AC / EC Transformer Fans

The engineer's choice

ebmpapst
The new AC / EC transformer fans from ebm-papst

Axial fans with external-rotor motors in AC and EC technology are our world. What is new is that they are now used for transformer cooling. But then again, why not? After all, efficiency, low noise and total reliability are called for in such an application, too!

And so our new AC / EC transformer fans are first choice with project and design engineers, not only when it comes to transformer cooling.

Robust, quiet and speed-controlled

The new transformer fans with asynchronous and EC motor drives are now also available for the more demanding use with power transformers. The line goes up without gap from size 450 mm to 990 mm in outer diameter.

The transformer fans consist of the components motor impeller, motor support structure and duct nozzle.

Depending on the size, the motor impeller is made up of either an AC or EC external-rotor motor with screwed on hybrid blades made of die-cast aluminium or plastic / aluminium.

The motor support structure is on the suction side. This also makes for compliance with protection against accidental contact.

The duct nozzle is made of dip galvanised sheet steel. On the pressure side, there is a circumferential flange that ensures the fan can be directly screwed onto the oil radiator.

These new fans with their excellent design and functionality are the result of intensive research and the expertise that comes with years of pioneering developments, supported by comprehensive computations and simulations especially with respect to long service life and corrosion resistance.
The new AC / EC transformer fans from ebm-papst

Technical parameters & scope

AC size 450
AC size 500
AC size 630
AC size 800
EC size 710
EC size 800
EC size 990
Accessories
Electrical connections

Distributors, agents & subsidiaries
Technical parameters & scope

High standards for all ebm-papst products

Here at ebm-papst, we constantly strive to further improve our products in order to be able to offer you the best possible product for your application. Careful monitoring of the market ensures that technical innovations are reflected in the improvements of our products. Based on the technical parameters listed below and the ambience you want our product to operate in, we here at ebm-papst can always work out the best solution for your specific application.

General performance parameters

Any deviations from the technical data and parameters described here are listed on the product-specific data sheet.

Operating mode

If no other operating mode is specified on the product-specific data sheet, the operating mode is taken to be continuous operation (S1).

Insulation class (acc. to EN 60335)

On principle, our products comply with insulation class F. Products with other insulation class are especially marked in the product-specific data sheets.

Protection class

In general, our products comply with protection class I (acc. to EN 50178 and EN 60335-1). Products with other protection class are specially indicated in the product-specific data sheets.

Type of protection

The type of protection applying to each product (according to DIN EN 60034-5) depends on the mounting position and is listed together with the relevant mounting position in the product-specific data sheet.

Drilled condensate discharges / mounting position

Condensate discharges are drilled depending on the mounting position. The product-specific data sheets provide information on this. Please make sure that the drilled condensate discharges are not obstructed or closed. Transformer fans for forced cooling of oil radiators are conventionally mounted with the air flowing in either horizontal or vertical (blowing upwards) direction. This is why a drilled condensate discharge is provided for in the stator flange.

Service life

The service life of ebm-papst products depends on two major factors:
- the service life of the insulation system
- the service life of the bearing system

The service life of the insulation system mainly depends on voltage level, temperature and ambient conditions, such as humidity and condensation.

The service life of the bearing system depends mainly on the thermal load on the bearing.

The majority of our products use maintenance-free ball bearings for any mounting position possible.

The service life L10 of the ball bearings can be taken as ca. 40,000 operating hours at an ambient temperature of 40 °C, yet this estimate can vary according to the actual ambient conditions.

We gladly provide you with a lifetime calculation taking into account your specific operating conditions.

Thermal protection / motor protection

Our ebm-papst motors for transformer cooling are protected in accordance with the relevant directives.

AC fans feature thermal overload protection. The user is asked to undertake the proper action to read this T.O.P. and to make sure the fans are disconnected from the mains in case an alarm is given.

With EC fans, the motor is thermally protected as well, including electronic reading and assessing, and the electronics are protected via current limiter.
Sound power level
All acoustic data is established in keeping with DIN 45635 and ISO 3744/3745 to accuracy class 2 and given as A-weighted. To measure sound power level Lw 10 microphones are distributed on an enveloping surface on the suction side of the fan under test (measuring set-up as per DIN 45635 T38).

Measuring conditions
ebm-papst products are measured under the following terms and conditions:
- axial fans in the wall ring and without guard grille
- Depending on the mounting situation, there can be deviations from the characteristics as specified.

