ECO-VENTILATION

Fresh air in your house!

Micra

Single room air handling units with heat recovery

Fresh air
Energy saving
Compact size

Versatile
Easy mounting
Low noise
Industrial and commercial ventilation
(Catalogue no. 1)
Industrial and commercial ventilation components - fans for round and rectangular ducts, sound-insulated, axial and roof fans, air handling units with heat recovery, air heating units, accessories.

Energy saving ventilation
Air handling units
(Catalogue no. 2)
Energy saving supply and exhaust units and air handling units with heat recovery with air capacity up to 6500 m³/h.

Smoke extraction and ventilation
(Catalogue no. 5)
Smoke protection systems of buildings and premises.

Domestic ventilation
(Catalogue no. 6)
Domestic ventilation: fans, mono-pipe exhaust kitchen and bathroom fans, air distribution units, air ducts and fittings, access doors, ventilation kits.

Air distribution units
(Catalogue no. 9)
Plastic and metal air distribution products (grilles, disk valves, diffusers, etc.) for ventilation, air conditioning and heating.

Access doors
(Catalogue no. 10)
Plastic and metal access doors for accessing concealed equipment and utility lines. Special offers for ceramic tiles.

Spirally wound ducts
(Catalogue no. 13)
SPIROVENT spiral seam vent ducts and fittings of 100 to 1600 mm diameter.

Flexible ducts and fittings for ventilation, air conditioning and heating
(Catalogue no. 14)
Flexible and semi-flexible air ducts made of polymeric materials, aluminium, galvanized or stainless steel, metal fittings for ventilation, air conditioning, heating, gas handling and abrasive particles aspiration.
Air handling units
AirVENTS
(Catalogue no. 3)
Energy saving air handling units with air capacity up to 40,000 m³/h, for use in large residential, industrial and commercial objects.

Energy saving ventilation
Geothermal systems
GEO VENTS
(Catalogue no. 4)
Energy saving system GEO VENTS with use of the earth's surface layers heat. High ventilation system energy efficiency and low operating costs.

Domestic fans
(Catalogue no. 7)
Domestic fans with air capacity up to 365 m³/h with extra functions: timer, humidity sensor, motion sensor, etc. Applied for premises up to 30 m².

VENTS VN
Mono-pipe exhaust ventilation
(Catalogue no. 8)
Exhaust ventilation in houses with mono-pipe ventilation system based on VENTS VN fans.

Energy saving ventilation. Single room energy recovery ventilators MICRA.
(Catalogue no. 11)
MICRA single room ventilators with energy regeneration for efficient ventilation and lowest investments in ready-built and brand new premises.

VENTS presentation catalogue
(Catalogue no. 12)
VENTS mission is to bring fresh air to your house and surround you with the world of comfortable microclimate.

Round and flat PVC ducting
(Catalogue no. 15)
Flat and round PVC ducts PLASTIVENT for ventilation of residential, office and commercial premises and connection of exhaust ventilation equipment (kitchen extractors, hoods, exhaust boxes, etc). Wide product range of fittings.

Energy saving ventilation. Single room energy recovery ventilators TwinFresh.
(Catalogue no. 16)
Single room reverse ventilators with energy regeneration TwinFresh for efficient ventilation and lowest investments in ready-built and brand new premises.
Micra 100 is a single-room energy-efficient supply and exhaust unit intended for decentralised ventilation of residential and commercial spaces as well as apartments and houses. This air handling unit is ideally suited for creating simple yet highly efficient ventilation systems in newly erected and renovated spaces without requiring ducting installation.

**FEATURES**
- Efficient solution for supply and exhaust ventilation of enclosed spaces
- Electric pre-heater or post-heater variant available for cold climate conditions
- Heat exchanger with an enthalpy membrane variant available for humid and hot climate conditions
- Low-energy EC fans
- Excellent noise control (25-38 dBA)
- Supply air purification ensured by two built-in G4 and F8 filters (optional H13)
- Upgradeable with an exhaust duct to provide air extraction from the bathroom
- Easy installation
- Compact size
- Modern design

**CASING**
Polymer coated metal casing decorated with an acrylic front panel. Thanks to the modern design the unit can seamlessly blend with most any interior design. Heat and sound insulation is ensured by a layer of 10 mm cellular synthetic rubber. The front panel provides convenient access for filter maintenance and has a lock for extra security. The unit has two ø 100 mm inlet and outlet pipes for fresh air intake and stale air extraction outside. The third ø 100 mm pipe (included) can be additionally fitted to the unit to connect the exhaust air duct from the bathroom.

