USER INFORMATION

RADIAL FANS

SERIES VRE 100 ... 560
direct driven
Radial fans of plastic materials
Series VRE VRE 100 ... 560
direct driven

Application in all ranges of ventilation

High chemical resistivity by the use of plastic materials
(PVC, PPs, PE, PVDF, GfK, electrically conductive plastic)

High efficiency and little noise emission

Volumetric flow up to 36,000 m³/h
Pressure increase up to 3,300 Pa

Capacity gradation by nine sizes and two versions

Housing positions left and right (L and R)

Explosion-proof versions according to European Directive 94/9/EG (ATEX)

Varied casing connectors

Many electrical and ventilation accessories

Data specified herein are subject to alteration without prior notice.
They will not be valid without written confirmation by the manufacturers.
APPLICATION
High resistance to corrosion resulting from the use of high-quality plastic materials makes the radial fans of type VRE suitable in particular for process exhausting devices in the chemical and pharmaceutical industries, for ventilating laboratories, battery rooms, pickling and washing plants, galvanic and agricultural facilities etc.

TECHNICAL DESCRIPTION
Main components of the fans are the impeller, spiral casing, casing connections, base, and driving motor. The motor is flange-connected directly to the base and completely separated from the flowing medium. The impeller has been arranged on the motor shaft and is driven directly. Steel components - such as screws, hub and hub connections - are made of acid-resistant steel or protected against corrosion by plastic coverings.

The aerodynamic design of the fans is state-of-the-art so that high efficiency, low sound levels, and high performance density can be achieved.

Every fan is supplied as a complete assembly unit ready for use. Vibration absorbers matched in size and quantity, elastic connections on the pressure and suction sides, and a condensate drain bore with closing cap are elements of the standard range of delivery.

Design features
Impeller: There are two impeller designs covering a wide range of performance:
  - Type 731 with vanes curved backward
  - Type 734 with vanes curved forward

Special impellers are used for special applications. Impellers with vanes in radial arrangement, for instance, are advantageous if the medium conveyed contains intensely sticking substances.

The impellers are made of single components and assembled with progressive joining methods. Dynamic balancing complies with ISO 1940.

Materials: PVC, PPs, PVDF, FRP (for high demands), electrically conductive plastic material (explosion-proof fans)

Casing: The casings are made of deep-drawn half shells (sizes 100 … 250 made of PVC or PPs) or even side walls and a jacket which are tightly welded. The connection diameter on the suction side is in any case identical with the nominal size of the fan. The casing can be opened on the suction side for cleaning. A condensate drain has been arranged in deepest position.

Sealness of the shaft lead-through that is sufficient for many applications results from the vanes with far end arrangement. Higher demands on sealness are met by an additional seal between impeller and casing (see section Shaft seal).

A shatter guard or an additional FRP reinforcement should be arranged for cases of high demands on safety.

A wide range of casing connections is available for connecting ventilation lines.

Note: Connected plant components must not load the fan mechanically.

Materials: PVC, PPs, PVDF, FRP (for high demands), electrically conductive plastic material (explosion-proof fans)

Base: Robust welded design of zinc-coated sheet steel, optionally available: varnished or of stainless steel.

Motors: Standard motor: 3 ~ 400 V/ 50 Hz, degree of protection IP 54, design B 5 (in special cases B 14 or B 3)

Single-phase motors 230 V/ 50 Hz, motors with special voltages and different degree of protection, pole-changing and explosion-proof motors

Motors with thermal winding protection (PTC resistor) --> special design TS

Motors with integrated frequency inverter --> special design MFU
CONDITIONS OF USE

permissible ambient temperature: -30 °C ... 40 °C (EX motors -20 °C ... 40 °C)
permissible temperature of medium conveyed: -30 °C ... 40 °C
Higher temperatures depend on the design size, material, and speed rate and are subject to consultation with the manufacturers.

The applied materials have good chemical resistance against many substances. It should be considered, however, that even plastic materials are attacked by certain chemicals. This depends on the following items:

- Chemical composition and concentration of medium conveyed
- Temperature and time of action
- Mechanical loading and residual stress resulting from processing

Many applications in fields such as laboratories and stockrooms for chemicals, in agriculture and damp-loaded processes led to good results with "standard materials" such as PVC or PPs that can be used without any problem in most cases. Critical applications may occur in the process-technological industry - surface refinement, pickling plants, process exhaust air in microelectronics.

For selection of suitable materials the purpose of use of the fan and the type of medium conveyed should be specified in requests or orders.

Slightly dust-laden media can also be conveyed but lead to increased wear.

Notes on outdoor use:
If possible, fans should not be exposed to intense ultraviolet radiation.
The motor should be protected by a weather hood.
Ambient conditions have to be considered in material selection.

Working range: The fans show stable operation in the entire range of the characteristic shown. Operation with smaller volume flows is possible but very ineffective. Use with larger volume flows may lead to motor overload (type 734 in particular) and must be avoided.
Parallel arrangement: of type 731 is possible in any case, of type 734 after consultation with the manufacturers only.
Series arrangement: requires the manufacturers' agreement (increased casing pressures).

SHAFT SEAL

Radial fans VRE with standard design have vanes in far end arrangement and formed on the rear hub protection cap. This means permanent intake of external air through the minimized gap of the shaft lead-through if pressure loss on suction end is greater than one third of total pressure loss.

This is the reason why components with high pressure losses such as washers, filters, separators etc. should be arranged, whenever possible, before the fan, i.e. on the suction side.

A shaft seal is used if this "aerodynamic casing sealing" is not sufficient. This may happen if, for instance, there is the risk of aggressive gas escaping with the fan at rest.

The hub body of special design GD carries a sealing ring with axially acting flexible sealing lip.
The counter-runway in the casing wall consists of a material with good sliding properties (stainless steel or a special plastic material, the latter in cases of action of hydrochloric acid, chromic aid, hydrofluoric acid etc.).

This seal is used for high demands on gastightness and in cases of relatively dry outlet air. It is distinguished by its long service life.

There are various special seals such as gas shutoff seals, labyrinth seals etc. for very high demands on tightness, in particular in cases of high humidity and much condensate.
The manufacturers should be contacted for such applications.

SPECIAL DESIGNS and ACCESSORIES (more details at the end of this brochure)

Cleaning opening, shatter guard, weather hood for motor, various connections for condensate drain, base of stainless steel, intake and outlet protective grating
Ventilation components: ducts, elbows, flaps, air hoods, pipe and profiled silencers
Electrical accessories: repair switches, motor protection switches, pole changing switches, complete fan controls, frequency inverters (also with pressure and volumetric flow regulation), air flow monitoring.
EXPLOSION PROTECTION

Guideline 94/9/EG (ATEX) newly regulates explosion protection for non-electrical devices from July 1, 2003. In addition to observation of design and safety instructions according to DIN EN 14986 and DIN EN 13463, the fan has to be assigned exactly to the relevant degree of protection and labelled accordingly. The manufacturers have to prove conformity.

Areas with hazard of explosion exist in the chemical industry, in gasworks, coking plants, varnishing units, petrol stations, sewage and wastewater treatment plants, laboratory systems etc.

Prerequisites of explosion are:
- Flammable substances (such as gas, dust),
- Oxygen in sufficient quantity of air
- Ignition source (sparks, fire, hot surfaces, electrostatic discharges)

The following measures have to be taken if explosions cannot be excluded:
- Prevention of exploisible atmosphere
- Avoidance of ignition sources
- Moderation of damaging effects of explosions

An efficient and supervised ventilation system is often a sufficient measure for avoiding ignitable atmosphere and, consequently, hazard of explosion.

Protection demands on a fan depend on the probability of occurrence of exploisible atmosphere in the medium conveyed or/and in the surrounding. Hazard is classified in three zones:

<table>
<thead>
<tr>
<th>Explosions hazard</th>
<th>Hazard zone</th>
<th>Avoidance of ignition sources</th>
<th>Category acc. to ATEX</th>
</tr>
</thead>
<tbody>
<tr>
<td>continuous long periods</td>
<td>zone 0</td>
<td>even in the event of rare incidents</td>
<td>1</td>
</tr>
<tr>
<td>likely to occur</td>
<td>zone 1</td>
<td>even in the event of frequent disturbances/faults</td>
<td>2</td>
</tr>
<tr>
<td>infrequently short period</td>
<td>zone 2</td>
<td>during normal operation</td>
<td>3</td>
</tr>
</tbody>
</table>

The plant operator or the relevant board of control has to decide which protection is necessary and which additional regulations have to be considered. This means that the customer has to specify in the order which kind of protection the fan has to have.

Fans VRE are supplied for the following types of ignition protection:

Zone 1: II 2G c IIB+H2 T3
- temperature class T3 (ignition temperature of gas > 200 °C)
- explosion group of gases IIB+H2 (IIA and H2 included, IIC not included)
- constructional safety
- category (2G = gases of zone 1, 3G = gases of zone 2)
- Equipment-group II (use in mining not permissible)

On principle, application in zone 0 is not possible. Gases of explosion group IIC (hydrogen excluded), gases with ignition temperature below 200 °C, and combustible dusts are likewise impermissible.