Direction of air flow
The direction of air flow is given as follows:

System of units
All technical figures are given in SI units.
**Mechanical strain / performance parameters**

All ebm-papst products are subjected to comprehensive tests complying with the normative specifications. In addition to this, the tests also reflect the vast experience and expertise of ebm-papst.

**Vibration test**

Vibration tests are carried out in compliance with
- vibration test in operation according to DIN IEC 68, parts 2-4
- vibration test at standstill according to DIN IEC 68, parts 2-4

**Shock load**

Shock load tests are carried out in compliance with
- shock load according to DIN IEC 68, parts 2-27

**Balancing quality**

Testing the balancing quality is carried out in compliance with
- residual imbalance according to DIN ISO 1940
- standard balancing quality level G 6.3 (corresponding to 30 g x mm/kg)

Should you require a higher balancing quality level for your specific application, please let us know and specify this when ordering your product.

**Chemo-physical strain / performance parameters**

For information on chemo-physical strain, please turn to our brochure “Protecting fans against water and the elements”.

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*Left: Climate cabinet  
Right: Salt spray test equipment*
Legal and normative directives
The products described in this catalogue are designed, developed and produced in keeping with the standards in place for the relevant product and, if known, the conditions governing the relevant fields of application.

Standards
The AC products described here comply to EN 60034-1. EC products are in keeping with the applicable specific standard.

EMC
In general, our EC products comply with the following EMC standards:
- interference emission EN 61000-6-3
- interference immunity EN 61000-6-2
- harmonics EN 61000-3-2/3
Wherever other standards apply, this is indicated in the data sheets. Complying with the EMC standards has to be established on the final appliance, as different mounting situations can result in modified and changed EMC properties.

Leakage current
< 3.5 mA acc. to EN 60950-1
Measuring according to fig. D.1 corresponding to IEC 60990 fig. 4

Approvals
In case you require a specific approval for your ebm-papst product (VDE, UL, GOST, CCC, CSA, etc. please let us know. Most of our products can be supplied with the relevant approval. For further and more detailed information on the specific approvals, simply turn to the data sheets of the respective products.
AC transformer fans
Ø 450, 50 Hz

- Material:
  - Guard grille made of steel, zinc-plated and plastic coated, RAL 9006
  - Wall ring made of sheet steel, hot-dip galvanised and plastic coated, RAL 9006
  - Asynchronous external-rotor motor made of die-cast aluminium, varnished, RAL 9005
  - Terminal box made of die-cast aluminium, varnished, RAL 9005
- Direction of air flow: “A”
- Direction of rotation: clockwise, seen on rotor
- Type of protection: IP 54 (according to EN 60529)
- Insulation class: “F”
- Mounting position: shaft horizontal or rotor on top
- Condensate discharges: in the stator flange
- Operating mode: Continuous operation (S1)
- Bearings: Maintenance-free ball bearings

<table>
<thead>
<tr>
<th>Type</th>
<th>Motor</th>
<th>Nominal voltage</th>
<th>Air flow</th>
<th>Frequency</th>
<th>Speed/min</th>
<th>Power input</th>
<th>Max. back pressure</th>
<th>Mass</th>
</tr>
</thead>
<tbody>
<tr>
<td>W4D 450</td>
<td>M4D110-6F</td>
<td>400 A, 50 Hz</td>
<td>7210 m³/h</td>
<td>1380 rpm</td>
<td>410 W</td>
<td>9,40 A</td>
<td>115 Pa</td>
<td>13.5</td>
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</table>

Nominal data

Characteristics

- Blade angle
- Nominal voltage
- Speed
- Power input
- Max. back pressure
- Mass

Subject to alterations
- Motor protection: TOP brought out (on terminal strip)
- Cable exit: lateral via terminal box
- Protection class: I (according to EN 61800-5-1)
- Product conforming to standard: CE
- Approvals: VDE (according to EN 60034)
AC transformer fans
Ø 450, 60 Hz

- Material:
  - Guard grille made of steel, zinc-plated and plastic coated, RAL 9006
  - Wall ring made of sheet steel, hot-dip galvanised and plastic coated, RAL 9006
  - Asynchronous external-rotor motor made of die-cast aluminium, varnished, RAL 9005
  - Terminal box made of die-cast aluminium, varnished, RAL 9005

