HEAT RECOVERY AIR HANDLING UNIT

VUT 160 P2B EC A14
VUT 160 PB EC A14
VUT 350 P2B EC A14
VUT 350 PB EC A14
# CONTENTS

<table>
<thead>
<tr>
<th>Section</th>
<th>Page</th>
</tr>
</thead>
<tbody>
<tr>
<td>Safety requirements</td>
<td>3</td>
</tr>
<tr>
<td>Introduction</td>
<td>5</td>
</tr>
<tr>
<td>Purpose</td>
<td>5</td>
</tr>
<tr>
<td>Delivery set</td>
<td>5</td>
</tr>
<tr>
<td>Designation key</td>
<td>5</td>
</tr>
<tr>
<td>Technical data</td>
<td>6</td>
</tr>
<tr>
<td>Design and functioning</td>
<td>7</td>
</tr>
<tr>
<td>Mounting and set-up</td>
<td>9</td>
</tr>
<tr>
<td>Condensate drainage</td>
<td>11</td>
</tr>
<tr>
<td>Connection to power supply</td>
<td>12</td>
</tr>
<tr>
<td>Unit control</td>
<td>13</td>
</tr>
<tr>
<td>Maintenance</td>
<td>15</td>
</tr>
<tr>
<td>Troubleshooting</td>
<td>16</td>
</tr>
<tr>
<td>Storage and transportation regulations</td>
<td>16</td>
</tr>
<tr>
<td>Manufacturer’s warranty</td>
<td>17</td>
</tr>
<tr>
<td>Acceptance certificate</td>
<td>18</td>
</tr>
<tr>
<td>Seller information</td>
<td>18</td>
</tr>
<tr>
<td>Installation certificate</td>
<td>18</td>
</tr>
<tr>
<td>Warranty card</td>
<td>18</td>
</tr>
</tbody>
</table>
SAFETY REQUIREMENTS

- Read the user's manual carefully prior to installing and operating the unit.
- Fulfil the user's manual requirements as well as the provisions of all the applicable local and national construction, electrical and technical norms and standards.
- The warnings contained in the user's manual must be considered most seriously since they contain vital personal safety information.
- Failure to follow the rules and safety precautions noted in this user’s manual may result in an injury or unit damage.
- After a careful reading of the manual, keep it for the entire service life of the unit.
- While transferring the unit control the User's manual must be turned over to the receiving operator.

Symbol legend:

WARNING!

DO NOT!

UNIT MOUNTING AND OPERATION SAFETY PRECAUTIONS

- Disconnect the unit from power mains prior to any installation operations.
- Unpack the unit with care.
- Do not lay the power cable of the unit in close proximity to heating equipment.
- While installing the unit follow the safety regulations specific to the use of electric tools.
- Do not use damaged equipment or cables when connecting the unit to power mains.
- Do not operate the unit outside the temperature range stated in the user’s manual.
- Do not operate the unit in aggressive or explosive environments.
- Do not touch the unit controls with wet hands.
- Do not wash the unit with water.
- Do not carry out the installation and maintenance operations with wet hands.
- Protect the electric parts of the unit against ingress of water.
• Do not allow children to operate the unit.

• Do not store any explosive or highly flammable substances in close proximity to the unit.

• Do not open the unit during operation.

• Do not block the air duct when the unit is switched on.

• Do not sit on the unit and avoid placing foreign objects on it.

• Disconnect the unit from power mains prior to any technical maintenance.

• When the unit generates unusual sounds, odour or emits smoke disconnect it from power supply and contact the Seller.

• Do not direct the air flow produced by the unit towards open flame or ignition sources.

• In case of continuous operation of the unit periodically check the security of mounting.

• Use the unit only for its intended purpose.

THE PRODUCT MUST BE COLLECTED SEPARATELY AT THE END OF SERVICE LIFE.
DO NOT DISPOSE OF AS UNSORTED MUNICIPAL WASTE.
INTRODUCTION

The user’s manual consisting of the technical details, operating instructions and technical specification applies to the installation and mounting of the heat recovery air handling unit VUT ... PB EC A14 , (hereinafter “the unit” as mentioned in the “Safety Requirements” and "Manufacturer's Warranty" sections as well as in warnings and information blocks).

PURPOSE

Due to the ability to save heating energy by means of energy recovery the unit is an important element of energy-efficient premises. The air handling unit is a component part of the ventilation system and may not be commissioned for stand-alone operation.