Classification generally differentiates between inside (medium conveyed) and outside (surrounding). Every zone of hazard requires its special design. Explosion-proof electrical devices (motors, switches etc.) and electrically conductive materials (preferably conductive and flame retardant polypropylene --> PPsX) are employed. General classification is as follows:

<table>
<thead>
<tr>
<th>Hazard zone inside</th>
<th>Hazard zone outside</th>
<th>MIETZSCH designation</th>
<th>Motor without inverter</th>
<th>Motor with inverter</th>
<th>Impeller/housing material</th>
</tr>
</thead>
<tbody>
<tr>
<td>zone 2</td>
<td>zone 2</td>
<td>Z2Z2</td>
<td>EEx e II</td>
<td>EEx de</td>
<td>not conductive</td>
</tr>
<tr>
<td>zone 2</td>
<td>none</td>
<td>Z2Z3</td>
<td>EEx e II</td>
<td>standard</td>
<td>not conductive</td>
</tr>
<tr>
<td>zone 1</td>
<td>zone 1</td>
<td>Z1Z1</td>
<td>EEx e II</td>
<td>EEx de</td>
<td>conductive</td>
</tr>
<tr>
<td>zone 1</td>
<td>zone 2</td>
<td>Z1Z2</td>
<td>EEx e II</td>
<td>EEx de</td>
<td>conductive</td>
</tr>
</tbody>
</table>

Special demands for operation with frequency inverter
Motors with increased safety EEx e II must not be used in inverter operation. Motors EEx de with flameproof enclosure can be employed in inverter mode if they are equipped with special winding protection (special design TS15). Standard motors can be used and operated in inverter mode if the surrounding is not an EX zone and the fan meets certain design demands.
EXPLANATION OF TYPE DESIGNATIONS

Fan (radial, one suction side) ________________________________
Nominal size (inlet diameter /mm) ________________________________
Impeller type ________________________________
  731 - curved backward
  734 - curved forward
  (special designs of impeller types)
Direct drive ________________________________
Nominal speed rpm ________________________________
  (higher speed in cases of pole-changing motors)
Brief designation of special versions ________________________________
  E = single-phase drive
  TS = with thermal winding protection (thermistor)
  P1 = pole-changing motors with speed halving (Dahlander)
    such as 1450 P1 = 1450/710 rpm
  P2 = pole-changing motors with Separate windings
    such as 1450 P2 = 1450/950 U/min (changeover to next smaller speed)
  EX = with motor increased safety EEEx e II T3
  EXde = with motor flameproof enclosure EEEx de IIC T4
  ZiTo = explosion-proof fan for zone i=inside and o=outside
    such as Z1Z2 = inside zone 1 and outside zone 2
  GD = gastight (with shaft sealing)
  GDS = high gastight casing for humid media with condensate
  DD = motor in delta connection for frequency inverter 3x230V
    (in case of mounted repair switch)
Housing positions (view from intake side) ________________________________
Material (casing/impeller) ________________________________

PERFORMANCE PARAMETERS

All performance parameters are determined on MIETZSCH-own test racks. The design corresponds to DIN 24 163. The volumetric flow is determined from the differential pressure by means of a measuring nozzle according to EN ISO 5167.

In cases of radial fans that are destined to be arranged within a plant, the total pressure difference $\Delta p_t$ results from

$$\Delta p_t = p_{tD} - p_{tS} = (p_{statD} + \rho/2 * c_D^2) - (p_{statS} + \rho/2 * c_S^2)$$

This size corresponds to the usable total pressure losses on the suction side (S) and the pressure side (D).

If area of inlet and outlet are equal total pressure difference is identically to static pressure difference

$$\Delta p_t = p_{statD} - p_{statS} = \Delta p_{stat}$$

In praxis a pressure difference diminished by the dynamic pressure is often used. This size corresponds to the pressure difference for free blowout $\Delta p_{fa}$ which is used for roof fans:

$$\Delta p_{fa} = \Delta p_t - \rho/2 * c_D^2$$

(to designate it static pressure difference is incorrect)

Duct sound power level $L_{WA}$

The measuring method for determination of the duct sound power level is specified in DIN 45 635, Part 9. Interpretation is according to

$$L_{WA} = L_{value \ measured} + 10 * \log (\pi / 4 * D^2) \ dB \quad D = diameter \ of \ measuring \ line$$

Sound pressure level $L_{3m}$

Several measuring points are arranged on an enveloping surface around the fan. Conversion to the specified level at 3 meters is calculated from

$$L_{3m} = L_{value \ measured} + 20 * \log (r_m / 3m) \ dB$$
Radial fans of plastic materials
Series VRE direct driven
Technical explanation

**HOUSING POSITIONS** (view from inlet side)

<table>
<thead>
<tr>
<th>0L</th>
<th>45L</th>
<th>90L</th>
<th>135L</th>
<th>180L</th>
<th>225L</th>
</tr>
</thead>
<tbody>
<tr>
<td>0R</td>
<td>45R</td>
<td>90R</td>
<td>135R</td>
<td>180R</td>
<td>225R</td>
</tr>
</tbody>
</table>

All fans are available in direction of rotation L (left) und R (right) and in 6 different housing positions.

Changing the position of the casing after manufacturing is complicated. Please consult the manufacturer.

**SURVEY OF TYPES - PRESELECTION**

![Graph showing the relationship between pressure drop (Δp) and volume flow rate (V) for different impeller types.](image)

- **VRE 731**
  - Impeller with backward curved vanes
  - Direction of rotation left

- **VRE 734**
  - Impeller with forward curved vanes
  - Direction of rotation left

**Technical explanation**

*All fans are available in direction of rotation L (left) und R (right) and in 6 different housing positions.*

*Changing the position of the casing after manufacturing is complicated. Please consult the manufacturer.*
Radial fans of plastic material
VRE 100 / 731
Impeller with backward curved vanes

PERFORMANCE

Δpₜ / Pa

2900 U/min

1450

1000

500

0,02

0,03

0,05

0,1

0,2

50

100

200

300

400

500

1000

V / m³/s

V / m³/h

\( \rho = 1,2 \text{ kg/m}^3 \)

Working range
- stable regime in entire characteristic range
- fan can be operated beyond characteristic specified
- parallel connection possible, series connection after consultation with the manufacturers

Design features
- welded impeller with 8 vanes curved backward
- casing deep-drawn for PVC or PPs welded for special materials
- motor outside the flow conveyed
- robust sheet metal base, zinc-coated
- vibration absorbers in range of delivery
- variant connectors of casing

Principal dimensions
(made of PVC or PPs)
The principal dimensions refer to elastic connectors on inlet and outlet and for housing position 90R.
Height of axis is identical for all housing positions.

Further dimensions see page 26.
For special materials see page 28.
Number of vibration absorbers : 4

Drawings in format dxf
--> MIETZSCH-CD

Motor versions for standard motor 3~400V/50Hz
(Data for other motors, such as single-phase, polechanging or Ex, upon inquiry.)

<table>
<thead>
<tr>
<th>fan type</th>
<th>speed</th>
<th>power required</th>
<th>nom. motor</th>
<th>nom. motor</th>
<th>weight with motor</th>
<th>Lₜₚₚₚ</th>
<th>Lₚₚₚ</th>
<th>Lₜₚₚ</th>
<th>Lₚₚ</th>
<th>Lₚₚ₋ₚₘₚ</th>
<th>Lₚₚ₋ₚₘₚ₋ₚₘₚ / dB(A)</th>
</tr>
</thead>
<tbody>
<tr>
<td>VRE 100/731W1450</td>
<td>1450</td>
<td>0.0045</td>
<td>0.12</td>
<td>0.42</td>
<td>9.5</td>
<td>45</td>
<td>62</td>
<td>43</td>
<td>58</td>
<td>54</td>
<td>37</td>
</tr>
<tr>
<td>VRE 100/731W2900</td>
<td>2900</td>
<td>0.035</td>
<td>0.18</td>
<td>0.51</td>
<td>10</td>
<td>51</td>
<td>68</td>
<td>52</td>
<td>60</td>
<td>63</td>
<td>36</td>
</tr>
</tbody>
</table>

Lₜₚₚₚ = A - weighted sound pressure level at distance of 3 m
Lₚₚₚ = A - weighted sound power level in duct
Radial fans of plastic material
VRE 100 / 734
Impeller with forward curved vanes

PERFORMANCE

\[ \Delta p_t / \text{Pa} \]

\[ \dot{V} / \text{m}^3/\text{h} \]
\[ \dot{V} / \text{m}^3/\text{s} \]

\[ \rho = 1.2 \text{ kg/m}^3 \]

\[ 2900 \text{ U/min} \]
\[ 1450 \text{ U/min} \]

Working range
- stable regime in entire characteristic range
- operation with larger volumetric flows may lead to motor
- parallel and series connection possible after consultation with the manufacturers

Design features
- welded impeller with 32 vanes curved forward
- casing deep-drawn for PVC or PPs welded for special materials
- motor outside the flow conveyed
- robust sheet metal base, zinc-coated
- vibration absorbers in range of delivery
- variant connectors of casing

PRINCIPAL DIMENSIONS
(made of PVC or PPs)
The principal dimensions refer to elastic connectors on inlet and outlet and for housing position 90R.
Height of axis is identical for all housing positions.

Further dimensions see page 26.
For special materials see page 28.
Number of vibration absorbers: 4

Drawings in format dxf
--> MIETZSCH-CD

MOTOR VERSIONS for standard motor 3~400V/50Hz
(Data for other motors, such as single-phase, polechanging or Ex, upon inquiry.)

<table>
<thead>
<tr>
<th>fan type</th>
<th>speed rpm</th>
<th>power required kW</th>
<th>nom. motor power kW</th>
<th>nom. motor current A</th>
<th>weight with motor kg</th>
<th>( L_{A3m} ) dB(A)</th>
<th>( L_{WA} ) dB(A)</th>
</tr>
</thead>
<tbody>
<tr>
<td>VRE 100/734W1450</td>
<td>1450</td>
<td>0.024</td>
<td>0.12</td>
<td>0.42</td>
<td>10</td>
<td>45</td>
<td>61</td>
</tr>
<tr>
<td>VRE 100/734W2900</td>
<td>2900</td>
<td>0.17</td>
<td>0.18</td>
<td>0.51</td>
<td>10</td>
<td>54</td>
<td>72</td>
</tr>
</tbody>
</table>

\[ L_{A3m} = \text{A-weighted sound pressure level at distance of 3 m} \]
\[ L_{WA} = \text{A-weighted sound power level in duct} \]
Radial fans of plastic material

VRE 160 / 731
Impeller with backward curved vanes

PERFORMANCE

\[ \Delta p_f / \text{Pa} \]

\[ \dot{V} / \text{m}^3/\text{s} \]

\[ \dot{V} / \text{m}^3/\text{h} \]

\[ \rho = 1.2 \text{ kg/m}^3 \]

\[ \eta = 0.78 \]

\[ \tau_{\text{max}} = 810 \]

Working range
- stable regime in entire characteristic range
- fan can be operated beyond characteristic specified
- parallel connection possible, series connection after consultation with the manufacturers

Design features
- welded impeller with 8 vanes curved backward
- casing deep-drawn for PVC or PPs welded for special materials
- motor outside the flow conveyed
- robust sheet metal base, zinc-coated
- vibration absorbers in range of delivery
- variant connectors of casing

PRINCIPAL DIMENSIONS
(made of PVC or PPs)
The principal dimensions refer to elastic connectors on inlet and outlet and for housing position 90R.
Height of axis is identical for all housing positions.
Further dimensions see page 26.
For special materials see page 28.
Number of vibration absorbers : 4
(in case of heavy motors 6)

Drawings in format dxf
--> MIETZSCH-CD

MOTOR VERSIONS for standard motor 3~400V/50Hz
(Data for other motors, such as single-phase, polechanging or Ex, upon inquiry.)