- Direction of air flow: "A"
- Direction of rotation: clockwise, seen on rotor
- Type of protection: IP 54 (according to EN 60529)
- Insulation class: "F"
- Mounting position: shaft horizontal or rotor on top
- Condensate discharges: in the stator flange
- Operating mode: Continuous operation (S1)
- Bearings: Maintenance-free ball bearings

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<th>M40110-6F</th>
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<tr>
<td>W4D 450</td>
<td>M40110-6F</td>
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subject to alteration

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</table>
- Motor protection: TOP brought out (on terminal strip)
- Cable exit: lateral via terminal box
- Protection class: I (according to EN 61800-5-1)
- Product conforming to standard: CE
- Approvals: VDE (according to EN 60034)
AC transformer fans
Ø 500, 50 Hz

- Material: Guard grille made of steel, zinc-plated and plastic coated, RAL 9006
  Wall ring made of sheet steel, hot-dip galvanised and plastic coated, RAL 9006
  Asynchronous external-rotor motor made of die-cast aluminium, varnished, RAL 9005
  Terminal box made of die-cast aluminium, varnished, RAL 9005
- Direction of air flow: “A”
- Direction of rotation: clockwise, seen on rotor
- Type of protection: IP 54 (according to EN 60529)
- Insulation class: “F”
- Mounting position: shaft horizontal or rotor on top
- Condensate discharges: in the stator flange
- Operating mode: Continuous operation (S1)
- Bearings: Maintenance-free ball bearings

Nominal data

<table>
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<tr>
<th>Type</th>
<th>Motor</th>
<th>WAC</th>
<th>Hz</th>
<th>m³/h</th>
<th>min⁻¹</th>
<th>W</th>
<th>A</th>
<th>A</th>
<th>Pa</th>
<th>°C</th>
<th>kg</th>
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<td>50</td>
<td>9590</td>
<td>1380</td>
<td>620</td>
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<td>Δ</td>
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<td>940</td>
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<td>Δ</td>
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Characteristics

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<tr>
<td>1500</td>
<td>855</td>
<td>1,44</td>
<td>78</td>
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</table>

Subject to alteration
- Motor protection: TOP brought out (on terminal strip)
- Cable exit: lateral via terminal box
- Protection class: I (according to EN 61800-5-1)
- Product conforming to standard: CE
- Approvals: VDE (according to EN 60034)

<table>
<thead>
<tr>
<th>Selection</th>
<th>Blade angle</th>
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<td>W40500</td>
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<td>W60500</td>
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<td>0°</td>
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<tr>
<td>W80500</td>
<td>&quot;A&quot;</td>
<td>0°</td>
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Guard grilles p. 28
Back connections p. 29
**AC transformer fans**

Ø 500, 60 Hz

- Material: Guard grille made of steel, zinc-plated and plastic coated, RAL 9006
  Wall ring made of sheet steel, hot-dip galvanised and plastic coated, RAL 9006
  Asynchronous external-rotor motor made of die-cast aluminium, varnished, RAL 9005
  Terminal box made of die-cast aluminium, varnished, RAL 9005
- Direction of air flow: "A"
- Direction of rotation: clockwise, seen on rotor
- Type of protection: IP 54 (according to EN 60529)
- Insulation class: "F"
- Mounting position: shaft horizontal or rotor on top
- Condensate discharges: in the stator flange
- Operating mode: Continuous operation (S1)
- Bearings: Maintenance-free ball bearings

### Nominal data

<table>
<thead>
<tr>
<th>Type</th>
<th>Motor</th>
<th>W</th>
<th>Hz</th>
<th>m³/h</th>
<th>min⁻¹</th>
<th>W</th>
<th>A</th>
<th>A</th>
<th>Pa</th>
<th>°C</th>
<th>kg</th>
</tr>
</thead>
<tbody>
<tr>
<td>W4D500</td>
<td>M4D110-DF</td>
<td>480 Δ</td>
<td>60</td>
<td>11300</td>
<td>1620</td>
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<td>150</td>
<td>-40...+50</td>
<td>17,1</td>
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<tr>
<td>W6D500</td>
<td>M6D110-DF</td>
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<td>60</td>
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### Characteristics

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<th>n [min⁻¹]</th>
<th>P₁ [W]</th>
<th>I [A]</th>
<th>LwA [dB(A)]</th>
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Subject to alteration.
- Motor protection: TOP brought out (on terminal strip)
- Cable exit: lateral via terminal box
- Protection class: I (according to EN 61800-5-1)
- Product conforming to standard: CE
- Approvals: VDE (according to EN 60034)

