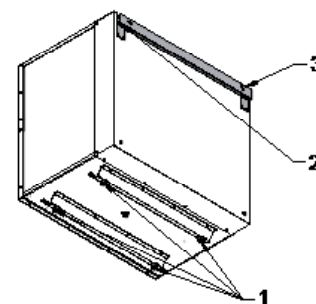
When mounting the ventilation unit on a wall, screw the four rubber buffers (1) out of the bottom of the device and screw these into the housing rear (2) (four rubber buffers are supplied as standard).



The wall-mounting bracket (3) supplied as standard should be fixed horizontally, to a suitable solid wall capable of supporting the device weight. The weight of the ventilation unit without optional accessories is 75 kg.

After installation of the wall mounting rail the ventilation unit's two top rubber buffers are hooked into the wall-mounting strap (3).

When doing this it must be ensured that the rubber buffers engage properly into the recesses provided for this purpose. The device is aligned vertically using the rubber buffers screwed into the underside of the housing rear.



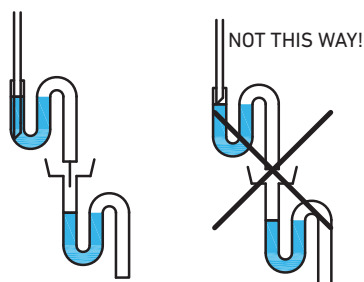
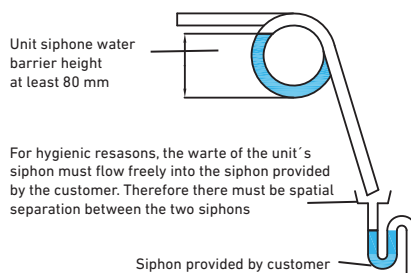
View from below



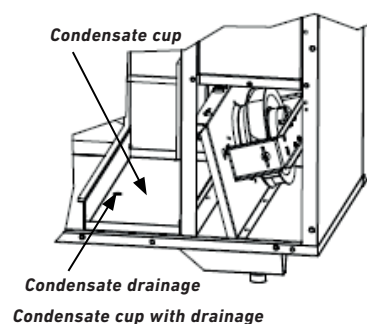
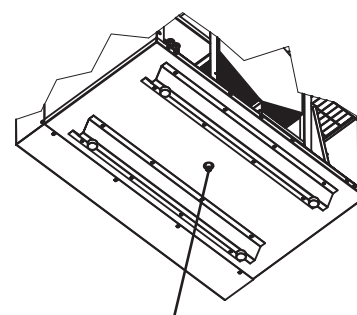
PRODUCTION OF THE CONDENSATE WATER CONNECTION

The entire front of the unit must be removed before work is commenced.

A sufficiently long hose with min. \varnothing 15 mm internal diameter section is connected to the condensate connector of the ventilation unit. The loose end of the condensate hose is fed into a siphon which has been installed on-site. The odour trap can also be made optionally with an effective water column of approx. 80 mm by bending the hose. The hose must not be kinked and should be suitably fixed.



For reliable drainage of the water, a sufficient gradient (min. 5 %) must be ensured. The odour trap must be filled with water to effectively prevent odour from spreading and for the avoidance of leaks. The condensate tank should be filled with sufficient water to test the reliable drainage of water and the leak-tightness of all connections before commissioning.



Upon completion of the work all tools and installation materials have to be removed from the unit. It has to be ensured that no tools or installation materials remain in the unit, because on initial startup they can cause damage or the destruction of the unit.

When the front door is closed, sufficient and dependable sealing against the unit housing has to be ensured in order to guarantee airtight and condensate-tight closure.



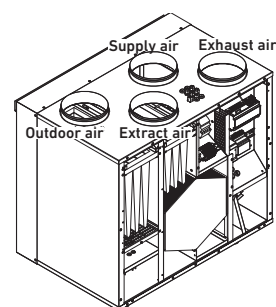
CONNECTION OF AIR LINES AND COMPONENTS

When connecting the air lines, ensure air-tightness and a suitable vibrational decoupling. The air lines and attachments, such as sound absorbers etc., must only be fixed to the ventilation unit using adequately dimensioned fixing elements and to suitable, solid walls or ceiling elements of the building.



The use of flexible hoses for making the unit connections has to be avoided.

When making the line connections it has to be ensured in particular that no tools and no installation materials fall into the unit connections or onto the unit itself. Damage could then occur to the components, for example, to the fans blades.



Suitable and sufficient insulation of the air line components and installation components has to be made in accordance with the project specifications.