<table>
<thead>
<tr>
<th>fan type</th>
<th>speed rpm</th>
<th>power required kW</th>
<th>nom. motor power kW</th>
<th>nom. motor current A</th>
<th>weight with motor kg</th>
<th>( L_{A3m} ) dB(A)</th>
<th>( L_{WA} ) dB(A)</th>
<th>octave-band ( L_{WA,01} ) / dB(A)</th>
</tr>
</thead>
<tbody>
<tr>
<td>VRE 160/731W950</td>
<td>950</td>
<td>0.014</td>
<td>0.09</td>
<td>0.44</td>
<td>17</td>
<td>39</td>
<td>56</td>
<td>83 48 48 50 48 50 48 33 16</td>
</tr>
<tr>
<td>VRE 160/731W1450</td>
<td>1450</td>
<td>0.045</td>
<td>0.12</td>
<td>0.42</td>
<td>17</td>
<td>44</td>
<td>62</td>
<td>83 57 53 55 56 53 43 43 26</td>
</tr>
<tr>
<td>VRE 160/731W2900</td>
<td>2900</td>
<td>0.31</td>
<td>0.37</td>
<td>1.0</td>
<td>19</td>
<td>60</td>
<td>78</td>
<td>83 66 68 77 70 62 69 59 50</td>
</tr>
</tbody>
</table>

\( L_{A3m} = A \) - weighted sound pressure level at distance of 3 m
\( L_{WA} = A \) - weighted sound power level in duct
Radial fans of plastic material

VRE 160 / 734

Impeller with forward curved vanes

PERFORMANCE

\[ \Delta p_{\text{f}} / \text{Pa} \]

\[ \dot{V} / \text{m}^3/\text{h} \]

\[ \dot{V} / \text{m}^3/\text{s} \]

Working range
- stable regime in entire characteristic range
- operation with larger volumetric flows may lead to motor
- parallel and series connection possible after consultation with the manufacturers

Design features
- welded impeller with 35 vanes curved forward
- casing deep-drawn for PVC or PPs, welded for special materials
- motor outside the flow conveyed
- robust sheet metal base, zinc-coated
- vibration absorbers in range of delivery
- variant connectors of casing

PRINCIPAL DIMENSIONS
(made of PVC or PPs)
The principal dimensions refer to elastic connectors on inlet and outlet and for housing position 90R.
Height of axis is identical for all housing positions.
Further dimensions see page 26.
For special materials see page 28.
Number of vibration absorbers: 4 (in case of heavy motors 6)
Drawings in format dxf --> MIETZSCH-CD

MOTOR VERSIONS for standard motor 3~400V/50Hz
(Data for other motors, such as single-phase, polechanging or Ex, upon inquiry.)

<table>
<thead>
<tr>
<th>fan type</th>
<th>speed rpm</th>
<th>power required kW</th>
<th>nom. motor power kW</th>
<th>nom. motor current A</th>
<th>weight with motor kg</th>
<th>( L_{10m} ) dB(A)</th>
<th>( L_{WA} ) dB(A)</th>
<th>octave-band ( L_{WA,Okt} ) / dB(A)</th>
</tr>
</thead>
<tbody>
<tr>
<td>VRE 160/734W950</td>
<td>950</td>
<td>0,08</td>
<td>0,09</td>
<td>0,44</td>
<td>18</td>
<td>44</td>
<td>62</td>
<td>43 51 51 59 55 51 40 26</td>
</tr>
<tr>
<td>VRE 160/734W1450</td>
<td>1450</td>
<td>0,25</td>
<td>0,25</td>
<td>0,76</td>
<td>19</td>
<td>52</td>
<td>69</td>
<td>54 59 58 64 66 57 50 38</td>
</tr>
<tr>
<td>VRE 160/734W2900</td>
<td>2900</td>
<td>2,2</td>
<td>2,2</td>
<td>4,6</td>
<td>29</td>
<td>63</td>
<td>82</td>
<td>59 72 72 76 78 76 70 62</td>
</tr>
</tbody>
</table>

\( L_{10m} \) = A - weighted sound pressure level at distance of 3 m
\( L_{WA} \) = A - weighted sound power level in duct
Radial fans of plastic material
VRE 200 / 731
Impeller with backward curved vanes

PERFORMANCE

Working range
- stable regime in entire characteristic range
- fan can be operated beyond characteristic specified
- parallel connection possible, series connection after consultation with the manufacturers

Design features
- welded impeller with 8 vanes curved backward
- casing deep-drawn for PVC or PPs welded for special materials
- motor outside the flow conveyed
- robust sheet metal base, zinc-coated
- vibration absorbers in range of delivery
- variant connectors of casing

PRINCIPAL DIMENSIONS
(made of PVC or PPs)
The principal dimensions refer to elastic connectors on inlet and outlet and for housing position 90R.
Height of axis is identical for all housing positions.

Further dimensions see page 26.
For special materials see page 28.

Number of vibration absorbers : 4
(in case of heavy motors 6)

Drawings in format dxf
--> MIETZSCH-CD

MOTOR VERSIONS for standard motor 3~400V/50Hz
(Data for other motors, such as single-phase, polechanging or Ex, upon inquiry.)
Radial fans of plastic material
VRE 200 / 734
Impeller with forward curved vanes

Performance
- Working range
  - stable regime in entire characteristic range
  - operation with larger volumetric flows may lead to motor
  - parallel and series connection possible after consultation with the manufacturers

Design features
- welded impeller with 35 vanes curved forward
- casing
  - deep-drawn for PVC or PPs
  - welded for special materials
- motor outside the flow conveyed
- robust sheet metal base, zinc-coated
- vibration absorbers in range of delivery
- variant connectors of casing

Motor versions for standard motor 3~400V/50Hz
(Data for other motors, such as single-phase, pole-changing or Ex, upon inquiry.)

<table>
<thead>
<tr>
<th>Fan type</th>
<th>Speed rpm</th>
<th>Power required kW</th>
<th>Nom. motor power kW</th>
<th>Nom. motor current A</th>
<th>Weight with motor kg</th>
<th>L_{A3m} dB(A)</th>
<th>L_{WA} dB(A)</th>
<th>Octave-band L_{WA,Okt} / dB(A)</th>
</tr>
</thead>
<tbody>
<tr>
<td>VRE 200/734W710</td>
<td>710</td>
<td>0,1</td>
<td>0,12</td>
<td>0,51</td>
<td>32</td>
<td>45</td>
<td>62</td>
<td>48 53 54 57 53 49 56 53 46 35</td>
</tr>
<tr>
<td>VRE 200/734W950</td>
<td>950</td>
<td>0,2</td>
<td>0,25</td>
<td>0,78</td>
<td>32</td>
<td>50</td>
<td>67</td>
<td>51 56 59 64 58 53 46 35</td>
</tr>
<tr>
<td>VRE 200/734W1450</td>
<td>1450</td>
<td>0,85</td>
<td>1,1</td>
<td>2,65</td>
<td>38</td>
<td>59</td>
<td>77</td>
<td>60 65 67 71 72 67 60 48</td>
</tr>
<tr>
<td>VRE 200/734W2900</td>
<td>2900</td>
<td>7,2</td>
<td>7,5</td>
<td>14,7</td>
<td>86</td>
<td>75</td>
<td>92</td>
<td>75 82 84 87 88 82 75 63</td>
</tr>
</tbody>
</table>

\[
\rho = 1.2 \text{ kg/m}^3
\]

Principal dimensions
(made of PVC or PPs)
The principal dimensions refer to elastic connectors on inlet and outlet and for housing position 90R.
Height of axis is identical for all housing positions.

Further dimensions see page 26.
For special materials see page 28.

Number of vibration absorbers: 4
(in case of heavy motors 6)

Drawings in format dxf
--> MIETZSCH-CD

MIETZSCH GmbH Lufttechnik Dresden • Großenhainer Str. 137 • 01129 Dresden • Fax (0351) 8 58 00 74 • http://www.mietzsch.de
Radial fans of plastic material
VRE 250 / 731
Impeller with backward curved vanes

PERFORMANCE

Working range
- stable regime in entire characteristic range
- fan can be operated beyond characteristic specified
- parallel connection possible, series connection after consultation with the manufacturers

Design features
- welded impeller with 8 vanes curved backward
  speed 2900rpm with FRP-impeller
- casing
  deep-drawn for PVC or PPs welded for special materials
- motor outside the flow conveyed
- robust sheet metal base, zinc-coated
- vibration absorbers in range of delivery
- variant connectors of casing

PRINCIPAL DIMENSIONS
(made of PVC or PPs)
The principal dimensions refer to elastic connectors on inlet and outlet and for housing position 90R.
Height of axis is identical for all housing positions.

Further dimensions see page 26.
For special materials see page 28.
Number of vibration absorbers : 4
(in case of heavy motors 6)

Drawings in format dxf
--> MIETZSCH-CD

MOTOR VERSIONS for standard motor 3~400V/50Hz
(Data for other motors, such as single-phase, polechanging or Ex, upon inquiry.)

<table>
<thead>
<tr>
<th>fan type</th>
<th>speed rpm</th>
<th>power required kW</th>
<th>nom. motor power kW</th>
<th>nom. motor current A</th>
<th>weight with motor kg</th>
<th>L_A3m dB(A)</th>
<th>L_WA dB(A)</th>
<th>octave-band L_WA-Okt / dB(A)</th>
</tr>
</thead>
<tbody>
<tr>
<td>VRE250/731W710</td>
<td>710</td>
<td>0,05</td>
<td>0,09</td>
<td>0,36</td>
<td>35</td>
<td>42</td>
<td>59</td>
<td>44 53 50 55 52 44 30 21</td>
</tr>
<tr>
<td>VRE250/731W950</td>
<td>950</td>
<td>0,11</td>
<td>0,18</td>
<td>0,62</td>
<td>36</td>
<td>47</td>
<td>64</td>
<td>50 55 56 57 60 53 46 28</td>
</tr>
<tr>
<td>VRE250/731W1450</td>
<td>1450</td>
<td>0,37</td>
<td>0,37</td>
<td>1,03</td>
<td>36</td>
<td>55</td>
<td>73</td>
<td>59 62 68 69 66 62 56 43</td>
</tr>
<tr>
<td>VRE250/731W2900 GfK</td>
<td>2900</td>
<td>3,2</td>
<td>4,0</td>
<td>7,7</td>
<td>75</td>
<td>70</td>
<td>88</td>
<td>74 85 83 84 80 76 69 56</td>
</tr>
</tbody>
</table>

GfK - impeller made of fibre reinforced plastic (FRP)
L_A3m = A - weighted sound pressure level at distance of 3 m
L_WA = A - weighted sound power level in duct
Radial fans of plastic material

VRE 250 / 734

Impeller with forward curved vanes

Working range
- stable regime in entire characteristic range
- operation with larger volumetric flows may lead to motor
- parallel and series connection possible after consultation with the manufacturers

Design features
- welded impeller with 35 vanes curved forward
- casing deep-drawn for PVC or PPs welded for special materials
- motor outside the flow conveyed
- robust sheet metal base, zinc-coated
- vibration absorbers in range of delivery
- variant connectors of casing

PERFORMANCE

\[ \Delta p_t \text{ / Pa} \]

\[
\begin{align*}
\Delta p_t & = 1,2 \text{ kg/m}^3 \\
\dot{V} & = \text{m}^3/\text{s} \\
\dot{V} & = \text{m}^3/\text{h}
\end{align*}
\]

PRINCIPAL DIMENSIONS
(made of PVC or PPs)
The principal dimensions refer to elastic connectors on inlet and outlet and for housing position 90R.
Height of axis is identical for all housing positions.