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<th>Type</th>
<th>Blade angle</th>
<th>Direction of Air Flow</th>
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</table>

Cable gland M20
Material: Guard grille made of steel, zinc-plated and plastic coated, RAL 9006
Wall ring made of sheet steel, hot-dip galvanised and plastic coated, RAL 9006
Screened on fan blades made of sheet aluminium, varnished, RAL 9005
Terminal box made of die-cast aluminium, varnished, RAL 9005

Direction of air flow: "A"
Direction of rotation: clockwise, seen on rotor

Type of protection: IP 54 (according to EN 60529)
Insulation class: "F"
Mounting position: shaft horizontal or rotor on top
Condensate discharges: in the stator flange
Operating mode: Continuous operation (S1)
Bearings: Maintenance-free ball bearings

### Nominal data

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<td>19,5</td>
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### Characteristics

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<td>0,82</td>
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</table>

The data is subject to alterations.
- Motor protection: TOP brought out (on terminal strip)
- Cable exit: lateral via terminal box
- Protection class: I (according to EN 61800-5-1)
- Product conforming to standard: CE
- Approvals: VDE (according to EN 60034)
AC transformer fans
Ø 800, 50 Hz

- Material:
  - Guard grille made of steel, zinc-plated and plastic coated, RAL 9006
  - Wall ring made of sheet steel, hot-dip galvanised and plastic coated, RAL 9006
  - Screed on fan blades made of die-cast aluminium, varnished, RAL 9005
  - Asynchronous external-rotor motor made of die-cast aluminium, varnished, RAL 9005
  - Terminal box made of die-cast aluminium, varnished, RAL 9005

- Direction of air flow: "A"

- Direction of rotation: counter-clockwise, seen on rotor

- Type of protection: IP 54 (according to EN 60529)

- Insulation class: "F"

- Mounting position: shaft horizontal or rotor on top

- Condensate discharges: in the stator flange

- Operating mode: Continuous operation (S1)

- Bearings: Maintenance-free ball bearings

### Nominal data

<table>
<thead>
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<td>WID1800</td>
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<td>24780</td>
<td>930</td>
<td>1440</td>
<td>3,50</td>
<td>180</td>
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<td>42,5</td>
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<td>400 Y</td>
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<td>20780</td>
<td>785</td>
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<td>3,30</td>
<td>150</td>
<td>-40…+60</td>
<td>42,5</td>
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<td>MZD138-HF</td>
<td>400 Δ</td>
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<td>695</td>
<td>605</td>
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<td>215</td>
<td>-40…+65</td>
<td>38,5</td>
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<tr>
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<td>MZD138-HF</td>
<td>400 Y</td>
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<td>15520</td>
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<td>230</td>
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<td>144</td>
<td>-40…+65</td>
<td>38,5</td>
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### Characteristics

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</thead>
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<td>930</td>
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<td>180</td>
<td>-40…+60</td>
<td>42,5</td>
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<tr>
<td>785</td>
<td>1030</td>
<td>3,30</td>
<td>150</td>
<td>-40…+60</td>
<td>42,5</td>
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<tr>
<td>695</td>
<td>605</td>
<td>2,15</td>
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<td>-40…+65</td>
<td>38,5</td>
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<tr>
<td>460</td>
<td>230</td>
<td>1,96</td>
<td>144</td>
<td>-40…+65</td>
<td>38,5</td>
</tr>
</tbody>
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subject to alteration
- Motor protection: TOP brought out (on terminal strip)
- Cable exit: lateral via terminal box
- Protection class: I (according to EN 61800-5-1)
- Product conforming to standard: CE
- Approvals: VDE (according to EN 60034)

<table>
<thead>
<tr>
<th>Type</th>
<th>Selection</th>
<th>Blade angle</th>
<th>Direction of air flow</th>
<th>Guard grilles</th>
<th>Elect. connections</th>
</tr>
</thead>
<tbody>
<tr>
<td>W6D800</td>
<td>“A”</td>
<td>0°</td>
<td>W6D800-CJ01-00</td>
<td>p. 28</td>
<td>p. 29</td>
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<td>W8D800</td>
<td>“A”</td>
<td>0°</td>
<td>W8D800-CJ01-00</td>
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<td></td>
</tr>
<tr>
<td>WZD800</td>
<td>“A”</td>
<td>0°</td>
<td>WZD800-CM03-00</td>
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Guard grilles p. 28  Back connections p. 29
AC transformer fans
Ø 800, 60 Hz