Sealing

All sealing required during assembly must be performed using neutral-curing and non-corrosive sealants. For

example: Sikaflex®-221, silicone-free (item no. 12DMAUSSEN).

Legend for the symbols used

The corresponding air type for each connection piece on the ventilation unit is marked by means of a symbol.

**Extract air****Outdoor air****Exhaust air****Supply air**

14 Electrical connection



- Warning: hazardous electrical voltage!
- Disregarding the hazard may result in death, injury or material damage.
- Before carrying out any work on live parts, the unit must always be disconnected completely from the power supply (all poles) and secured against being switched back on!

Electrical connection and work on electrical components may only be carried out by authorised electricians only.

The relevant national and local regulations and standards must be complied with during assembly and electrical installation.

Final responsibility for the electrical installation, cabling, etc. lies with the electrical contractor which performed them.

The **LG 500 P** compact ventilation unit is designed for a **230 V/50 Hz** power supply.



The safety information, about electrical connections in particular, must be observed when

performing any electrical work (See Pages 8 and 9).

- The electrical connection must accord with the electrical switching plan!
- The cable cross-sections indicated are minimum cross-sections for copper lines and do not take cable length or site conditions into account.
- Cable type, cable cross-section and laying must be determined by an authorised electrician!
- Low-voltage cables must be laid separately from mains cables; alternatively, screened cables must be used!
- The inlet fuse on the power supply line must be an isolation type!
- Only pulse or AC/DC sensitive residual current protective devices (type A or B) are permitted.
- Potential equalisation must be put in place between the unit and the air duct system!
- All safety measures must be tested following electrical connection! (Earth resistance etc.)
- After the electrical connection has been established, the function of the protective measures (those for electric shock in particular) must be checked.

GENERAL

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OPEN THE UNIT

When opening the ventilation unit to perform electrical connections, the wing nuts will need to be released and the access doors opened.

CONTROLLER

The protector plate behind the inspection front must be removed for access to the controller.



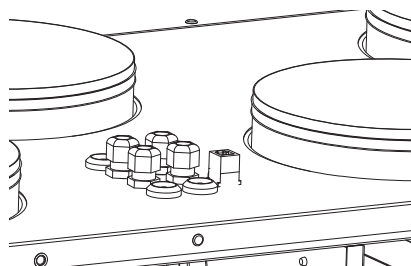
Note: A flat plug is used to connect the protector plate to the ground connector of the unit.

The flat plug must be pulled off before the protector plate is removed completely.



CABLE INLETS

Connection cables must be fed through the cable gland on the top of the ventilation unit in order to connect the cables for the relevant control unit as well as optional system components such as external reheating or external sensors.



- The cable glands are only suitable for rounded cable and lines.
- A separate cable inlet must be used for each cable!
- Unused cable inlets must be hermetically sealed!
- All cable entries must be strain-relieved!
- An RJ12 jack is on the top of the unit to connect the control unit.

CONNECTION FROM CONTROL UNIT TO CONTROLLER

The operating unit is connected to the ventilation unit control system by means of the supplied Modbus cable. A corresponding RJ12 jack is available for this on the top of the unit.

On the control unit itself, the Modbus cable is plugged into the rear of the unit, in the RJ12 port. Alternatively, the screw glands on the control unit can also be used to connect a Modbus cable.

When installing the control unit separately, a standard telephone cable or appropriately designed Modbus cable up to a max. length of 50 m can be used. We recommend the use of an AWG28/6C ribbon cable (e.g. MFK6SW, MPFK6S) or a LIYY 6x0,14 mm² electronic line.

CONNECTION TO WEB SERVER (OPTIONAL!)

In the controller part of the ventilation unit, directly on the "PI-Air2 Master", is a corresponding RJ-45 jack (see graphic)

that is provided for communication with a TCP/IP network.

RJ45 Anschluss für:

- Webserver (optional)
- Modbus TCP/IP (optional)
- BACnet (optional)

(Cat5 oder höherwertig)

RJ12 Anschluss für Bedienteil
Kabellänge max. 50m

RJ12 Anschluss für externen Modbus RTU (optional)