The unit is designed to ensure continuous mechanical air exchange in houses, offices, hotels, cafes, conference halls and other utility and public spaces as well as to recover the heat energy contained in the air extracted from the premises to warm up the filtered stream of supply air.

The unit is rated for continuous operation.

Transported air must not contain any flammable or explosive mixtures, evaporation of chemicals, sticky substances, fibrous materials, coarse dust, soot and oil particles or environments favourable for the formation of hazardous substances (toxic substances, dust, pathogenic germs).

THE UNIT MAY NOT BE OPERATED BY CHILDREN OR PERSONS WITH REDUCED PHYSICAL, MENTAL OR SENSORY CAPACITIES, OR LACKING THE APPROPRIATE TRAINING.
THE UNIT MUST BE INSTALLED AND CONNECTED ONLY BY PROPERLY QUALIFIED PER-SONNEL AFTER THE APPROPRIATE BRIEFING.
THE CHOICE OF UNIT INSTALLATION LOCATION MUST PREVENT UNAUTHORIZED ACCESS BY UNATTENDED CHILDREN.

DELIVERY SET

- Air handling unit 1 item
- User’s manual 1 item
- Control panel 1 item
- Junction box for wall surface mounting 1 item
- Junction box for wall flush mounting 1 item
- Fastening kit 1 item
- Packing box 1 item

DESIGNATION KEY

VUT X PXB EC A14

- Ventilation unit type
  VUT: heat recovery ventilation
- Rated air capacity (m³/h)
- Spigot location
  P: suspended mounting, horizontal spigot orientation
- Casing modification
- Extra components
  B: bypass
- Motor type
  EC: electronically commutated motors
- Control panel
The unit is rated for indoor application with the ambient temperature ranging from +1 °C up to +40 °C and relative humidity up to 80%.

The unit is rated as a class I electric appliance.

Hazardous parts access and water ingress protection rating:
- IP 44 for the unit motors;
- IP 22 for the assembled unit connected to the air ducts.

The unit design is regularly improved, so some models may slightly differ from those ones described in this manual.

<table>
<thead>
<tr>
<th>Parameter</th>
<th>VUT 160 P2B EC A14</th>
<th>VUT 160 PB EC A14</th>
<th>VUT 350 P2B EC A14</th>
<th>VUT 350 PB EC A14</th>
</tr>
</thead>
<tbody>
<tr>
<td>Power supply voltage, 50-60 Hz [V]</td>
<td>1~ 230</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Max. unit power [W]</td>
<td>50</td>
<td>50</td>
<td>170</td>
<td>170</td>
</tr>
<tr>
<td>Max. unit current [A]</td>
<td>0,4</td>
<td>0,4</td>
<td>1,3</td>
<td>1,3</td>
</tr>
<tr>
<td>Air capacity [m³/h]</td>
<td>190</td>
<td>190</td>
<td>410</td>
<td>410</td>
</tr>
<tr>
<td>RPM [min⁻¹]</td>
<td>3770</td>
<td>3770</td>
<td>3200</td>
<td>3200</td>
</tr>
<tr>
<td>Noise level, 3 m [dB(A)]</td>
<td>26</td>
<td>26</td>
<td>34</td>
<td>34</td>
</tr>
<tr>
<td>Max. transported air temperature [°C]</td>
<td>-25 up to +60</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Casing material</td>
<td>Aluzinc steel</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Insulation</td>
<td>20 mm mineral wool</td>
<td>40 mm mineral wool</td>
<td>20 mm mineral wool</td>
<td>20 mm mineral wool</td>
</tr>
<tr>
<td>Extract filter</td>
<td>G4</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Supply filter</td>
<td>F7</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Connected air duct diameter [mm]</td>
<td>Ø125</td>
<td>Ø125</td>
<td>Ø160</td>
<td>Ø160</td>
</tr>
<tr>
<td>Weight [kg]</td>
<td>47</td>
<td>48</td>
<td>70</td>
<td>70</td>
</tr>
<tr>
<td>Heat recovery efficiency [%]</td>
<td>from 82 up to 94%</td>
<td>from 82 up to 94%</td>
<td>from 80 up to 91%</td>
<td>from 80 up to 91%</td>
</tr>
<tr>
<td>Heat exchanger type</td>
<td>counter-flow</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Heat exchanger material</td>
<td>Aluminium</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Model</th>
<th>Dimensions [mm]</th>
</tr>
</thead>
<tbody>
<tr>
<td>VUT 160 P2B EC A14</td>
<td>ØD 125 A 963 A1 1063 A2 1028 B 710 B1 780 B2 480 B3 410 H 274 H1 314 L 386 L1 293 L2 223 L3 31 L4 106 L5 101 L6 194</td>
</tr>
</tbody>
</table>
**Control panel**
The sensor panel contains touch buttons for unit control and an emergency indicator.