- Material: Guard grille made of steel, zinc-plated and plastic coated, RAL 9006
  Wall ring made of sheet steel, hot-dip galvanised and plastic coated, RAL 9006
  Screeded on fan blades made of die-cast aluminium, varnished, RAL 9005
  Terminal box made of die-cast aluminium, varnished, RAL 9005
- Direction of air flow: "A"
- Direction of rotation: counter-clockwise, seen on rotor
- Type of protection: IP 54 (according to EN 60529)
- Insulation class: "F"
- Mounting position: shaft horizontal or rotor on top
- Condensate discharges: in the stator flange
- Operating mode: Continuous operation (S1)
- Bearings: Maintenance-free ball bearings

### Nominal data

<table>
<thead>
<tr>
<th>Type</th>
<th>Motor</th>
<th>WAC</th>
<th>Hz</th>
<th>m³/h</th>
<th>min⁻¹</th>
<th>W</th>
<th>A</th>
<th>A</th>
<th>Pa</th>
<th>°C</th>
<th>kg</th>
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<tr>
<td>W1D6000</td>
<td>M1D138-LA</td>
<td>480</td>
<td>A</td>
<td>60</td>
<td>21830</td>
<td>615</td>
<td>1070</td>
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<td>2,33</td>
<td>65</td>
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<td>Y</td>
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<td>10980</td>
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(subject to alteration)

### Characteristics

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<td>a (°C)</td>
<td>P1 (W)</td>
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(subject to alteration)
- Motor protection: TOP brought out (on terminal strip)
- Cable exit: lateral via terminal box
- Protection class: I (according to EN 61800-5-1)
- Product conforming to standard: CE
- Approvals: VDE (according to EN 60034)

<table>
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<th>Selection</th>
<th>Direction of Air Flow</th>
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<th>Type</th>
<th>Model</th>
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<tr>
<td>W80000</td>
<td>&quot;A&quot;</td>
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<td>W80000-CJ01</td>
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<td>W28000</td>
<td>&quot;A&quot;</td>
<td>0°</td>
<td>W28000-CM03</td>
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Cable gland M20

Guard grilles p. 28
Back connections p. 29
EC transformer fans
Ø 710

- Material:
  - Guard grille made of steel, zinc-plated and plastic coated, RAL 9006
  - Wall ring made of sheet steel, hot-dip galvanised and plastic coated, RAL 9006
  - Screeded on fan blades made of die-cast aluminium, varnished, RAL 9005
  - Stator and electronics housing made of die-cast aluminium, varnished, RAL 9005
  - Rotor made of sheet steel, varnished, RAL 9005

- Direction of air flow: "A"
- Direction of rotation: counter-clockwise, seen on rotor
- Type of protection: IP 54 (according to EN 60529)
- Insulation class: "F"
- Mounting position: shaft horizontal or rotor on top
- Condensate discharges: in the stator flange
- Operating mode: Continuous operation (S1)
- Bearings: Maintenance-free ball bearings

### Nominal data[^1]

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<th>Motor</th>
<th>W3O710</th>
<th>M3G150-IF</th>
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<td>Hz</td>
<td>m³/h</td>
<td>min⁻¹</td>
</tr>
<tr>
<td>380-480</td>
<td>50/60</td>
<td>23900</td>
<td>1240</td>
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</table>

[^1]: subject to alterations

### Characteristics

![Characteristics graph](graph.png)
- Technical features: control input 0-10 VDC / PWM, RS485 ebmBUS, alarm relay, integrated PID control, voltage supply for sensor, input for sensor 0-10 V respectively 4-20 mA, 0-10 V output for slave, PFC (passive), soft start, line undervoltage detection, phase failure detection
- Motor protection: motor current limitation, over-temperature protected electronics and motor, locked-rotor protection
- Protection class: I (according to EN 61800-5-1)
- Product conforming to standard: CE
- Approvals: GOST, UL and VDE are applied for
EC transformer fans
Ω 800

- Material: Guard grille made of steel, zinc-plated and plastic coated, RAL 9006
- Wall ring made of sheet steel, hot-dip galvanised and plastic coated, RAL 9006
- Screeded on fan blades made of die-cast aluminium, varnished, RAL 9005
- Stator and electronics housing made of die-cast aluminium, varnished, RAL 9005
- Rotor made of sheet steel, varnished, RAL 9005