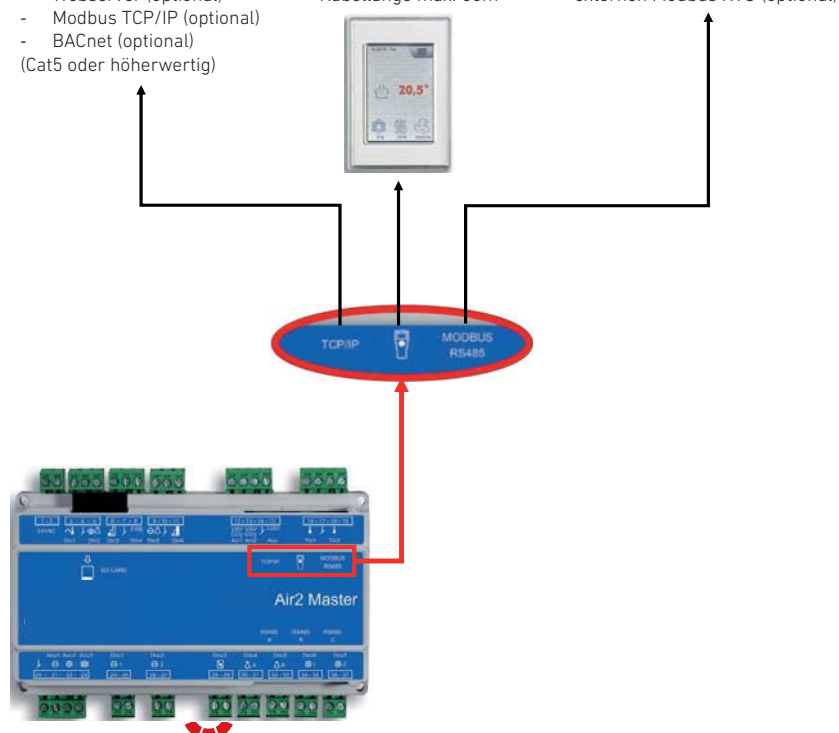


Illustration: Connection to Web Server, Controll unit Modbus

INSTALLATION CONTROL UNIT

PI-HMI can be installed in two ways: either in a wall box/panel front or directly on a flat surface.

INSTALLATION ON FLAT SURFACE

The back cover of the PI-HMI is equipped with a keyhole-shaped opening which can be used to hang the unit on a flat surface (*see illus. 1*). Use a screw that

is max. 3.5 mm in diameter and that of the screw head should have a maximum diameter of 9 mm.

INSTALLATION IN WALL BOX/PANEL FRONT

If PI-HMI is to be installed in a wall box or panel front, the back cover must be removed.

The back cover can now be detached and the front cover refitted. The baseplate is equipped with several screw holes.

Firstly, the front cover must be detached by gently releasing the catch on the bottom of the unit with a flat screwdriver and the front is folded up (*see illus. 2*).

The dimensioned drawing (*see illus. 4*) can be used as a drilling template. The baseplate should be secured with at least two screws tightened to a torque of max. 0.8 Nm. Installation depth is 20 mm.

Once the front is removed, the two screws used to secure the rear cover must be undone completely (*see illus. 3*).

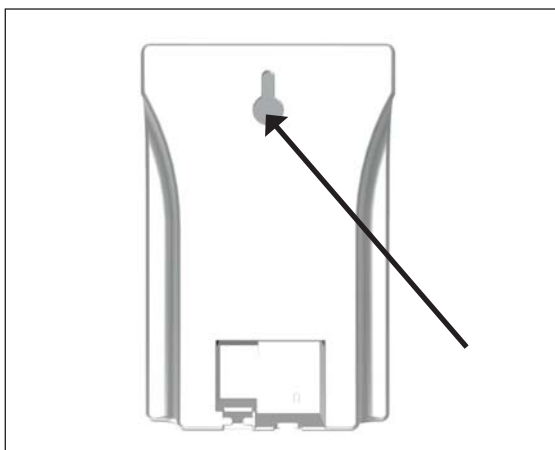


Illustration 1: Installation on flat surface



Illustration 2: Removing the front cover



Illustration 3: Removing the back cover

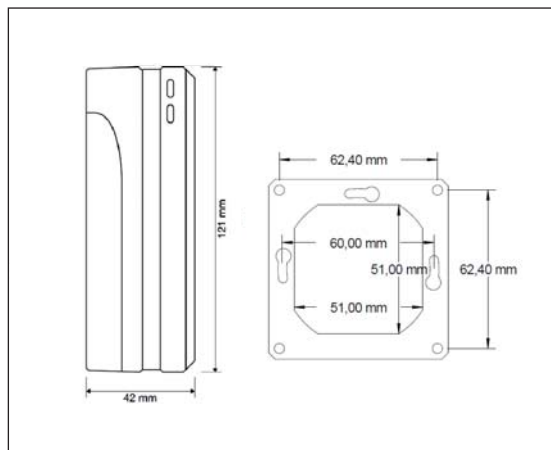


Illustration 4: Dimensioned drawing to facilitate installation in wall box or panel front



MODBUS CONNECTION

PI-HMI is connected to the PI Air2 Master by means of a Modbus cable. The Modbus cable can be connected to the PI-HMI by means of the RJ12 6P4C port.