**AIR DAMPERS**
The unit is equipped with supply and exhaust air dampers which activate automatically to prevent drafts while the unit is off.
AIR FILTRATION

Supply air cleaning is provided by G4 and F8 panel filters (PM2.5 > 75%). To meet more stringent air purity requirements an F8 filter can be replaced with an H13 (PM2.5 > 95%) (purchased separately). Extract air is cleaned by a panel-type G4 filter.

FANS

The units feature efficient electronically commutated (EC) motors with external rotor and impellers with forward curved blades. These state-of-the-art motors offer the very best in energy efficiency today. EC motors are characterised with high performance and optimum control across the entire speed range. In addition to that the efficiency of electronically commutated motors reaches very impressive levels of up to 90%.

NE MICRA 100 HEATER FOR CONDENSATE FREEZING PROTECTION (OPTIONAL)

Operation in a cold climate may result in condensate freezing in the exhaust air duct and the external hood. Therefore, it is recommended to install the NE Micra 100 heater (purchased separately) to prevent icing.

PRE-HEATING

Micra 100 units are equipped with an electric pre-heater which protects the heat exchanger from freezing.

POST-HEATING

Micra 100 E1 units feature an electric post-heater to raise the supply air temperature as necessary.

HEAT EXCHANGER

Micra 100 units are equipped with a counter-flow heat exchanger with a polystyrene core.

In the cold season the extract air heat is captured and transferred to the supply air stream which reduces the ventilation-generated heat losses. However, this process may be associated with condensation which is collected in a special drain pan and evacuated outside via the exhaust air duct.

In the warm season the ambient air heat is transferred to the exhaust air stream. This allows for a considerable reduction of the supply air temperature which, in turn, reduces the air conditioning load.

Micra 100 ERV units are equipped with a counter-flow heat exchanger with an enthalpy membrane.

In the cold season the extract air heat and moisture are transferred to the supply air stream through the enthalpy membrane reducing the heat losses from ventilation.

Consequently, it is the ambient air heat and moisture transferred to the exhaust air stream through the enthalpy membrane in the warm season. This allows for a considerable reduction of the supply air temperature and humidity which, in turn, reduces the air conditioning load.
**OPERATING LOGIC**

**Freeze protection**
There are two types of freeze protection available to protect the heat exchangers in the cold season.
Micra 100 features an exhaust air temperature sensor downstream of the heat exchanger which disables the supply fan to let the warm exhaust air raise the heat exchanger temperature. Once the heat exchanger temperature has returned to normal, the supply fan is re-enabled and the unit reverts to normal operation.

Micra 100 E units are equipped with an electric pre-heater which warms up the supply air upstream of the heat exchanger to prevent its freezing. These features ensure a continuous balanced air exchange regardless of ambient air temperature variations.

**Control**
The units are equipped with a control panel. Remote control panels are supplied as standard.

**CONTROL AND AUTOMATION**

Following functions are available:

<table>
<thead>
<tr>
<th>Function</th>
<th>Micra 100</th>
<th>Micra 100 E</th>
<th>Micra 100 E1</th>
</tr>
</thead>
<tbody>
<tr>
<td>Speed selection</td>
<td>+</td>
<td>+</td>
<td></td>
</tr>
<tr>
<td>Filter replacement indication</td>
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<td></td>
</tr>
<tr>
<td>Alarm indication</td>
<td>+</td>
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<tr>
<td>Speed setup</td>
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<td>+</td>
<td></td>
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<tr>
<td>Timer</td>
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<td>+</td>
<td></td>
</tr>
<tr>
<td>Weekly schedule</td>
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<td>+</td>
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</tr>
<tr>
<td>Post-heating enabled/disabled</td>
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<td>+</td>
<td></td>
</tr>
<tr>
<td>Supply air temperature setup</td>
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<td>+</td>
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</table>
## TECHNICAL DATA