- Direction of air flow: “A”
- Direction of rotation: counter-clockwise, seen on rotor
- Type of protection: IP 54 (according to EN 60529)
- Insulation class: “F”
- Mounting position: shaft horizontal or rotor on top
- Condensate discharges: in the stator flange
- Operating mode: Continuous operation (S1)
- Bearings: Maintenance-free ball bearings

### Nominal data

<table>
<thead>
<tr>
<th>Type</th>
<th>Motor</th>
<th>VAC</th>
<th>Hz</th>
<th>m³/h</th>
<th>min⁻¹</th>
<th>W</th>
<th>A</th>
<th>Pa</th>
<th>°C</th>
<th>kg</th>
</tr>
</thead>
<tbody>
<tr>
<td>W3G800</td>
<td>M3G150-IF</td>
<td>380</td>
<td>50/60</td>
<td>25400</td>
<td>980</td>
<td>1370</td>
<td>2,1</td>
<td>220</td>
<td>-40..+60</td>
<td>49,5</td>
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subject to alterations

### Characteristics

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<th>Frequency</th>
<th>Speed/rpm</th>
<th>Air flow</th>
<th>Power input</th>
<th>Current draw</th>
<th>Max. back pressure</th>
<th>Perm. amb. temp.</th>
<th>Mass</th>
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<td>12000</td>
<td>16000</td>
<td>20000</td>
<td>220</td>
<td>220</td>
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</table>

Subject to alterations

- (1) at 400 VAC

### Diagrams

- Characteristics diagram
- Nominal data table
- Technical features: control input 0-10 VDC / PWM, RS485 ebmBUS, alarm relay, integrated PID control, voltage supply for sensor, input for sensor 0-10 V respectively 4-20 mA, 0-10 V output for slave, PFC (passive), soft start, line undervoltage detection, phase failure detection
- Motor protection: motor current limitation, over-temperature protected electronics and motor, locked-rotor protection
- Protection class: I (according to EN 61800-5-1)
- Product conforming to standard: CE
- Approvals: GOST, UL and VDE are applied for

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<thead>
<tr>
<th>Selection</th>
<th>Direction of Air Flow</th>
<th>Motor angle</th>
<th>Type</th>
<th>Diameter (Ømm)</th>
<th>Guard grilles</th>
<th>Back connections</th>
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<tbody>
<tr>
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<td>0&quot;</td>
<td>W3G800-CH03 -80</td>
<td>865</td>
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</table>
EC transformer fans
Ø 990

- Material:
  - Guard grille made of steel, zinc-plated and plastic coated, RAL 9006
  - Wall ring made of sheet steel, hot-dip galvanised and plastic coated, RAL 9006
  - Screwed on fan blades made of die-cast aluminium, varnished, RAL 9005
  - Stator and electronics housing made of die-cast aluminium, varnished, RAL 9005
  - Rotor made of sheet steel, varnished, RAL 9005

- Direction of air flow: "A"
- Direction of rotation: counter-clockwise, seen on rotor
- Type of protection: IP 54 (according to EN 60529)
- Insulation class: "F"
- Mounting position: shaft horizontal or rotor on top
- Condensate discharges: in the stator flange
- Operating mode: Continuous operation (S1)
- Bearings: Maintenance-free ball bearings

Nominal data:

<table>
<thead>
<tr>
<th>Type</th>
<th>Motor</th>
<th>VAC</th>
<th>Hz</th>
<th>m³/h</th>
<th>min⁻¹</th>
<th>W</th>
<th>A</th>
<th>Pa</th>
<th>°C</th>
<th>kg</th>
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<td>1800</td>
<td>1030</td>
<td>120</td>
<td>-40..+60</td>
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subject to alterations

(1) at 400 VAC

Characteristics

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<td>17500</td>
<td>7400</td>
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ebm papst
- **Technical features:** control input 0-10 VDC / PWM, RS485 ebmBUS, alarm relay, integrated PID control, voltage supply for sensor, input for sensor 0-10 V respectively 4-20 mA, 0-10 V output for slave, PFC (passive), soft start, line undervoltage detection, phase failure detection
- **Motor protection:** motor current limitation, over-temperature protected electronics and motor, locked-rotor protection
- **Protection class:** I (according to EN 61800-5-1)
- **Product conforming to standard:** CE
- **Approvals:** GOST, UL and VDE are applied for