Further dimensions see page 26.
For special materials page 28.

Number of vibration absorbers : 4
(in case of heavy motors 6)

Drawings in format dxf
--> MIETZSCH-CD

MOTOR VERSIONS for standard motor 3~400V/50Hz
(Data for other motors, such as single-phase, polechanging or Ex, upon inquiry.)

<table>
<thead>
<tr>
<th>fan type</th>
<th>speed rpm</th>
<th>power required kW</th>
<th>nom. motor power kW</th>
<th>nom. motor current A</th>
<th>weight with motor kg</th>
<th>( L_{A3m} ) dB(A)</th>
<th>( L_{WA} ) dB(A)</th>
</tr>
</thead>
<tbody>
<tr>
<td>VRE 250/734W710</td>
<td>710</td>
<td>0,3</td>
<td>0,37</td>
<td>1,13</td>
<td>43</td>
<td>48</td>
<td>65</td>
</tr>
<tr>
<td>VRE 250/734W950</td>
<td>950</td>
<td>0,73</td>
<td>0,75</td>
<td>2,1</td>
<td>45</td>
<td>53</td>
<td>55</td>
</tr>
<tr>
<td>VRE 250/734W1450</td>
<td>1450</td>
<td>2,67</td>
<td>3,0</td>
<td>6,4</td>
<td>58</td>
<td>62</td>
<td>56</td>
</tr>
</tbody>
</table>

\[
\begin{align*}
L_{A3m} & = A\text{-weighted sound pressure level at distance of 3 m} \\
L_{WA} & = A\text{-weighted sound power level in duct}
\end{align*}
\]
Radial fans of plastic material
VRE 315 / 731
Impeller with backward curved vanes

PERFORMANCE

Working range
- stable regime in entire characteristic range
- fan can be operated beyond characteristic specified
- parallel connection possible, series connection after consultation with the manufacturers

Design features
- welded impeller with 8 vanes curved backward
  speed 2900rpm with FRP-impeller
- welded spiral casing
- motor outside the flow conveyed
- robust sheet metal base, zinc-coated
- vibration absorbers in range of delivery
- variant connectors of casing

PRINCIPAL DIMENSIONS
The principal dimensions refer to elastic connectors on inlet and outlet and for housing position 90R.
Height of axis is identical for all housing positions.
Further dimensions see page 27.
Number of vibration absorbers : 4
(in case of heavy motors 6)
Drawings in format dxf
--> MIETZSCH-CD

MOTOR VERSIONS for standard motor 3~400V/50Hz
(Data for other motors, such as polechanging or Ex, upon inquiry.)

<table>
<thead>
<tr>
<th>fan type</th>
<th>speed rpm</th>
<th>power required kW</th>
<th>nom. motor power kW</th>
<th>nom. motor current A</th>
<th>weight with motor kg</th>
<th>$L_{A,3m}$ dB(A)</th>
<th>$L_{WA}$ dB(A)</th>
<th>octave-band $L_{WA,oct}$ / dB(A)</th>
</tr>
</thead>
<tbody>
<tr>
<td>VRE 315/731W710</td>
<td>710</td>
<td>0.139</td>
<td>0.18</td>
<td>0.75</td>
<td>60</td>
<td>48</td>
<td>65</td>
<td>53</td>
</tr>
<tr>
<td>VRE 315/731W950</td>
<td>950</td>
<td>0.354</td>
<td>0.37</td>
<td>1.2</td>
<td>61</td>
<td>53</td>
<td>71</td>
<td>59</td>
</tr>
<tr>
<td>VRE 315/731W1450</td>
<td>1450</td>
<td>1.25</td>
<td>1.5</td>
<td>3.45</td>
<td>68</td>
<td>62</td>
<td>80</td>
<td>65</td>
</tr>
<tr>
<td>VRE 315/731W2900 GfK</td>
<td>2900</td>
<td>10.2</td>
<td>11.0</td>
<td>21.4</td>
<td>144</td>
<td>77</td>
<td>95</td>
<td>81</td>
</tr>
</tbody>
</table>

GfK - impeller made of fibre reinforced plastic (FRP)

$L_{A,3m} = A$ - weighted sound pressure level at distance of 3 m
$L_{WA} = A$ - weighted sound power level in duct
Radial fans of plastic material
VRE 315 / 734
Impeller with forward curved vanes

PERFORMANCE

Δp / Pa

0,2 0,3 0,4 0,5 1,0 2,0 3,0 4,0 5,0 6,0

0 1000 2000 3000 4000 5000 6000

1450 U/min

950

710

ρ = 1,2 kg/m³

V / m³/s

V / m³/h

PRINCIPAL DIMENSIONS
The principal dimensions refer to elastic connectors on inlet and outlet and for housing position 90R. Height of axis is identical for all housing positions.

Further dimensions see page 27.

Number of vibration absorbers : 4 (in case of heavy motors 6)

Drawings in format dxf --> MIETZSCH-CD

Motor versions for standard motor 3~400V/50Hz
(Data for other motors, such as polechanging or Ex, upon inquiry.)

<table>
<thead>
<tr>
<th>fan type</th>
<th>speed rpm</th>
<th>power required kW</th>
<th>nom. motor power kW</th>
<th>nom. motor current A</th>
<th>weight with motor kg</th>
<th>Lₐ₃₃m dB(A)</th>
<th>Lₗ₃₃m dB(A)</th>
<th>Lₗ₃₃m / dB(A)</th>
</tr>
</thead>
<tbody>
<tr>
<td>VRE 315/734W710</td>
<td>710</td>
<td>1,12</td>
<td>1,5</td>
<td>3,9</td>
<td>92</td>
<td>55</td>
<td>72</td>
<td>57</td>
</tr>
<tr>
<td>VRE 315/734W950</td>
<td>950</td>
<td>2,6</td>
<td>3,0</td>
<td>7,2</td>
<td>109</td>
<td>62</td>
<td>78</td>
<td>63</td>
</tr>
<tr>
<td>VRE 315/734W1450</td>
<td>1450</td>
<td>7,45</td>
<td>7,5</td>
<td>15,1</td>
<td>124</td>
<td>68</td>
<td>87</td>
<td>71</td>
</tr>
</tbody>
</table>

\[ L_{A3m} = A \text{- weighted sound pressure level at distance of 3 m} \]

\[ L_{WA} = A \text{- weighted sound power level in duct} \]
Radial fans of plastic material
VRE 400 / 731
Impeller with backward curved vanes

PERFORMANCE

Δp / Pa

\[ \Delta p_t / \text{Pa} \]

\[ \text{V} / \text{m}^3 / \text{s} \]

\[ \text{V} / \text{m}^3 / \text{h} \]

\[ \rho = 1.2 \text{ kg/m}^3 \]

Working range
- stable regime in entire characteristic range
- fan can be operated beyond characteristic specified
- parallel connection possible, series connection after consultation with the manufacturers

Design features
- welded impeller with 8 vanes curved backward
- welded spiral casing
- motor outside the flow conveyed
- robust sheet metal base, zinc-coated
- vibration absorbers in range of delivery
- variant connectors of casing

PRINCIPAL DIMENSIONS
The principal dimensions refer to elastic connectors on inlet and outlet and for housing position 90R.
Height of axis is identical for all housing positions.
Further dimensions see page 27.
Number of vibration absorbers: 4
(in case of heavy motors 6)
Drawings in format dxf
--> MIETZSCH-CD

MOTOR VERSIONS for standard motor 3~400V/50Hz
(Data for other motors, such as polechanging or Ex, upon inquiry.)

<table>
<thead>
<tr>
<th>fan type</th>
<th>speed rpm</th>
<th>power required kW</th>
<th>nom. motor power kW</th>
<th>nom. motor current A</th>
<th>weight with motor kg</th>
<th>L_{A_{3m}} dB(A)</th>
<th>L_{WA} dB(A)</th>
<th>octave-band L_{WA-Okt} / dB(A)</th>
</tr>
</thead>
<tbody>
<tr>
<td>VRE 400/731W710</td>
<td>710</td>
<td>0.46</td>
<td>0.55</td>
<td>1.58</td>
<td>115</td>
<td>55</td>
<td>72</td>
<td>65</td>
</tr>
<tr>
<td>VRE 400/731W950</td>
<td>950</td>
<td>1.17</td>
<td>1.5</td>
<td>3.9</td>
<td>122</td>
<td>61</td>
<td>79</td>
<td>66</td>
</tr>
<tr>
<td>VRE 400/731W1450</td>
<td>1450</td>
<td>4.13</td>
<td>5.5</td>
<td>11.4</td>
<td>148</td>
<td>68</td>
<td>86</td>
<td>73</td>
</tr>
</tbody>
</table>

L_{A_{3m}} = A - weighted sound pressure level at distance of 3 m
L_{WA} = A - weighted sound power level in duct
Radial fans of plastic material
VRE 400 / 734
Impeller with forward curved vanes

PERFORMANCE

\[ \Delta p / \text{Pa} \]

\[ \dot{V} / \text{m}^3/\text{h} \]

\[ \dot{V} / \text{m}^3/\text{s} \]

\[ \rho = 1.2 \text{ kg/m}^3 \]

\[ \eta = 0.72 \]

\[ \text{max.} 1335 \]

\[ \Theta 400 \]

\[ 830 \]

\[ 409 \]

\[ 400 \]

\[ 446 \]

\[ 479 \]

\[ 867 \]

\[ 555 \]

\[ 720 \]

\[ 740 \]

\[ 40(33) \]

PRINCIPAL DIMENSIONS
The principal dimensions refer to elastic connectors on inlet and outlet and for housing position 90R. Height of axis is identical for all housing positions. Further dimensions see page 27.

Number of vibration absorbers: 4 (in case of heavy motors 6)

Drawings in format dxf --> MIETZSCH-CD

MOTOR VERSIONS for standard motor 3~400V/50Hz
(Data for other motors, such as polechanging or Ex, upon inquiry.)