Connect the Modbus cable to the Modbus port for a hand terminal on the PI Air2 Master and to the RJ12 6P4C port on the PI-HMI (*see illus. 5*).

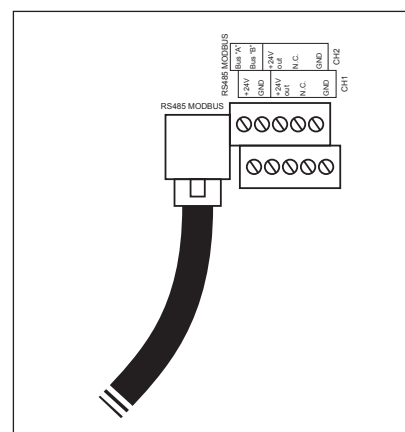


Illustration 5: Connecting Modbus via the RJ12 6P4C port

Technical Data	
Supply voltage	24 V= $\pm 10\%$
Cable dimensions	10 \times max. 0,75 mm ²
Relative humidity	0-95 % (non-condensing))
Operating temperature	-10/+40 °C
Enclosure rating	IP21 (EN 60529)
Port	1 \times RJ12 6P4C
-	10 Schraubklemmen
Dimensions	80 \times 121 \times 42 mm (<i>see illus. 4</i>)
Installation depth	22 mm
Max. power consumption	900 mW
Standby power consumption	600 mW

The PI-HMI touch panel is maintenance-free. Please contact us if you have any further queries.

MAINS CONNECTION

The ventilation unit is supplied ready to plug in. The mains connection line is 2,5 m in length and fitted with a shock-proof plug. The mains connection must be correctly set up using an appropriate shock-proof plug on site.



Before working on the electrical power unit, the equipment must be isolated from mains and protected against renewed switch-on.



The ventilation unit may be operated with the rated voltage of 230 V / 50 Hz indicated on

the nameplate only. The fuse on the line should be max. 16 A and be an isolating type.

The supply pipe must be dimensioned by an authorised electrician in full compliance with the relevant guidelines.

Only pulse or AC/DC sensitive residual current protective devices (type A or B) are permitted.



CONTROL LINES

All lines for sensors, actuators, pumps, etc. must be connected in accordance with the electrical circuit diagram.

Lines must be dimensioned by an electrician.

Low voltage cables must be routed separately from power cables. If this is not possible, shielded cables must be used.

The electrical circuit diagram indicates the maximum permissible load capacity for potential-free outputs (contacts).

CIRCULATING PUMPS

Pumps connected to the control system must be intrinsically safe and stallproof. Electrical connection with $U = 230 \text{ VAC}$ and $I_{\text{max}} = 1,5\text{A}$.

INTERNAL CONTROL FUSE

Only original fuses with the prescribed amperage and dimensions may be used.

GLASS TUBE FUSE

- 1 x T 16A H $\varnothing 6,3 \times 32 \text{ mm}$
- 1 x T 6,3A H $\varnothing 5 \times 20 \text{ mm}$
- 1 x T 800 mA L $\varnothing 5 \times 20$

15 Servicing and cleaning

SAFETY DIRECTIONS

During cleaning and maintenance work to the ventilation unit, the mains plug should always be removed or the ventilation unit disconnected completely from the power supply (all poles) and secured against being switched back on!

Other available equipment components and system elements, e.g. earth heat exchanger, preheater and reheater batteries, silencers etc. have to be serviced and cleaned in accordance with the regulations and instructions.

When the front panel or the covers are opened and unscrewed, work has to be performed with great care, conscious of safety and dangers.

A vacuum cleaner has to be used to remove the dirt and dust. Cleaning with great force or with compressed air can cause damage to the components and to the surfaces.

The use of corrosive or dissolving cleaning agents is not permitted.

The electrical components must not come into contact with moisture or wetness.

For all electrical work, observe the *point Safety instructions* under *Point 4* and in particular *Point Electrical connection work*.

SERVICE INSTRUCTIONS FOR THE SPECIALIZED INSTALLING COMPANY

The work tasks on the ventilation unit as specified below must be performed by skilled personnel only.

If defects are discovered during the course of maintenance work, these must be immediately rectified to ensure a safe system operation.

Only genuine spare parts may be used for replacements or repairs.