- **Unit voltage:** 8-30 V
- **Temperature range:** from 0 °C up to +45 °C
- **Service life:** 100,000 switching operations
- **Ingress Protection:** IP30
- **Weight:** 150 g
- **Humidity range:** from 5% to 80% (no condensation)

---

**UNIT DESIGN AND FUNCTIONING**

The service side of the unit is equipped with detachable plates fixed with hand screws for filter cleaning and replacement operations. The control unit is positioned inside the unit casing. The power cable and grounding cable are connected to the control unit via the electric lead-ins placed at the side of the unit. The difference between the supply and extract air flow temperature leads to condensate generation. Condensate is collected in the drain pan and is removed outside through the drain pipes.

* Upon customer’s demand the unit may be equipped with a humidity sensor (available as an accessory).

The unit with the installed humidity sensor maintains a set indoor humidity point. As the humidity reaches the set point, the unit starts operating with the maximum speed. As the humidity level drops down below the set point, the unit reverts to the previous operation mode. Installation and connection of the humidity sensor must be carried out on site by a service technician.
**UNIT OPERATION MODES**

**Heat recovery mode:** warm extract air from the room flows into the unit and is cleaned in the extract filter. Then the air is moved through the heat exchanger and is exhausted outside with the extract fan. Then the air flows through the heat exchanger and is supplied to the room with the supply fan.

Supply air is heated in the heat exchanger by means of the extract air heat energy transfer to cold intake air. The air flows are fully separated while flowing through the heat exchanger. Heat recovery minimizes heat losses, which reduces the heating costs in the cold season.

**Freeze protection mode:** this mode is designed for heat exchanger freezing protection and is activated on feedback from the freeze protection temperature sensor in the exhaust air duct. Activation of the freeze protection mode starts when the exhaust air temperature drops down to +3 °C. When the exhaust air temperature exceeds above this temperature point, the unit reverts to the previous operation mode. In the freeze protection mode the supply fan is off, the exhaust fan operates normally.

**Summer cooling mode:** the bypass damper is opened, the extract air that is removed from the premises is routed along the bypass duct. The supply air temperature remains the same as the intake air temperature.
MOUNTING AND SET-UP

THE UNIT MUST BE MOUNTED BY A QUALIFIED EXPERT ONLY, PROPERLY TRAINED AND POSSESSING THE REQUIRED TOOLS AND MATERIALS.

- HUMIDITY SENSOR MOUNTING
The humidity sensor is not included into delivery set and is available on a separate order.
Mounting steps:
• Remove the fastening screws on the service panel and remove the panel.
• Insert the humidity sensor in the mount on the inner casing wall close to the extract spigot and connect the humidity sensor contact socket to the respective contact socket on the control unit, refer to the External wiring diagram.
• Install the service panel back.

- UNIT MOUNTING
To attain the best performance of the unit and to minimise turbulence-induced air pressure losses connect a straight air duct section on both sides of the unit.
Minimum straight air duct length:
• equal to 1 air duct diameter on intake side.
• equal to 3 air duct diameters on outlet side.
If the air ducts are not connected or the connected air ducts are too short, protect the unit parts from ingress of foreign objects.
Cover the spigots with a protecting grille or other protecting device with mesh width not more than 12.5 mm to prevent uncontrollable access to the fans.
While mounting the unit make sure to provide sufficient service access to the unit for maintenance and repair operations. Fasteners for wall-mounting are not included into delivery set and should be ordered separately. While selecting appropriate fasteners consider the material of the mounting surface as well as the weigh of the unit, refer technical data. For selection of the fasteners for unit mounting please refer to service technicians.