### Micra 100

<table>
<thead>
<tr>
<th>Technical data</th>
<th>Micra 100</th>
<th>Micra 100 E</th>
<th>Micra 100 E1</th>
</tr>
</thead>
<tbody>
<tr>
<td>Maximum air capacity [m³/h]</td>
<td>30 60 100</td>
<td>30 60 100</td>
<td>30 60 100</td>
</tr>
<tr>
<td>Unit voltage [V/50 (60) Hz]</td>
<td>1 ~ 110-240</td>
<td>1 ~ 220-240</td>
<td>1 ~ 220-240</td>
</tr>
<tr>
<td>Maximum fan power [W]</td>
<td>12 21 45</td>
<td>12 21 45</td>
<td>12 21 45</td>
</tr>
<tr>
<td>Sound pressure level at 3 m(1m) distance [dBA]</td>
<td>13 27 39</td>
<td>13 27 39</td>
<td>13 27 39</td>
</tr>
<tr>
<td>Electric pre-heater power [W]</td>
<td>- 600</td>
<td>- 350</td>
<td>- 308 1.94</td>
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<tr>
<td>Electric post-heater power [W]</td>
<td>- -</td>
<td>-</td>
<td>-</td>
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<tr>
<td>Maximum unit current (without an electric heater) [A]</td>
<td>0.35 0.35</td>
<td>0.35</td>
<td>0.35</td>
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<tr>
<td>Maximum unit current (with an electric heater) [A]</td>
<td>- 3.08</td>
<td>1.94</td>
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<tr>
<td>Transported air temperature [°C]</td>
<td>from -25 up to +50</td>
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<td></td>
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<tr>
<td>Casing material</td>
<td>Painted steel</td>
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<tr>
<td>Insulation</td>
<td>foam rubber, 10 mm</td>
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<tr>
<td>Heat recovery efficiency [%]</td>
<td>96 92 87</td>
<td>96 92 87</td>
<td>96 92 87</td>
</tr>
<tr>
<td>Heat exchanger type</td>
<td>counter-flow</td>
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<td>Supply filter</td>
<td>G4, F8</td>
<td>G4, F8</td>
<td>G4</td>
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<tr>
<td>Extract filter</td>
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<td>G4</td>
</tr>
<tr>
<td>Connected air duct diameter [mm]</td>
<td>Ø 100</td>
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<tr>
<td>Weight [kg]</td>
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<td>28</td>
<td>27.8</td>
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### Micra 100 ERV

<table>
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<th>Micra 100 ERV</th>
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<th>Micra 100 E1 ERV</th>
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<tr>
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<td>30 60 100</td>
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<td>1 ~ 220-240</td>
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<td>Electric pre-heater power [W]</td>
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<td>-</td>
<td>-</td>
</tr>
<tr>
<td>Electric post-heater power [W]</td>
<td>- 350</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td>Maximum unit current (without an electric heater) [A]</td>
<td>0.35 0.35</td>
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<td></td>
<td></td>
</tr>
<tr>
<td>Insulation</td>
<td>foam rubber, 10 mm</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Heat recovery efficiency [%]</td>
<td>90 86 80</td>
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<tr>
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<td>counter-flow</td>
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<td>counter-flow</td>
</tr>
<tr>
<td>Heat exchanger material</td>
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<tr>
<td>Supply filter</td>
<td>G4, F8</td>
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<tr>
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</tbody>
</table>
APPLICATION OPTIONS

Each space requiring proper ventilation is equipped with a single or several Micra 100 units. A single unit is capable of ensuring efficient ventilation in spaces with floor area up to 100 m². Micra 100 units can be upgraded with a bathroom exhaust air duct. To enable such a configuration the units can be additionally equipped with the optional ø 100 mm fitting pipe (supplied as standard).
Micra 100 deployment in a compact residential space.
Micra 100 application in an office space
<table>
<thead>
<tr>
<th>Name</th>
<th>Picture</th>
<th>Description</th>
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<tbody>
<tr>
<td>MK Micra 100 white</td>
<td></td>
<td>Mounting kit: Two plastic Ø 100 mm air ducts 500 mm long Outdoor box (white) Cardboard template</td>
</tr>
<tr>
<td>MK Micra 100 chrome</td>
<td></td>
<td>Mounting kit: Two plastic Ø 100 mm air ducts 500 mm long Outdoor box made of hairline stainless steel Cardboard template</td>
</tr>
<tr>
<td>NB Micra 100 white</td>
<td></td>
<td>Outdoor box (white)</td>
</tr>
<tr>
<td>NB Micra 100 chrome</td>
<td></td>
<td>Outdoor box made of hairline stainless steel</td>
</tr>
<tr>
<td>NE Micra 100</td>
<td></td>
<td>Heater to prevent condensate freezing in the drain pipe and the outdoor box</td>
</tr>
<tr>
<td>SF 193x158x18 G4 PPI</td>
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<td>G4 filter</td>
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<tr>
<td>SF 193x158x47 F8</td>
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<td>F8 filter</td>
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<tr>
<td>SF 193x158x47 F8 C</td>
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<td>F8 carbon filter</td>
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<td>SF 193x158x47 H13</td>
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<td>H13 HEPA filter</td>
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<td>HR-S</td>
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<td>Regin HR-S humidity sensor</td>
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<tr>
<td>CO2-1</td>
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<td>CO₂ sensor with air quality indication and On/Off button</td>
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<tr>
<td>CO2-2</td>
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<td>CO₂ sensor</td>
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<tr>
<td>VL R6 366/157</td>
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<td>Summer block</td>
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</table>
MICRA SINGLE ROOM AIR HANDLING UNITS WITH HEAT RECOVERY

VIENTALATION SYSTEMS
www.ventilation-system.com

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05/2017