<table>
<thead>
<tr>
<th>fan type</th>
<th>speed rpm</th>
<th>power required kW</th>
<th>nom. motor power kW</th>
<th>nom. motor current A</th>
<th>weight with motor kg</th>
<th>( L_{A,3m} ) dB(A)</th>
<th>( L_{WA} ) dB(A)</th>
<th>( L_{WA-Okt} ) dB(A)</th>
</tr>
</thead>
<tbody>
<tr>
<td>VRE 400/734W710</td>
<td>710</td>
<td>3.9</td>
<td>4.0</td>
<td>10.0</td>
<td>184</td>
<td>62</td>
<td>79</td>
<td>63</td>
</tr>
<tr>
<td>VRE 400/734W950</td>
<td>950</td>
<td>9.6</td>
<td>11.0</td>
<td>24.5</td>
<td>225</td>
<td>68</td>
<td>85</td>
<td>70</td>
</tr>
<tr>
<td>VRE 400/734W1450</td>
<td>1450</td>
<td>29.8</td>
<td>30.0</td>
<td>55.0</td>
<td>297</td>
<td>75</td>
<td>93</td>
<td>81</td>
</tr>
</tbody>
</table>

\[ L_{A,3m} = A \text{- weighted sound pressure level at distance of 3 m} \]

\[ L_{WA} = A \text{- weighted sound power level in duct} \]
Radial fans of plastic material
VRE 450 / 731
Impeller with backward curved vanes

PERFORMANCE

<table>
<thead>
<tr>
<th>RPM</th>
<th>V / m³/h</th>
<th>V / m³/s</th>
</tr>
</thead>
<tbody>
<tr>
<td>1450</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

\[ \Delta p_t / \text{Pa} \]

\[ \rho = 1.2 \text{ kg/m}^3 \]

Working range
- stable regime in entire characteristic range
- fan can be operated beyond characteristic specified
- parallel connection possible, series connection after consultation with the manufacturers

Design features
- welded impeller with 8 vanes curved backward
  speed 1450rpm with FRP-impeller
- welded spiral casing
- motor outside the flow conveyed
- robust sheet metal base, zinc-coated
- vibration absorbers in range of delivery
- variant connectors of casing

PRINCIPAL DIMENSIONS
The principal dimensions refer to elastic connectors on inlet and outlet and for housing position 90R.
Height of axis is identical for all housing positions.

Further dimensions see page 27.
Number of vibration absorbers : 4
(in case of heavy motors 6)

Drawings in format dxf
--> MIETZSCH-CD

MOTOR VERSIONS for standard motor 3~400V/50Hz
(Data for other motors, such as polechanging or Ex, upon inquiry.)

<table>
<thead>
<tr>
<th>Fan type</th>
<th>Speed rpm</th>
<th>Power required kW</th>
<th>Nom. motor power kW</th>
<th>Nom. motor current A</th>
<th>Weight with motor kg</th>
<th>( L_{A3m} ) dB(A)</th>
<th>( L_{W3A} ) dB(A)</th>
<th>Octave-band ( L_{WA-Okt} ) / dB(A)</th>
</tr>
</thead>
<tbody>
<tr>
<td>VRE 450/731W710</td>
<td>710</td>
<td>0.87</td>
<td>1.1</td>
<td>2.9</td>
<td>162</td>
<td>57</td>
<td>75</td>
<td>62 68 72 69 65 63 60 56</td>
</tr>
<tr>
<td>VRE 450/731W950</td>
<td>950</td>
<td>2.08</td>
<td>2.2</td>
<td>5.2</td>
<td>167</td>
<td>63</td>
<td>81</td>
<td>68 72 78 75 70 67 65 60</td>
</tr>
<tr>
<td>VRE 450/731W1450 GfK</td>
<td>1450</td>
<td>7.48</td>
<td>7.5</td>
<td>15.1</td>
<td>196</td>
<td>72</td>
<td>90</td>
<td>77 80 88 84 79 76 73 64</td>
</tr>
</tbody>
</table>

GfK - impeller made of fibre reinforced plastic (FRP)

\[ L_{A3m} = A \text{ - weighted sound pressure level at distance of 3 m} \]
\[ L_{W3A} = A \text{ - weighted sound power level in duct} \]
Radial fans of plastic material
VRE 450 / 734
Impeller with forward curved vanes

PERFORMANCE

\[ \Delta p_t / \text{Pa} \]

\[ \dot{V} / \text{m}^3/\text{h} \]

\[ \dot{V} / \text{m}^3/\text{s} \]

PRINCIPAL DIMENSIONS
The principal dimensions refer to elastic connectors on inlet and outlet and for housing position 90R.
Height of axis is identical for all housing positions.
Further dimensions see page 27.
Number of vibration absorbers: 4 (in case of heavy motors 6)
Drawings in format dxf --> MIETZSCH-CD

MOTOR VERSIONS for standard motor 3~400V/50Hz
(Data for other motors, such as polechanging or Ex, upon inquiry.)

<table>
<thead>
<tr>
<th>fan type</th>
<th>speed</th>
<th>power required</th>
<th>nom. motor power</th>
<th>nom. motor current</th>
<th>weight with motor</th>
<th>( L_{A3m} )</th>
<th>( L_{WA} )</th>
</tr>
</thead>
<tbody>
<tr>
<td>VRE 450/734W710</td>
<td>710</td>
<td>7,25</td>
<td>7,5</td>
<td>17,7</td>
<td>226</td>
<td>66</td>
<td>83</td>
</tr>
<tr>
<td>VRE 450/734W950</td>
<td>950</td>
<td>14,5</td>
<td>15,0</td>
<td>31,5</td>
<td>271</td>
<td>71</td>
<td>89</td>
</tr>
</tbody>
</table>

\( L_{A3m} = A \) - weighted sound pressure level at distance of 3 m
\( L_{WA} = A \) - weighted sound power level in duct

Working range
- stable regime in entire characteristic range
- operation with larger volumetric flows may lead to motor
- parallel and series connection possible after consultation with the manufacturers

Design features
- welded impeller with 35 vanes curved forward
- welded spiral casing
- motor outside the flow conveyed
- robust sheet metal base, zinc-coated
- vibration absorbers in range of delivery
- variant connectors of casing
Radial fans of plastic material
VRE 500 / 731
Impeller with backward curved vanes

Working range
- stable regime in entire characteristic range
- fan can be operated beyond characteristic specified
- parallel connection possible, series connection after consultation with the manufacturers

Design features
- welded impeller with 8 vanes curved backward
- speed 1450rpm with FRP-impeller
- welded spiral casing
- motor outside the flow conveyed
- robust sheet metal base, zinc-coated
- vibration absorbers in range of delivery
- variant connectors of casing

PRINCIPAL DIMENSIONS
The principal dimensions refer to elastic connectors on inlet and outlet and for housing position 90R. Height of axis is identical for all housing positions.
Further dimensions see page 27.
Number of vibration absorbers: 4
(in case of heavy motors 6)
Drawings in format dxf
--> MIETZSCH-CD

MOTOR VERSIONS for standard motor 3~400V/50Hz
(Data for other motors, such as polechanging or Ex, upon inquiry.)

<table>
<thead>
<tr>
<th>fan type</th>
<th>speed rpm</th>
<th>power required kW</th>
<th>nom. motor kW</th>
<th>nom. motor current A</th>
<th>weight with motor kg</th>
<th>L_{A,3m} dB(A)</th>
<th>L_{WA,125} dB(A)</th>
<th>L_{WA,500} dB(A)</th>
<th>L_{WA,1000} dB(A)</th>
<th>L_{WA,2000} dB(A)</th>
<th>L_{WA,4000} dB(A)</th>
<th>L_{WA,8000} dB(A)</th>
</tr>
</thead>
<tbody>
<tr>
<td>VRE 500/731W710</td>
<td>710</td>
<td>1,42</td>
<td>1,5</td>
<td>3,9</td>
<td>185</td>
<td>59</td>
<td>79</td>
<td>67</td>
<td>72</td>
<td>69</td>
<td>67</td>
<td>64</td>
</tr>
<tr>
<td>VRE 500/731W950</td>
<td>950</td>
<td>3,6</td>
<td>4,0</td>
<td>9,4</td>
<td>195</td>
<td>66</td>
<td>85</td>
<td>72</td>
<td>75</td>
<td>69</td>
<td>72</td>
<td>70</td>
</tr>
<tr>
<td>VRE 500/731W1450 GfK</td>
<td>1450</td>
<td>13,1</td>
<td>15,0</td>
<td>26,5</td>
<td>250</td>
<td>75</td>
<td>93</td>
<td>80</td>
<td>83</td>
<td>91</td>
<td>87</td>
<td>82</td>
</tr>
</tbody>
</table>

GfK - impeller made of fibre reinforced plastic (FRP)

L_{A,3m} = A - weighted sound pressure level at distance of 3 m
L_{WA} = A - weighted sound power level in duct
Radial fans of plastic material

VRE 500 / 734

Impeller with forward curved vanes

**PERFORMANCE**

![Graph showing performance characteristics with various values for \( \Delta p_t / \text{Pa} \) and \( V / \text{m}^3/\text{h} \) and \( V / \text{m}^3/\text{s} \).]

**Working range**
- stable regime in entire characteristic range
- operation with larger volumetric flows may lead to motor
- parallel and series connection possible after consultation with the manufacturers

**Design features**
- welded impeller with 35 vanes curved forward
- welded spiral casing
- motor outside the flow conveyed
- robust sheet metal base, zinc-coated
- vibration absorbers in range of delivery
- variant connectors of casing

**PRINCIPAL DIMENSIONS**

The principal dimensions refer to elastic connectors on inlet and outlet and for housing position 90R. Height of axis is identical for all housing positions.

Further dimensions see page 27.