Wall and ceiling installation examples of the unit
WALL-MOUNTED CONTROL PANEL INSTALLATION

MAKE SURE THAT THE CONTROL PANEL IS NOT DAMAGED. DO NOT USE A DAMAGED CONTROL PANEL! DO NOT INSTALL THE CONTROL PANEL ON AN UNEVEN SURFACE! WHILE TIGHTENING THE SCREWS, DO NOT APPLY EXCESSIVE FORCE TO PREVENT THE CONTROL PANEL CASING DEFORMATION.

Mounting steps for wall flush mounting of the control panel:

1. Prepare a wall recess and route the required wires and cables to the control panel installation place. Install the mounting box for wall flush mounting. The mounting box is included in the delivery set.

2. Use a screwdriver to carefully undo the latches on the backside of the control panel and remove the back cover.

3. Screw the back side of the casing to the mounting box through the mounting holes. The screws for connection of the control panel to the mounting box are included on the delivery set. Then connect the cable to the control panel in accordance with the external wiring diagram.

4. Press the latches to fix the control panel display.

Wall surface mounting of the control panel:

1. Route the required wires and cables to the control panel installation place. Drill the fastening holes in the wall and screw the mounting box. The mounting box is included in the delivery set. The fastening screws for fixation to the wall are not included.

2. Use a screwdriver to carefully undo the latches on the backside of the control panel and remove the back cover.

3. Screw the back side of the casing to the mounting box through the mounting holes. The screws for connection of the control panel to the mounting box are included on the delivery set. Then connect the cable to the control panel in accordance with the external wiring diagram.

4. Press the latches to fix the control panel display.
Connect the drain pipe to the sewage system using the SG-32 U-trap kit (available upon separate order). The pipe slope downwards must be at least 3°.

The condensate drain system is designed for use in premises with ambient temperature above 0 °C!

If the expected air temperatures are below 0 °C the condensate drainage system must be equipped with heat insulation and pre-heating facilities.
POWER MAINS CONNECTION

**DISCONNECT THE UNIT FROM POWER SUPPLY PRIOR TO ANY ELECTRIC INSTALLATION OPERATIONS. INSTALLATION SHALL ONLY BE PERFORMED BY A PROFESSIONAL ELECTRICIAN. THE RATED ELECTRICAL PARAMETERS ARE STATED ON THE RATING PLATE.**

**DO NOT LAY THE POWER CABLE IN CLOSE PROXIMITY PARALLEL TO THE CONTROL PANEL CABLE! DO NOT COIL THE CABLE FROM THE CONTROL PANEL IN LOOPS WHILE LAYING IT.**

**ANY TAMPERING WITH THE INTERNAL CONNECTIONS IS PROHIBITED AND WILL VOID THE WARRANTY.**

The unit is rated for connection to single-phase ac 230 V/50/60 Hz power mains by using the pre-wired power cord with the Euro Plug XP.

Connect the unit to power supply via the external automatic circuit breaker QF with magnetic trip integrated into the fixed wiring system of the house. The trip current of the circuit breaker must be above the unit consumption current, refer the technical data.

The cable connecting the control panel and the air handling unit must match the criteria:
- type: 4x0.25 mm²
- length: max. 10 m.

Optionally extra controls may be connected to the unit. The connection is performed on the terminal block X2 which is located on the hinged mounting plate of the control unit. Extra connections to the unit are shown in dotted lines.

**Connection of the fire-fighting board contact PK.**
While connecting the automatic fire extinguishing system contact remove the jumper between the 1 and 2 terminals. The connection relies on a normally closed dry contact. In case of a signal from the central fire-fighting board the contact opens the control circuit and cuts off power supply to the unit.

**Connection of the external control device such as CO₂ sensor (NO, C).**
Connect the CO₂ sensor to the terminals 6 and 7. The connection relies on a normally open dry contact. As the contact is closed, the unit turns to the maximum speed.

**Connection of the humidity sensor HV2 (+U, 0-10V, GND).** Connect the HV2 humidity sensor (not included into delivery set, available as a special order) to the contact socket in accordance with the external wiring diagram.

**Connection of the external air dampers (SM1 supply air damper, SM2 exhaust air damper).**
The air dampers and the electric actuators are not included in the delivery set and are available as specially ordered accessories. For connection of the air dampers use an electric actuator of LF 230 BELIMO type rated for 230 V power voltage and on/off control logic.

Connect the damper electric actuators to the terminals 12 and 13.