GENERAL

USER

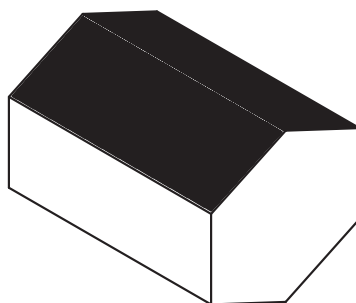
SPECIALIST PERSONNEL



HEAT EXCHANGER WITH BYPASS FLAP

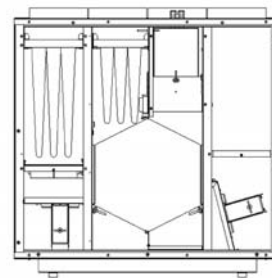
Cleaning at least once annually is recommended, depending on the degree of contamination of the heat exchanger.

The heat exchanger must be carefully removed from the device for maintenance.



The heat exchanger is cleaned by rinsing with warm water (max. 50 °C) and a normal cleaning agent and then rinsing off with warm water. Under no circumstances should the exchanger be blown through with compressed air.

This could destroy the exchanger!



Before fitting the exchanger in the device, the guide rails of the exchanger should be lightly greased to ensure simple and smooth sliding. The exchanger should be replaced in the same position (extract air side should be returned to the extract air side).

FANS

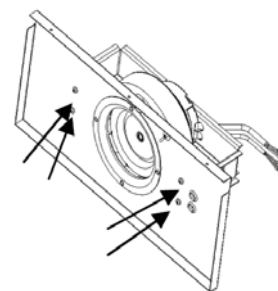
Before commencing work on the fans, power to the device unit must be disconnected completely from the power supply (all poles) and secured against being switched back on!

Maintenance and cleaning work on the fan is limited exclusively to the fan housing and the impeller. Cleaning may be required depending on the degree of the contamination of the fans.



Opening of the motor housing and working on the electrical components in the motor must be performed only by the manufacturer of the fan. In the event of fan defects, this should be replaced with a new original fan.

To clean the fans, the 4 fixing screws on the fan housing should be removed. The fan has to be carefully pulled out of the housing. Attention has to be paid to the electrical connecting cable to the motor. It must not incur any damage.



A soft brush has to be used to clean the fan blades. The fan housing is cleaned with a vacuum cleaner.

Damage to the rotating blades must be avoided. Any balancing weights present must not be removed or damaged, otherwise imbalance of the impeller will take place in operation and an increased noise level and vibrations can occur as a result.



ELECTRICAL PTC PREHEATER BATTERY (OPTIONAL)

Depending on the degree of contamination of the heat unit, cleaning is recommended at least annually.

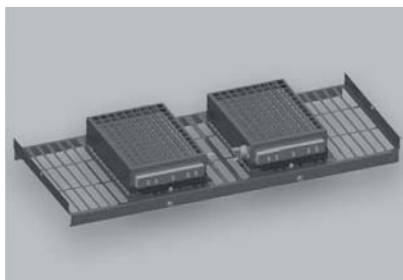


Illustration: PTC low temperature preheater battery



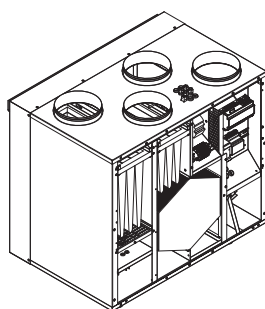
Prior to working on electrical heater batteries, must be disconnected completely from the power supply (all poles) and secured against being switched back on!

The fins on the battery must not incur any damage in the course of the cleaning work. A vacuum cleaner or soft brush should be used to remove dust.

During cleaning work to external electrical pre-heater batteries, the supply air should always be inspected, where present, and replaced if contaminated.

UNIT'S HOUSING - INTERNAL CLEANING

Depending on the degree of contamination, we recommend at least an annual cleaning for the inside of the device housing.



During cleaning, ensure careful handling of the insulated surfaces of the housing. Excessive use of force during cleaning (e.g.: wiping and brushing), can cause damage to the insulation surfaces! A vacuum cleaner has to be used to remove the dust.

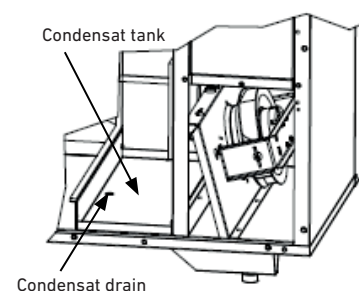
The electrical components must not come into contact with moisture or wetness. In particular, attention has to be paid to avoiding possible damage to the temperature sensors and electrical connecting lines.