Number of vibration absorbers : 4
(in case of heavy motors 6)

Drawings in format dxf
--> MIETZSCH-CD

**MOTOR VERSIONS** for standard motor 3~400V/50Hz
(Data for other motors, such as polechanging or Ex, upon inquiry.)

<table>
<thead>
<tr>
<th>fan type</th>
<th>speed rpm</th>
<th>power required kW</th>
<th>nom. motor power kW</th>
<th>nom. motor current A</th>
<th>weight with motor kg</th>
<th>( L_{A3m} ) dB(A)</th>
<th>( L_{WA} ) dB(A)</th>
<th>octave-band ( L_{WA,01h} ) / dB(A)</th>
</tr>
</thead>
<tbody>
<tr>
<td>VRE 500/734W710</td>
<td>710</td>
<td>12,6</td>
<td>15,0</td>
<td>31,5</td>
<td>352</td>
<td>69</td>
<td>86</td>
<td>69</td>
</tr>
<tr>
<td>VRE 500/734W950</td>
<td>950</td>
<td>20,6</td>
<td>22,0</td>
<td>45,5</td>
<td>359</td>
<td>75</td>
<td>92</td>
<td>77</td>
</tr>
</tbody>
</table>

\( L_{A3m} = A \)-weighted sound pressure level at distance of 3 m
\( L_{WA} = A \)-weighted sound power level in duct
Radial fans of plastic material
VRE 560 / 731
Impeller with backward curved vanes

**PERFORMANCE**

<table>
<thead>
<tr>
<th>$\Delta p_t / \text{Pa}$</th>
<th>$\dot{V} / \text{m}^3/\text{s}$</th>
<th>$\dot{V} / \text{m}^3/\text{h}$</th>
</tr>
</thead>
<tbody>
<tr>
<td>2000</td>
<td>1,0</td>
<td>1,0</td>
</tr>
<tr>
<td>3000</td>
<td>2,0</td>
<td>2,0</td>
</tr>
<tr>
<td>4000</td>
<td>3,0</td>
<td>3,0</td>
</tr>
<tr>
<td>5000</td>
<td>4,0</td>
<td>4,0</td>
</tr>
<tr>
<td>6000</td>
<td>5,0</td>
<td>5,0</td>
</tr>
</tbody>
</table>

$\rho = 1,2 \text{ kg/m}^3$

**Working range**
- stable regime in entire characteristic range
- fan can be operated beyond characteristic specified
- parallel connection possible, series connection after consultation with the manufacturers

**Design features**
- welded impeller with 8 vanes curved backward
- speed 1450rpm with FRP-impeller
- welded spiral casing
- motor outside the flow conveyed
- robust sheet metal base, zinc-coated
- vibration absorbers in range of delivery
- variant connectors of casing

**PRINCIPAL DIMENSIONS**
The principal dimensions refer to elastic connectors on inlet and outlet and for housing position 90R.
Height of axis is identical for all housing positions.
Further dimensions see page 27.
Number of vibration absorbers : 4
(in case of heavy motors 6)
Drawings in format dxf
--> MIETZSCH-CD

**MOTOR VERSIONS** for standard motor 3~400V/50Hz
(Data for other motors, such as polechanging or Ex, upon inquiry.)

<table>
<thead>
<tr>
<th>fan type</th>
<th>speed rpm</th>
<th>power required kW</th>
<th>nom. motor power kW</th>
<th>nom. motor current A</th>
<th>weight with motor kg</th>
<th>$L_{A,3m}$ dB(A)</th>
<th>$L_{W,A}$ dB(A)</th>
</tr>
</thead>
<tbody>
<tr>
<td>VRE 560/731W710</td>
<td>710</td>
<td>2,6</td>
<td>3,0</td>
<td>7,6</td>
<td>245</td>
<td>63</td>
<td>82</td>
</tr>
<tr>
<td>VRE 560/731W950</td>
<td>950</td>
<td>6,6</td>
<td>7,5</td>
<td>17,0</td>
<td>270</td>
<td>69</td>
<td>88</td>
</tr>
<tr>
<td>VRE 560/731W1450 GfK</td>
<td>1450</td>
<td>23,4</td>
<td>30,0</td>
<td>55,0</td>
<td>367</td>
<td>79</td>
<td>97</td>
</tr>
</tbody>
</table>

GfK - impeller made of fibre reinforced plastic (FRP)

$L_{A,3m} = A$ - weighted sound pressure level at distance of 3 m
$L_{W,A} = A$ - weighted sound power level in duct
Radial fans of plastic material
VRE 560 / 734
Impeller with forward curved vanes

PERFORMANCE

Working range
- stable regime in entire characteristic range
- operation with larger volumetric flows may lead to motor
- parallel and series connection possible after consultation with the manufacturers

Design features
- welded impeller with 35 vanes curved forward
- welded spiral casing
- motor outside the flow conveyed
- robust sheet metal base, zinc-coated
- vibration absorbers in range of delivery
- variant connectors of casing

PRINCIPAL DIMENSIONS
The principal dimensions refer to elastic connectors on inlet and outlet and for housing position 90R.
Height of axis is identical for all housing positions.
Further dimensions see page 27.
Number of vibration absorbers : 4
(in case of heavy motors 6)
Drawings in format dxf
--> MIETZSCH-CD

MOTOR VERSIONS for standard motor 3~400V/50Hz
(Data for other motors, such as polechanging or Ex, upon inquiry.)

<table>
<thead>
<tr>
<th>fan type</th>
<th>speed rpm</th>
<th>power required kW</th>
<th>nom. motor power kW</th>
<th>nom. motor current A</th>
<th>weight with motor kg</th>
<th>$L_{A3m}$ dB(A)</th>
<th>$L_{WA}$ dB(A)</th>
<th>octave-band $L_{WA,OKI}$ / dB(A)</th>
</tr>
</thead>
<tbody>
<tr>
<td>VRE 560/734W710</td>
<td>710</td>
<td>21,0</td>
<td>22,0</td>
<td>44,5</td>
<td>439</td>
<td>73</td>
<td>89</td>
<td>125 250 500 1000 2000 4000 8000</td>
</tr>
<tr>
<td>VRE 560/734W950</td>
<td>950</td>
<td>36,0</td>
<td>37,0</td>
<td>70,0</td>
<td>592</td>
<td>78</td>
<td>95</td>
<td>125 250 500 1000 2000 4000 8000</td>
</tr>
</tbody>
</table>

$L_{A3m}$ = A - weighted sound pressure level at distance of 3 m
$L_{WA}$ = A - weighted sound power level in duct
Radial fans of plastic material
VRE 100 ... 250 (PVC, PPs)

Dimensions

### MAIN DIMENSIONS
Casings of sizes 100 ... 250 made of PVC or PPs consist of two deep-drawn half shells welded together.
The dimension sketch shows **housing position 090R**.
For other positions the manufacturers turn the casing around the fan axis.
The smooth connection on the suction and pressure sides has diameter \( d = \) nominal diameter.
Many connection variants are possible to meet customers' demands.

Design version ELA, vibration isolators, and a condensate bore with closing cap are elements of the standard range of delivery. Other versions have to be ordered separately.

**Drawings in format dxf -> MIETZSCH-CD**

**Casing connection - suction side**
- **F**: rigid connection, round
  - flange welded on and undrilled/drilled 1
- **KOF**: elastic connection, round
  - compensator welded on flange undrilled/drilled 1
- **ELA**: elastic connection, round
  - connecting element of flexible PVC, fastened with band clamp

**Casing connection-pressure side**
- **F**: rigid connection, round
  - flange welded on and undrilled/drilled 1
- **KOF**: elastic connection, round
  - compensator welded on flange undrilled/drilled 1
- **ELA**: elastic connection, round
  - connecting element of flexible PVC, fastened with band clamp

**Housing position 090R**

**Fan dimensions**

<table>
<thead>
<tr>
<th>Fan size</th>
<th>( \phi d )</th>
<th>c</th>
<th>e1</th>
<th>e3</th>
<th>e4</th>
<th>e5</th>
<th>g1</th>
<th>g2</th>
<th>g3</th>
<th>g4</th>
<th>g5</th>
<th>g6</th>
<th>h</th>
<th>hiso</th>
<th>lmax</th>
</tr>
</thead>
<tbody>
<tr>
<td>VRE 100</td>
<td>110</td>
<td>105</td>
<td>204</td>
<td>198</td>
<td>-40</td>
<td>50</td>
<td>144</td>
<td>109</td>
<td>119</td>
<td>120</td>
<td>145</td>
<td>178</td>
<td>240</td>
<td>20</td>
<td>510</td>
</tr>
<tr>
<td>VRE 160</td>
<td>160</td>
<td>141</td>
<td>274</td>
<td>319</td>
<td>4</td>
<td>60</td>
<td>222</td>
<td>168</td>
<td>179</td>
<td>194</td>
<td>190</td>
<td>264</td>
<td>332</td>
<td>20</td>
<td>685</td>
</tr>
<tr>
<td>VRE 200</td>
<td>200</td>
<td>169</td>
<td>306</td>
<td>370</td>
<td>17</td>
<td>70</td>
<td>278</td>
<td>210</td>
<td>224</td>
<td>240</td>
<td>240</td>
<td>330</td>
<td>395</td>
<td>20</td>
<td>730</td>
</tr>
<tr>
<td>VRE 250</td>
<td>250</td>
<td>203</td>
<td>332</td>
<td>480</td>
<td>52</td>
<td>110</td>
<td>346</td>
<td>264</td>
<td>280</td>
<td>298</td>
<td>290</td>
<td>412</td>
<td>460</td>
<td>25</td>
<td>890</td>
</tr>
</tbody>
</table>

**Dimensions for casing connections**

<table>
<thead>
<tr>
<th>Fan size</th>
<th>( \phi d )</th>
<th>( l_1 )</th>
<th>( l_2 )</th>
<th>( l_3 )</th>
</tr>
</thead>
<tbody>
<tr>
<td>VRE 100</td>
<td>110</td>
<td>60</td>
<td>70</td>
<td>4</td>
</tr>
<tr>
<td>VRE 160</td>
<td>160</td>
<td>125</td>
<td>135</td>
<td>5</td>
</tr>
<tr>
<td>VRE 200</td>
<td>200</td>
<td>125</td>
<td>135</td>
<td>5</td>
</tr>
<tr>
<td>VRE 250</td>
<td>250</td>
<td>125</td>
<td>135</td>
<td>5</td>
</tr>
</tbody>
</table>

L1, I2, and I3 are functional dimensions applying to the corresponding casing connection.
In the case of KOF, for instance, the distance fan axis/flange amounts to \( c + I2 \) or \( g5 + I2 \).

1) Flanges (round) and frames (rectangular) are made according to MIETZSCH standard MWS 53030.

Drilling pattern:
- 0 undrilled (such as FO, KOFO)
- 1 drilled according to series 1 for normal applications (such as KOF1)
- 2 drilled according to series 2 (double number of screws) for high pressures and large quantities of condensate (such as F2, KOF2)
Radial fans of plastic material
VRE 315 ... 560

**MAIN DIMENSIONS**

Casings of sizes 315 ... 560 consist of two even side walls and one jacket welded together. The dimension sketch shows **housing position 090R**. For other positions the manufacturers turn the casing around the fan axis.

The smooth connection on the suction side has diameter \( d = \text{nominal diameter} \). The smooth connection on the pressure side is rectangular \( a \times b \).

Many connection variants are possible to meet customers' demands.

Design version ELA, vibration isolators, and a condensate bore with closing cap are elements of the standard range of delivery. Other versions have to be ordered separately.