**Wiring diagram for external control units:**

![Wiring Diagram](image-url)
**UNIT CONTROL**

**USING SOFTWARE**

To operate the unit using the pre-installed software connect the unit to a laptop or to a PC via a USB cable with the Type A and Type B contact sockets. The USB cable is not included into delivery set.

The software enables editing the factory parameters:

<table>
<thead>
<tr>
<th>Parameter</th>
<th>Factory settings</th>
<th>Control range</th>
</tr>
</thead>
<tbody>
<tr>
<td>Zero speed (off) [%]</td>
<td>0</td>
<td>0 — 100</td>
</tr>
<tr>
<td>Minimum speed [%]</td>
<td>40</td>
<td>0 — 100</td>
</tr>
<tr>
<td>Medium speed [%]</td>
<td>70</td>
<td>0 — 100</td>
</tr>
<tr>
<td>High speed [%]</td>
<td>100</td>
<td>0 — 100</td>
</tr>
<tr>
<td>Speed with the closed contact of an external control device [%]</td>
<td>100</td>
<td>0 — 100</td>
</tr>
<tr>
<td>Filter replacement periodicity [h]</td>
<td>2160 (3 months)</td>
<td>0 — 10000</td>
</tr>
<tr>
<td>Humidity set point [%]</td>
<td>60</td>
<td>30 — 80</td>
</tr>
</tbody>
</table>

The new software versions may have a wider list of editable parameters.

Setting, troubleshooting and upgrading of the software version is made by the Customer Service technician.

The software is available for download at our website: [http://www.ventilation-system.com/images/cat/812_2902_cat_file_lang.rar](http://www.ventilation-system.com/images/cat/812_2902_cat_file_lang.rar)
 CONTROL PANEL

The unit is operated with the touch buttons on the wall-mounted control panel. The activated buttons is highlighted. The signal from the control panel is send to the control unit and the unit starts operation with a set operation mode. The control panel is not designed for standalone operation.

WARNING!
Fix the control panel in the operating position prior to using it. Do not press the touch buttons when the control panel is not fixed to avoid false speed activation! Quick short pressing of the touch buttons may result in the unit malfunction! Press the touch buttons clearly in a required sector to enable activation of required speed.

![Control panel diagram]

- **Touch button**
  - High speed
  - Medium speed
  - Low speed

- **Touch button**
  - Filter servicing
  - Bypass damper operation
  - Alarm indicator

Indication options during the unit shutdown:
- The touch panels are not highlighted on the display.
- The filter replacement indicator and the alarm indicator are highlighted in the respective conditions.

Unit activation:
Press a respective speed touch button. The pressed touch button is highlighted. The unit starts operating with a set speed.

Speed changeover:
Press a required non-active speed buttons once. The pressed touch button is highlighted. The unit starts operating with a set speed.

Unit deactivation:
Press the activated speed button once to turn the unit off.

Summer cooling mode:
Press once a respective touch button. The pressed touch button is highlighted. The bypass damper is opened and the unit starts operation in the summer cooling mode. Each consistent pressing will change the unit status and will be saved in the unit memory.

Filter maintenance:
After elapsing the set filter replacement period the respective indicator is highlighted to indicate the need of the filter cleaning or replacement. To reset the motor meter after replacement or cleaning of the filters press and hold the filter replacement indicator 5 seconds. After resetting the motor meter the filter replacement indicator goes down. To set the filter replacement periodicity using the software follow the filter maintenance description.

Alarm:
The alarm indicator is highlighted in case of alarm. To reset the alarm follow the troubleshooting table.
MAINTENANCE

DISCONNECT THE UNIT FROM POWER MAINS PRIOR TO ANY MAINTENANCE OPERATIONS.

Maintenance operations of the unit are required 3-4 times per year. Maintenance includes regular cleaning and the following operations:

1. Filter maintenance (3-4 times per year).
   Clogged filters increase air resistance in the system and reduce supply air volume. The filters require cleaning not less than 3-4 times per year. Cleaning with a vacuum cleaner is allowed. After two consecutive cleanings filters must be replaced. Contact the unit Seller to purchase new filters.

   To replace or clean the filters disconnect the removable plates on the service side and remove the clogged filters. After cleaning install the new filters and fix the removable plates in the reverse order.

2. Heat exchanger maintenance (once per year).
   Some dust may accumulate on the heat exchanger even in case of regular maintenance of the filters. To maintain the high heat exchange efficiency, clean the heat exchanger regularly using a vacuum cleaner narrow nozzle.