CONDENSATE DRAINAGE

Depending on the degree of contamination and temperatures, we recommend at least an annual cleaning of the condensate discharge, the discharge line and the drain trap (siphon).

For reliable operation of the system, fault-free functioning of the condensate discharge line and its components must be ensured. This functioning should be checked at regular intervals.

Any deposits or blockages in the drainage line and in the odour trap have to be removed. The condensate tank has to be cleaned with a damp cleaning cloth.



Test the functioning of the condensate drain with water after cleaning to make sure it works properly. To do this, fill the condensate tank with sufficient water. Then observe whether this water can drain reliably via the condensate drain line into the discharge. Also check for leak tightness.

To effectively counteract any odour nuisance or leakages, the odour trap has to be filled with water prior to switching the system back on.



GENERAL

USER

SPECIALIST PERSONNEL

SERVICE TABLE

For the purpose of documenting the service work this table has to be filled in after performance of any work on the system:

System installed by:			Date
Item	Service work (e.g. filter change)	Performed by: Signature	Date
1			
2			
3			
4			
5			
6			
7			
8			
9			
10			
11			
12			
13			
14			
15			
16			
17			
18			
19			
20			
21			
22			
23			
24			



INITIAL STARTUP



The complete ventilation system must be in place along with all electrical, hydraulic and air-related connections before commissioning the ventilation unit. Commissioning or system settings can only be performed once all work to the system is complete.

The factory settings on the control unit may only be changed by a skilled installer. Incorrect settings can lead to errors in the device!

Basic procedure for initial startup:

- Checking prior to initial startup
- Are all air lines and integrated components installed?
- Are all air ducts and components fully installed and airtight?
- Is the electrical wiring complete and the operator control unit installed?
- Is a functioning condensate connection established?
- Are the air outlets, inlet and outlet valves correctly fitted and in the open position?
- Are the air filters in the ventilation unit correctly installed and in a clean condition?

- Are the air filters in the earth heat exchanger etc. correctly installed and in a clean condition?
- Are any installed fire dampers in the open position?

Setting the system parameters

- Check system components and correct settings where necessary
- Set system parameters, e.g. adjust air volume flow / fan speed
- System time
- Set time programme as required

COMMISSIONING - SERVICE

16 Installation / Operation from the web server

Certified partners receive on request more detailed information on installation and operation from the web server.

Servicehotline: +43 (0)463 32769-290
E-Mail: service@pichlerluft.at



17 Spare parts and accessories



Only genuine spare parts may be installed and used for replacement work and repairs.

Dependable operation is ensured only if genuine spare parts are used!

CONTROL ELEMENTS

Designation	Item number
Control unit PI-HMI	08PIHMI
Connecting cable (control unit / compact ventilation unit, copper clad aluminium (CCA) ribbon cable)	40LG041480
RJ12 connector for Connecting cable	40LG041650
PT1000 Temperature sensor with metal sleeve	40LG041311
Glass time-lag fuse for the Control unit	40LG040500
CO ₂ sensor module with surface-mounted housing	07RCO248330

SYSTEM COMPONENTS

Designation	Item number
Optional electrical PTC low-temperature pre-heater unit	40LG500BG270
Water-re-heater battery model CWW 200-2-2,5	08PWW500200
External control extension for external water registers	08LGREGWREG
External control extension with Pichlersystem optimizer	08LGREGSYSOP
External control extension with pressure sensors	08LGREGDRUCK

AIR FILTERS

Designation	Item number	Dimensions mm
Supply air filter quality category F7	40LG050090	500 x 200 x 350
Optional supply air filter quality category F9	40LG050110	500 x 200 x 350
Extract air filter quality category G4	40LG050100	500 x 190 x 250
Optional extract air filter quality category F5	40LG050120	500 x 190 x 250

18 Subject to change

These instructions have been drawn up with the greatest care. However, no rights may be derived from them.


We constantly make every effort to make technical improvements to and optimize

our products and reserve the right to change the design of the units or the technical specifications without prior notice.