<table>
<thead>
<tr>
<th>Type</th>
<th>Selection</th>
<th>Direction of air flow</th>
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<tr>
<td>W3G990</td>
<td>&quot;A&quot;</td>
<td>Ø1043</td>
</tr>
<tr>
<td>W3G990-CD15-80</td>
<td></td>
<td>24xØ11.5</td>
</tr>
<tr>
<td></td>
<td>W3G990-CD15-80</td>
<td>Ø1185</td>
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<tr>
<td></td>
<td>W3G990-CD15-80</td>
<td>280</td>
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<td></td>
<td>W3G990-CD15-80</td>
<td>Ø100</td>
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<td></td>
<td>W3G990-CD15-80</td>
<td>Ø1075</td>
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<td></td>
<td>W3G990-CD15-80</td>
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Cable gland M20

Guard grilles p. 28
Back connections p. 29
Accessories

Guard grilles (to be mounted on pressing side)

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<tr>
<th>Part no.</th>
<th>Size</th>
<th>a</th>
<th>b</th>
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<tbody>
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<td>40500-2-4039</td>
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<td>40710-2-4039</td>
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<td>751</td>
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<td>40800-2-4039</td>
<td>800</td>
<td>837</td>
<td>790</td>
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<tr>
<td>40990-2-4039</td>
<td>990</td>
<td>1043</td>
<td>990</td>
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Material: galvanised steel wire, plastic coated in RAL no. 9006
Electrical connections

**AC motors**

*Delta connection (3–400 VAC power line) with TOP brought out high speed*

- U1 = black
- U2 = green
- V1 = blue
- W1 = brown
- W2 = yellow
- PE = green/yellow

*Star connection (3–400 VAC power line) with TOP brought out low speed*

- U1 = black
- U2 = green
- V1 = blue
- W1 = brown
- W2 = yellow
- PE = green/yellow

**EC motors (size 150, 3-phase line-fed)**

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<tr>
<th>Connector</th>
<th>Signal</th>
<th>Assignment / function</th>
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</thead>
<tbody>
<tr>
<td>PE</td>
<td>PE</td>
<td>Protective earth</td>
</tr>
<tr>
<td>L3</td>
<td>L3</td>
<td>Mains; L3</td>
</tr>
<tr>
<td>L2</td>
<td>L2</td>
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</tr>
<tr>
<td>L1</td>
<td>L1</td>
<td>Mains; L1</td>
</tr>
<tr>
<td>KL2</td>
<td>NC</td>
<td>Alarm relay, break for failure</td>
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<tr>
<td></td>
<td>COM</td>
<td>Alarm relay, COMMON (2A, 250 VAC, AC1)</td>
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<tr>
<td></td>
<td>NO</td>
<td>Alarm relay, make for failure</td>
</tr>
</tbody>
</table>

<table>
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<tr>
<th>Connector</th>
<th>Signal</th>
<th>Assignment / function</th>
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<tbody>
<tr>
<td>RS A</td>
<td>0-10 V / PWM</td>
<td>Control / Actual value input</td>
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<tr>
<td>RS B</td>
<td>RS485 interface for ebmBUS; RS B</td>
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<tr>
<td>RS A+</td>
<td>+10 V</td>
<td>Supply for external potentiometer, +10 VDC (+10 %) @ 5 mA</td>
</tr>
<tr>
<td>RS B+</td>
<td>+20 V</td>
<td>Supply for external sensor, +20 VDC (+20 %) @ 50 mA</td>
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<tr>
<td>RS A-</td>
<td>+20 mA</td>
<td>Control / Actual value input</td>
</tr>
<tr>
<td>RS B-</td>
<td>0-10 V / PWM</td>
<td>Control / Actual value input</td>
</tr>
<tr>
<td>COM</td>
<td>COM</td>
<td>Ground (GND)</td>
</tr>
<tr>
<td>NO</td>
<td>NO</td>
<td>Alarm relay, make for failure</td>
</tr>
<tr>
<td>RS A</td>
<td>RS485 interface for ebmBUS; RS A</td>
<td></td>
</tr>
<tr>
<td>RS B</td>
<td>RS485 interface for ebmBUS; RS B</td>
<td></td>
</tr>
</tbody>
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