Drawings in format dxf --> MIETZSCH-CD

**Casing connection - suction side**

<table>
<thead>
<tr>
<th><strong>Casing connection-pressure side</strong></th>
</tr>
</thead>
<tbody>
<tr>
<td>( R_) rigid connection, rectangular</td>
</tr>
<tr>
<td>flange welded on ( 1) ) and undrilled/drilled ( 1) )</td>
</tr>
<tr>
<td>( KOR_ ) elastic connection, rectangular</td>
</tr>
<tr>
<td>compensator welded on flange undrilled/drilled ( 1) )</td>
</tr>
<tr>
<td>( RSF_ ) rigid connection, round</td>
</tr>
<tr>
<td>transition, flange welded on ( 1) ) and undrilled/drilled ( 1) )</td>
</tr>
<tr>
<td>( KOF_ ) elastic connection, round</td>
</tr>
<tr>
<td>transition</td>
</tr>
<tr>
<td>compensator welded on flange undrilled/drilled ( 1) )</td>
</tr>
<tr>
<td>( ELA_ ) elastic connection, round</td>
</tr>
<tr>
<td>transition</td>
</tr>
<tr>
<td>connecting element of flexible PVC</td>
</tr>
<tr>
<td>fastened with band clamp</td>
</tr>
</tbody>
</table>

**Fan dimensions**

<table>
<thead>
<tr>
<th>Fan size</th>
<th>Ø d</th>
<th>a</th>
<th>b</th>
<th>c</th>
<th>e1</th>
<th>e2</th>
<th>e3</th>
<th>e4</th>
<th>e5</th>
<th>g1</th>
<th>g2</th>
<th>g3</th>
<th>g4</th>
<th>g5</th>
<th>g6</th>
<th>h</th>
<th>hiso</th>
<th>lmax</th>
</tr>
</thead>
<tbody>
<tr>
<td>VRE 315</td>
<td>315</td>
<td>288</td>
<td>300</td>
<td>244</td>
<td>425</td>
<td>490</td>
<td>710</td>
<td>120</td>
<td>120</td>
<td>435</td>
<td>324</td>
<td>353</td>
<td>376</td>
<td>354</td>
<td>527</td>
<td>605</td>
<td>25</td>
<td>1030</td>
</tr>
<tr>
<td>VRE 400</td>
<td>400</td>
<td>370</td>
<td>380</td>
<td>284</td>
<td>466</td>
<td>540</td>
<td>720</td>
<td>160</td>
<td>160</td>
<td>555</td>
<td>412</td>
<td>479</td>
<td>492</td>
<td>476</td>
<td>666</td>
<td>740</td>
<td>30</td>
<td>1210</td>
</tr>
<tr>
<td>VRE 450</td>
<td>450</td>
<td>416</td>
<td>429</td>
<td>329</td>
<td>540</td>
<td>790</td>
<td>884</td>
<td>185</td>
<td>185</td>
<td>624</td>
<td>464</td>
<td>503</td>
<td>539</td>
<td>514</td>
<td>691</td>
<td>751</td>
<td>40</td>
<td>1250</td>
</tr>
<tr>
<td>VRE 500</td>
<td>500</td>
<td>466</td>
<td>484</td>
<td>346</td>
<td>580</td>
<td>860</td>
<td>957</td>
<td>202</td>
<td>202</td>
<td>691</td>
<td>514</td>
<td>562</td>
<td>596</td>
<td>554</td>
<td>754</td>
<td>835</td>
<td>90</td>
<td>1310</td>
</tr>
<tr>
<td>VRE 560</td>
<td>560</td>
<td>517</td>
<td>573</td>
<td>383</td>
<td>580</td>
<td>1050</td>
<td>1083</td>
<td>229</td>
<td>229</td>
<td>774</td>
<td>575</td>
<td>629</td>
<td>668</td>
<td>626</td>
<td>834</td>
<td>1040</td>
<td>1005</td>
<td>1200</td>
</tr>
</tbody>
</table>

**Dimensions for casing connections**

<table>
<thead>
<tr>
<th>Fan size</th>
<th>Ø d</th>
<th>a</th>
<th>b</th>
<th>c1</th>
<th>c2</th>
<th>c3</th>
<th>h1</th>
<th>h2</th>
<th>h3</th>
<th>h4</th>
<th>h5</th>
<th>h6</th>
</tr>
</thead>
<tbody>
<tr>
<td>VRE 315</td>
<td>315</td>
<td>288</td>
<td>300</td>
<td>125</td>
<td>135</td>
<td>125</td>
<td>6</td>
<td>6</td>
<td>135</td>
<td>256</td>
<td>375</td>
<td>385</td>
</tr>
<tr>
<td>VRE 400</td>
<td>400</td>
<td>370</td>
<td>380</td>
<td>125</td>
<td>135</td>
<td>125</td>
<td>6</td>
<td>6</td>
<td>135</td>
<td>256</td>
<td>375</td>
<td>385</td>
</tr>
<tr>
<td>VRE 450</td>
<td>450</td>
<td>416</td>
<td>429</td>
<td>125</td>
<td>135</td>
<td>125</td>
<td>6</td>
<td>6</td>
<td>135</td>
<td>256</td>
<td>375</td>
<td>385</td>
</tr>
<tr>
<td>VRE 500</td>
<td>500</td>
<td>466</td>
<td>484</td>
<td>125</td>
<td>135</td>
<td>125</td>
<td>6</td>
<td>6</td>
<td>135</td>
<td>256</td>
<td>375</td>
<td>385</td>
</tr>
<tr>
<td>VRE 560</td>
<td>560</td>
<td>517</td>
<td>573</td>
<td>125</td>
<td>135</td>
<td>125</td>
<td>6</td>
<td>6</td>
<td>135</td>
<td>256</td>
<td>375</td>
<td>385</td>
</tr>
</tbody>
</table>

1) Flanges (round) and frames (rectangular) are made according to MIETZSCH standard MWS 53030.

Drilling pattern:
- 0 undrilled (such as FO, KOF0)
- 1 drilled according to series 1 for normal applications (such as KOF1)
- 2 drilled according to series 2 (double number of screws) for high pressures and large quantities of condensate (such as F2, KOF2)

I and h are functional dimensions applying to the corresponding casing connection.

In the case of KOF, for instance, the distance fan axis/flange amounts to \( c + i2 \) or \( g5 + h6 \).
Main Dimensions
In case of special materials (PE, PVDF, electrically conductive materials) casings of sizes 100 ... 250 consist of two even side walls and one jacket welded together. The dimension sketch shows housing position 090R. For other positions the manufacturers turn the casing around the fan axis.

The smooth connection on the suction side has diameter \( d = \) nominal diameter. The smooth connection on the pressure side is rectangular \( a \times b \). Many connection variants are possible to meet customers’ demands.

Design version ELA, vibration isolators, and a condensate bore with closing cap are elements of the standard range of delivery. Other versions have to be ordered separately.

Drawings in format dxf --> MIETZSCH-CD

Casing connection - suction side

Dimensions for casing connections

In the case of KOF, for instance, the distance fan axis/flange amounts to \( c + l2 \) or \( g5 + h6 \).

Fan dimensions

<table>
<thead>
<tr>
<th>Fan size</th>
<th>( \varnothing d )</th>
<th>a</th>
<th>b</th>
<th>c</th>
<th>e1</th>
<th>e3</th>
<th>e4</th>
<th>e5</th>
<th>g1</th>
<th>g2</th>
<th>g3</th>
<th>g4</th>
<th>g5</th>
<th>g6</th>
<th>h</th>
<th>hi</th>
<th>lmax</th>
</tr>
</thead>
<tbody>
<tr>
<td>VRE 100</td>
<td>110</td>
<td>96</td>
<td>102</td>
<td>105</td>
<td>204</td>
<td>198</td>
<td>50</td>
<td>144</td>
<td>109</td>
<td>119</td>
<td>120</td>
<td>145</td>
<td>178</td>
<td>240</td>
<td>20</td>
<td>510</td>
<td></td>
</tr>
<tr>
<td>VRE 160</td>
<td>160</td>
<td>144</td>
<td>152</td>
<td>141</td>
<td>274</td>
<td>310</td>
<td>40</td>
<td>222</td>
<td>168</td>
<td>179</td>
<td>194</td>
<td>190</td>
<td>264</td>
<td>332</td>
<td>20</td>
<td>685</td>
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</tr>
<tr>
<td>VRE 200</td>
<td>200</td>
<td>180</td>
<td>187</td>
<td>169</td>
<td>306</td>
<td>370</td>
<td>51</td>
<td>278</td>
<td>210</td>
<td>224</td>
<td>240</td>
<td>330</td>
<td>395</td>
<td>240</td>
<td>25</td>
<td>730</td>
<td></td>
</tr>
<tr>
<td>VRE 250</td>
<td>250</td>
<td>226</td>
<td>236</td>
<td>203</td>
<td>332</td>
<td>480</td>
<td>52</td>
<td>346</td>
<td>264</td>
<td>280</td>
<td>298</td>
<td>320</td>
<td>412</td>
<td>460</td>
<td>25</td>
<td>890</td>
<td></td>
</tr>
</tbody>
</table>

Dimensions for casing connections

<table>
<thead>
<tr>
<th>Fan size</th>
<th>( \varnothing d )</th>
<th>a</th>
<th>b</th>
<th>c</th>
<th>e1</th>
<th>e2</th>
<th>e3</th>
<th>h1</th>
<th>h2</th>
<th>h3</th>
<th>h4</th>
<th>h5</th>
<th>h6</th>
<th>lmax</th>
</tr>
</thead>
<tbody>
<tr>
<td>VRE 100</td>
<td>110</td>
<td>96</td>
<td>102</td>
<td>70</td>
<td>4</td>
<td>4</td>
<td>135</td>
<td>104</td>
<td>135</td>
<td>135</td>
<td>225</td>
<td>235</td>
<td>25</td>
<td>120</td>
</tr>
<tr>
<td>VRE 160</td>
<td>160</td>
<td>144</td>
<td>152</td>
<td>70</td>
<td>4</td>
<td>4</td>
<td>135</td>
<td>104</td>
<td>135</td>
<td>135</td>
<td>225</td>
<td>265</td>
<td>25</td>
<td>120</td>
</tr>
<tr>
<td>VRE 200</td>
<td>200</td>
<td>180</td>
<td>187</td>
<td>135</td>
<td>5</td>
<td>5</td>
<td>135</td>
<td>135</td>
<td>135</td>
<td>135</td>
<td>275</td>
<td>25</td>
<td>20</td>
<td>120</td>
</tr>
<tr>
<td>VRE 250</td>
<td>250</td>
<td>226</td>
<td>236</td>
<td>135</td>
<td>5</td>
<td>5</td>
<td>135</td>
<td>135</td>
<td>135</td>
<td>135</td>
<td>325</td>
<td>335</td>
<td>20</td>
<td>20</td>
</tr>
</tbody>
</table>

1) Flanges (round) and frames (rectangular) are made according to MIETZSCH standard MWS 53030.
Drilling pattern:
0 undrilled (such as FO, KOF0)
1 drilled according to series 1 for normal applications (such as KOF1)
2 drilled according to series 2 (double number of screws) for high pressures and large quantities of condensate (such as F2, KOF2)
Radial fans of plastic material

Accessories

**Shatter guard SPS and SPSG**
Many years of practical tests have led to a design with safe dimensioning of the fans VRE. A breakdown can be excluded if all conditions of use are met.
If an impermissible mode of operation cannot be prevented safely, we recommend the use of a shatter guard of soft PVC foil laid around the housing jacket. A threat to the surrounding by shatters is excluded even in the case of impeller damage by substances sticking to the impeller or by influence of foreign bodies, for instance.