19 Product data sheets

PRODUCT DATA SHEET: LG 500 P

	manual control	clock control	central demand control	local demand control	
Specific energy consumption (SEC)					
cold climate	-72,49	-73,75	-76,14	-80,45	[kWh/(m²·a)]
average climate	-35,68	-36,70	-38,63	-42,00	[kWh/(m²·a)]
warm climate	-11,96	-12,85	-14,51	-17,35	[kWh/(m²·a)]
Specific energy consumption class					
	A	A	A	A+ (most efficient)	
Type					
"residential ventilation system", "bidirectional ventilation system"					
Motor and drive					
variable speed			x-value	2	[-]
Type of heat recovery system					
recuperative					
Thermal efficiency of heat recovery			η _t	84,7%	[-]
Maximum flow rate			q _{Vd}	445	[m³/h]
Electric power input of the fan drive, including any motor control equipment, at maximum flow rate			P _E	173,0	[W]
Sound power level			L _{WA}	42	[dB(A)]
Reference flow rate			q _{Vn}	311,5	[m³/h]
Reference pressure difference			p _{tU}	50	[Pa]
Specific power input			SPI	0,255	[W/(m³/h)]
Ventilation control (CTRL)					
local demand control	1	0,95	0,85	0,65	[-]
Maximum air leakage rate					
internal			q _{vi} / q _{Vn}	0,58%	[-]
external			q _{ve} / q _{Vn}	1,50%	[-]
Filter change					
The filters are to be replaced as soon as the command to replace the filters appears on the display of the operator control unit (marked red in the picture alongside).					
CAUTION:					
If the filters are not changed regularly, the system can not work efficiently and the power consumption increases.					
					
<i>Operator control unit "PI-HMI"</i>					
Waste disposal					
Units that are no longer in working order have to be dismantled and properly disposed of by a specialized company via suitable collection centres and in compliance with the waste electrical and electronic equipment ordinance (WEEE), which provides for ratification of community law, directive 202/95/EC (RoHS) and the directive 2002/96/EC (the WEEE directive).					
Annual electricity consumption (AEC)					
	3,65	3,34	2,76	1,80	[kWh electricity/a]
Annual heating saved (AHS)					
cold climate	86,31	86,79	87,75	89,66	[kWh primary energy/a]
average climate	44,12	44,37	44,85	45,83	[kWh primary energy/a]
warm climate	19,95	20,06	20,28	20,72	[kWh primary energy/a]

Information based on the current state of knowledge of EU Regulations 1253/2014 and 1254/2014

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PRODUCT DATA SHEET: LG 500 PF

Specific energy consumption (SEC)	manual control	clock control	central demand control	local demand control	
cold climate	-68,08	-69,56	-72,39	-77,58	[kWh/(m ² ·a)]
average climate	-33,42	-34,56	-36,71	-40,54	[kWh/(m ² ·a)]
warm climate	-10,94	-11,88	-13,64	-16,68	[kWh/(m ² ·a)]

Specific energy consumption class	B	A	A	A	
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Type

"residential ventilation system", "bidirectional ventilation system"

Motor and drive

variable speed		x-value	2 [-]	
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Type of heat recovery system

recuperative

Thermal efficiency of heat recovery	η_t	77,6% [-]	
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Maximum flow rate	q_{Vd}	445 [m ³ /h]	
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Electric power input of the fan drive, including any motor control equipment, at maximum flow rate	P_E	177,2 [W]	
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Sound power level	L_{WA}	42 [dB(A)]	
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Reference flow rate	q_{Vn}	311,5 [m ³ /h]	
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Reference pressure difference	p_{tU}	50 [Pa]	
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Specific power input	SPI	0,255 [W/(m ³ /h)]	
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Ventilation control (CTRL)

local demand control	1	0,95	0,85	0,65	[-]
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Maximum air leakage rate

internal	q_{vi} / q_{Vn}	0,58% [-]	
external	q_{ve} / q_{Vn}	1,50% [-]	

Filter change

The filters are to be replaced as soon as the command to replace the filters appears on the display of the operator control unit (marked red in the picture alongside).

CAUTION:

If the filters are not changed regularly, the system can not work efficiently and the power consumption increases.



Operator control unit "PI-HMI"

Waste disposal

Units that are no longer in working order have to be dismantled and properly disposed of by a specialized company via suitable collection centres and in compliance with the waste electrical and electronic equipment ordinance (WEEE), which provides for ratification of community law, directive 202/95/EC (RoHS) and the directive 2002/96/EC (the WEEE directive).