   The heat exchanger is connected with the drain pan by the fixing bands that should be removed only in case of heat exchanger replacement. The drain pan is fixed to the unit casing using three screws.

   To clean the heat exchanger pull it and the drain pan out, drain the water through the pipes, then flush the heat exchanger with warm detergent solution. After cleaning install the dry heat exchanger with the drain pan back to the unit.
3. Fan maintenance (once per year).
   Even in case of regular maintenance of the filters, some dust may accumulate inside the fans and reduce the unit performance and supply air volume. Clean the fans with a cloth or a soft brush. No water and abrasive detergent, sharp objects or solvents are allowed for cleaning to prevent the impeller damage.

4. Condensate drainage maintenance (once per year).
   The drain pipes may get clogged with the extracted particles. Pour some water inside the drain pan to check the pipe for clogging. Clean the U-trap and the drain line if required.

5. Ductwork system maintenance (once in 5 years).
   Even in case of fulfilling all the listed maintenance guidelines, some dust can get accumulated inside the air ducts and reduce the unit performance. Ductwork maintenance means regular cleaning or replacement.

6. Control unit maintenance (as required).
   The control unit maintenance must be performed by an expert qualified for unassisted operations with electrical installations with the voltage up to 1000 V after careful reading of the user's manual.

### TROUBLESHOOTING

<table>
<thead>
<tr>
<th>Problem</th>
<th>Possible reasons</th>
<th>Troubleshooting</th>
</tr>
</thead>
<tbody>
<tr>
<td>The fan(s) do(es) not get started.</td>
<td>No power supply.</td>
<td>Make sure the power supply line is connected correctly, otherwise troubleshoot a connection error.</td>
</tr>
<tr>
<td>Low air flow.</td>
<td>Filters, fans or the heat exchanger are contaminated.</td>
<td>Clean or replace the filters; clean the fan(s) and the heat exchanger.</td>
</tr>
<tr>
<td></td>
<td>The ventilation system is contaminated or damaged.</td>
<td>Check the air ducts for contaminations and damages.</td>
</tr>
<tr>
<td>Noise, vibration.</td>
<td>The impellers are contaminated.</td>
<td>Clean the impellers.</td>
</tr>
<tr>
<td></td>
<td>The fan or casing screw connection is loose.</td>
<td>Tighten the mounting screws.</td>
</tr>
<tr>
<td>Alarm indication on the control panel display.</td>
<td>The drainage system is soiled, damaged or wrong arranged.</td>
<td>Clean the drainage system. Check the drain line slope angle. Make sure that the U-trap is filled with water and the drain pipes are frost protected.</td>
</tr>
</tbody>
</table>

### STORAGE AND TRANSPORTATION RULES

Store the unit in the manufacturer's original packing box in a dry ventilated premise at ambient temperatures from +5 °C (+41 °F) up to +40 °C (104 °F). Storage environment must not contain aggressive vapours and chemical mixtures provoking corrosion, insulation and sealing deformation.

The unit can be carried in the original packing by any mode of transport provided proper protection against precipitation and mechanical damage.

Use suitable hoist machinery for handling and storage operations to prevent possible damage to the unit.

Follow the handling requirements applicable for the particular type of cargo.

Avoid sharp blows, scratches or rough handling during loading and unloading.

Do not expose the unit to abrupt temperature changes.

Such changes can lead to condensation of moisture inside the unit and performance disturbance during activation of the unit. Prior to the initial power-up after transportation at subzero temperatures allow the unit to warm up at room temperature for at least 2 hours.
MANUFACTURER’S WARRANTY

The manufacturer hereby warrants normal operation of the unit for 24 months after the retail sale date provided the user’s observance of the transportation, storage, mounting and operation regulations.

Should any malfunctions occur in the course of the unit operation through the Manufacturer’s fault during the guaranteed period of operation the user is entitled to elimination of faults by the manufacturer by means of warranty repair at the factory free of charge.

The warranty repair shall include works specific to elimination of faults in the unit operation to ensure its intended use by the user within the guaranteed period of operation. The faults are eliminated by means of replacement or repair of the unit components or a specific part of such unit component.

The warranty repair does not include:
- Routine technical maintenance;
- Unit installation / dismantling;
- Unit setup.

To benefit from warranty repair the user must provide the unit, the user’s manual with the purchase date stamp and the payment document certifying the purchase.

The unit model must comply with the one stated in the user’s manual.

Contact the Seller for warranty service.

The manufacturer’s warranty does not apply to the following cases:
- User’s failure to submit the unit with the entire delivery package as stated in the user’s manual including submission with missing component parts previously dismounted by the user.
- Mismatch of the unit model and the brand name with the information stated on the unit packing and in the user’s manual.
- User’s failure to ensure timely technical maintenance of the unit.
- External damage to the unit casing (excluding external modifications as required for installation) and internal components caused by the user.
- Redesign or engineering changes to the unit.
- Replacement and use of any assemblies, parts and components not approved by the manufacturer.
- Unit misuse.
- User’s violation of the unit installation regulations.
- User’s violation of the unit control regulations.
- Unit connection to the power mains with a voltage different from the one stated in the user’s manual.
- Discretionary repair of the unit by the user.
- Unit repair by any persons without the manufacturer’s authorization.
- Expiration of the unit warranty period.
- User’s violation of the unit transportation regulations.
- User’s violation of the unit storage regulations.
- Wrongful actions against the unit committed by third parties.
- Unit breakdown due to circumstances of insuperable force (fire, flood, earthquake, war, hostilities of any kind, blockades).
- Missing seals if provided by the user’s manual.
- Failure to submit the user’s manual with the unit purchase date stamp.
- Missing payment document certifying the unit purchase.

FOLLOWING THE REGULATIONS STIPULATED HEREIN WILL ENSURE A LONG AND TROUBLE-FREE OPERATION OF THE UNIT.

USERS’ WARRANTY CLAIMS SHALL BE SUBJECT TO REVIEW ONLY UPON PRESENTATION OF THE UNIT, THE PAYMENT DOCUMENT AND THE USER’S MANUAL WITH THE PURCHASE DATE STAMP.
**ACCEPTANCE CERTIFICATE**

<table>
<thead>
<tr>
<th>Unit Type</th>
<th>Heat recovery air handling unit</th>
</tr>
</thead>
<tbody>
<tr>
<td>Model</td>
<td>VUT __________ P __B EC A14</td>
</tr>
<tr>
<td>Serial Number</td>
<td></td>
</tr>
<tr>
<td>Manufacture Date</td>
<td></td>
</tr>
</tbody>
</table>

Is compliant with the technical specifications and is recognized as serviceable.


This certificate is issued following test carried out on samples of the product referred to above.

**SELLER INFORMATION**

<table>
<thead>
<tr>
<th>Seller</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Address</td>
<td></td>
</tr>
<tr>
<td>Phone Number</td>
<td></td>
</tr>
<tr>
<td>E-mail</td>
<td></td>
</tr>
<tr>
<td>Purchase Date</td>
<td></td>
</tr>
</tbody>
</table>

This is to certify acceptance of the complete unit delivery with the user's manual. The warranty terms are acknowledged and accepted.

**INSTALLATION CERTIFICATE**

Heat recovery air handling unit VUT __________ P __B EC A14 has been connected to power mains pursuant to the requirements stated in the present user's manual.

<table>
<thead>
<tr>
<th>Company Name</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Address</td>
<td></td>
</tr>
<tr>
<td>Phone Number</td>
<td></td>
</tr>
<tr>
<td>Installation</td>
<td></td>
</tr>
<tr>
<td>Technician's Full Name</td>
<td></td>
</tr>
<tr>
<td>Installation Date</td>
<td></td>
</tr>
</tbody>
</table>

The unit has been installed in accordance with the provisions of all the applicable local and national construction, electrical and technical codes and standards. The unit operates normally as intended by the manufacturer.

**WARRANTY CARD**

<table>
<thead>
<tr>
<th>Unit Type</th>
<th>Heat recovery air handling unit</th>
</tr>
</thead>
<tbody>
<tr>
<td>Model</td>
<td>VUT __________ P __B EC A14</td>
</tr>
<tr>
<td>Serial Number</td>
<td></td>
</tr>
<tr>
<td>Manufacture Date</td>
<td></td>
</tr>
<tr>
<td>Purchase Date</td>
<td></td>
</tr>
<tr>
<td>Warranty Period</td>
<td></td>
</tr>
<tr>
<td>Seller</td>
<td></td>
</tr>
</tbody>
</table>

Seller's Stamp