Annual electricity consumption (AEC)	3,65	3,34	2,76	1,80	[kWh electricity/a]
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Annual heating saved (AHS)

cold climate	81,91	82,60	84,00	86,79	[kWh primary energy/a]
average climate	41,87	42,22	42,94	44,37	[kWh primary energy/a]
warm climate	18,93	19,09	19,42	20,06	[kWh primary energy/a]

Information based on the current state of knowledge of EU Regulations 1253/2014 and 1254/2014

Download from: www.pichlerluft.at



20 EC Declaration of Conformity

Hersteller / Manufacturer:	J. Pichler Gesellschaft m.b.H.
Anschrift / Address:	Karlweg 5, 9021 Klagenfurt am Wörthersee
Bezeichnung / Product description:	Lüftungsgerät in Kompaktbauweise LG 500 P mit integrierter Steuerung
Ausführungen / Type:	LG500P/PF-R / LG500P/PF-L / LG500P/PF-RV / LG500P/PF-LV mit Bedieneinheit Type „PI-HMI“

Die bezeichneten Produkte stimmen in der von uns in Verkehr gebrachten Ausführung mit den Vorschriften folgender europäischen Richtlinien überein:

The products described above in the form as delivered are in conformity with the provisions of the following European Directives: EN 60335-1:2002 + A11:2004 + A1:2004 + A12:2006 + A2:2006 + A13:2008 + A14:2010; EN50366:2003 + A1:2006; EN 62233:2008; EN55014-1:2006 + A1:2009; EN 55014-2:1997 + A1:2001 + A2:2008; EN61000-3-2:2006 + A1:2009 + A2:2009; EN61000-3-3:2008

2014/35/EU	Zur Harmonisierung der Rechtsvorschriften der Mitgliedsstaaten über die Bereitstellung elektrischer Betriebsmittel zur Verwendung innerhalb bestimmter Spannungsgrenzen auf dem Markt <i>On the harmonisation of the laws of the Member States relating to the making available on the market of electrical equipment designed for use within certain voltage limits</i>
2014/30/EG	Zur Harmonisierung der Rechtsvorschriften der Mitgliedstaaten über die elektromagnetische Verträglichkeit <i>On the harmonisation of the laws of the Member States relating to electromagnetic compatibility</i>
2009/125/EG	Richtlinie des Europäischen Parlaments und des Rates zur Angleichung der Rechtsvorschriften der Mitgliedsstaaten zur Schaffung eines Rahmens für die Festlegung von Anforderungen an die umweltgerechte Gestaltung energieverbrauchsrelevanter Produkte <i>Council Directive on the approximation of the laws of the Member States establishing a framework for the setting of ecodesign requirements for energy-related products</i>

Die Konformität mit den Richtlinien wird nachgewiesen durch die Einhaltung folgender Normen und Verordnungen:

Conformity to the Directives is assured through the application of the following standards and regulations:

VO 1253/2014/EU Verordnung (EU) der Kommission zur Durchführung der Richtlinie 2009/125/EG des Europäischen Parlaments und des Rates hinsichtlich der Anforderungen an die umweltgerechte Gestaltung von Lüftungsanlagen

COMMISSION REGULATION (EU) implementing Directive 2009/125/EC of the European Parliament and of the Council with regard to ecodesign requirements for ventilation units

VO 1254/2014/EU zur Ergänzung der Richtlinie 2010/30/EU des Europäischen Parlaments und des Rates im Hinblick auf die Kennzeichnung von Wohnraumlüftungsgeräten in Bezug auf den Energieverbrauch

VO 1254/2014/EU supplementing Directive 2010/30/EU of the European Parliament and of the Council with regard to energy labelling of residential ventilation units

ÖVE / ÖNORM EN 60335-1	ÖVE / ÖNORM EN 62233
ÖVE / ÖNORM EN 60335-2-30 (sinngemäß)	ÖVE / ÖNORM EN 55014-1
ÖVE / ÖNORM EN 60335-2-65 (sinngemäß)	ÖVE / ÖNORM EN 55014-2
ÖVE / ÖNORM EN 60335-2-80 (sinngemäß)	ÖVE / ÖNORM EN 61000-3-2
ÖVE / ÖNORM EN 50366	ÖVE / ÖNORM EN 61000-3-3

Eine vom Lieferzustand abweichende Veränderung des Gerätes führt zum Verlust der Konformität.

Product modifications after delivery may result in a loss of conformity.

Diese Erklärung bescheinigt die Übereinstimmung mit den genannten Richtlinien, ist jedoch keine Zusicherung von Eigenschaften.

Die Sicherheitsinformationen der mitgelieferten Produktdokumentation sind zu beachten. This declaration certifies the conformity to the specified directives but contains no assurance of properties. The safety documentation accompanying the product shall be considered in detail.



ErP
2018

ErP 2018

Fulfills the requirements of the Ecodesign Directive,
in accordance with EU Regulation 1253/2014.



Your partner/installer:



Responsible for the content: J. Pichler Gesellschaft m.b.H. | Photos: Archiv J. Pichler Gesellschaft m.b.H.
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