**How to order:**
- SPS - shatter guard of PVC foil
- SPSG - shatter guard of PVC foil
  with additional wire grating

More safety is possible by reinforcement of the casing jacket with glass fibre-reinforced plastic (GRP).

**Weather guard for motor**
The standard versions of motors are of IP 54 which means protection against splash water from all directions. In the case of outdoor arrangement, an additional guard against all atmospheric influences should be used.

**How to order:** WS - weather guard

**Cleaning opening**
Cleaning of the impeller requires the fan to be taken out of the plant and the intake socket to be opened.
An additional cleaning opening (see picture) is advisable for reducing maintenance in cases of larger fans and intense soiling.

**How to order:** ROE - cleaning opening

**Condensate drain KSS / KSV / KSF**
Every fan has a condensate bore with closing cap in its deepest position.
Several sockets for connection of a condensate line are optional.

**How to order:**
- KSS - condensate socket, diameter 22 mm for hose ¾"
- KSV - condensate socket with screwing fixture
  seal of EDPM
- KSF - condensate socket with flange ISO/DIN 2501 PN10

---

<table>
<thead>
<tr>
<th>Cleaning opening</th>
<th>Fan size</th>
<th>Ø D</th>
</tr>
</thead>
<tbody>
<tr>
<td>VRE 315</td>
<td>110</td>
<td></td>
</tr>
<tr>
<td>VRE 400</td>
<td>140</td>
<td></td>
</tr>
<tr>
<td>VRE 450</td>
<td>160</td>
<td></td>
</tr>
<tr>
<td>VRE 500</td>
<td>180</td>
<td></td>
</tr>
<tr>
<td>VRE 560</td>
<td>225</td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Condensate drain</th>
<th>Fan size</th>
<th>Ø D</th>
</tr>
</thead>
<tbody>
<tr>
<td>VRE 100</td>
<td>20</td>
<td></td>
</tr>
<tr>
<td>VRE 160 ... 200</td>
<td>25</td>
<td></td>
</tr>
<tr>
<td>VRE 250 ... 450</td>
<td>32</td>
<td></td>
</tr>
<tr>
<td>VRE 500 ... 560</td>
<td>40</td>
<td></td>
</tr>
</tbody>
</table>
Radial fans of plastic material
Electrical accessories

Repair switch RS
The repair switch RS is used to disconnect the fan completely from the mains in cases of repair and maintenance. This excludes the risk of accidents arising from unauthorized activation. The switch is supplied as a separate unit or fastened and wired on the fan.
The switch size is determined by the motor power and mains voltage.

<table>
<thead>
<tr>
<th>Repair switch</th>
<th>Type</th>
<th>Switching capacity / kW</th>
</tr>
</thead>
<tbody>
<tr>
<td>three-pole</td>
<td></td>
<td></td>
</tr>
<tr>
<td>(for single-phase and</td>
<td>3(1)x230V</td>
<td></td>
</tr>
<tr>
<td>three-phase motors)</td>
<td>3x400V</td>
<td></td>
</tr>
<tr>
<td>with auxiliary contact</td>
<td>3x500V</td>
<td></td>
</tr>
<tr>
<td>degree of protection IP 65</td>
<td></td>
<td></td>
</tr>
<tr>
<td>RS 20 A / HS</td>
<td>3,5</td>
<td>6,5</td>
</tr>
<tr>
<td>RS 25 A / HS</td>
<td>7</td>
<td>13</td>
</tr>
<tr>
<td>RS 32 A / HS</td>
<td>8,5</td>
<td>15</td>
</tr>
<tr>
<td>RS 63 A / HS</td>
<td>18,5</td>
<td>37</td>
</tr>
<tr>
<td>RS 100 A / HS</td>
<td>30</td>
<td>50</td>
</tr>
</tbody>
</table>

Fan connection through a frequency inverter requires the cable connection to be shielded.
Six-pole switches are used for pole-changing motors. Explosion-proof motors are equipped with switches with explosion protection EEX de IIC/CT6 according to ATEX.

Motor protection switch MS
Every motor has to be connected to the supply system through a protective device with reclosing blocking. Protective switches of type MS are three-pole low voltage switching appliances used for single-phase and three-phase motors. They protect the motor from impermissible overload and are used simultaneously for fan activation and deactivation in normal operation.
The switch is supplied as a separate unit or fastened and wired on the fan.
It has to be set according to the particular nominal motor current.

Pole-changing motors require a switch for every speed rate. Explosion-proof motors are equipped with switches with explosion protection EEX de IIC/CT6 according to ATEX.

<table>
<thead>
<tr>
<th>Motor protection switch</th>
<th>Type</th>
<th>Currant range / A</th>
</tr>
</thead>
<tbody>
<tr>
<td>three-pole</td>
<td></td>
<td></td>
</tr>
<tr>
<td>(for single-phase and</td>
<td></td>
<td></td>
</tr>
<tr>
<td>three-phase motors)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>degree of protection IP 54</td>
<td></td>
<td></td>
</tr>
<tr>
<td>MS 1.0</td>
<td>0,6 ... 1,0</td>
<td></td>
</tr>
<tr>
<td>MS 1.6</td>
<td>1,0 ... 1,6</td>
<td></td>
</tr>
<tr>
<td>MS 2.5</td>
<td>1,6 ... 2,5</td>
<td></td>
</tr>
<tr>
<td>MS 4.0</td>
<td>2,5 ... 4,0</td>
<td></td>
</tr>
<tr>
<td>MS 6.3</td>
<td>4,0 ... 6,3</td>
<td></td>
</tr>
<tr>
<td>MS 10.0</td>
<td>6,3 ... 10</td>
<td></td>
</tr>
<tr>
<td>MS 16.0</td>
<td>10 ... 16</td>
<td></td>
</tr>
<tr>
<td>MS 20.0</td>
<td>16 ... 20</td>
<td></td>
</tr>
<tr>
<td>MS 25.0</td>
<td>20 ... 25</td>
<td></td>
</tr>
<tr>
<td>MS 32.0</td>
<td>25 ... 32</td>
<td></td>
</tr>
<tr>
<td>MS 40.0</td>
<td>32 ... 40</td>
<td></td>
</tr>
</tbody>
</table>

Frequency inverter FU 0.18 ... 15.0-A31
The inverter FU ... A31 permits many simple control and regulation problems to be solved in a very convenient way if its numerous functions are utilized and some additional components added.
On this basis MIETZSCH supply individual applications such as speed setting by means of integrated potentiometer, stepped regime, time-control activation, pressure or volume flow control and many others. The user gets a complete system (fan, inverter, switches, signal lamps, measuring appliances, sensors etc.) which is immediately ready for operation when the electrical connections have been made. All necessary setting and programming work is done by the manufacturers.

Example: Volume flow control with alarming if rated value is fallen below
Radial fans of plastic material – direct drive
Mietzsch Lufttechnik - Series VRE / W

Object:
Impeller optionally of PVC / PPs welded / FRP laminated, with balancing quality G 6.3 according to ISO 1940, fly-mounted on a shaft
Spiral casing optionally of PVC / PPs, sucking on one side, with condensate drain
Shaft seal: without seal / GD-technical gastight
Direct drive by standard motor outside the flow conveyed
Design in single-phase / three-phase / pole-changing
Motor protection: no / thermistor (TS)
Robust base, welded, for location of fan and motor
Corrosion protection: zinc-coated / painted, vibration absorbers included
Safety equipment according to VDMA 24 167

VRE ___ / ___ W ___ ___ ___ ___ ___ - ___ ___ ___ ___ ___ ___ ___ ___
Nominal size
Impeller type
Nominal speed
Special version
Housing position / direction of rotation
Material casing / impeller

Volumetric flow : ___________ m³/h
Total pressure increase : ___________ Pa
Temperature of medium : ___________ °C
Motor power : ___________ kW
Voltage / Frequency : ___________ V ____ Hz
Rated motor current : ___________ A
Fan speed : ___________ rpm
Sound level Lₐ₃m : ___________ dB(A)
Weight : ___________ kg

Media / use:
Special accessories and special equipment
• Connection suction side: ELA-elastic (circular) / KOF-compensator with flange (circular)
• Connection pressure side: ELA-elastic / KOF-compensator
• Condensate drain: drilling with cap / neck with cap or fitting
• Shutter guard: PVC-foil / PVC-foil with wire screen
• Weather guard for motor
• Cleaning opening
• Repair switch: single / mounted, 3-poles with auxiliary contact / 6-poles with auxiliary switch
• Motor protection switch: single / mounted
• Other accessories
Radial fans of plastic material – direct drive
explosion-proof
Mietzsch Lufttechnik - Series VRE / W

Object:
Permitted for EX-Catgerie according to EU-guideline 94/9/EG (ATEX):

<table>
<thead>
<tr>
<th>Location in relation to the fan</th>
<th>Category gas area 1</th>
<th>Category gas area 2</th>
<th>No EX-area</th>
</tr>
</thead>
<tbody>
<tr>
<td>Inside</td>
<td>II 3G c IIb+H2 T3</td>
<td>II 3G c IIb+H2 T3</td>
<td>no</td>
</tr>
<tr>
<td>Outside</td>
<td>II 2G c IIb+H2 T3</td>
<td>II 3G c IIb+H2 T3</td>
<td>no</td>
</tr>
</tbody>
</table>

Impeller optionally of PVC / PPs welded / FRP laminated or electrically conductive plastic (PVCX,PPsX) welded with balancing quality G 6.3 according to ISO 1940, fly-mounted on a shaft.

Spiral casing optionally of PVC / PPs or electrically conductive plastic (PVCX,PPsX) sucking on one side, with condensate drain.

Shaft seal: without seal / GD-technical gastight

Direct drive with **EX-motor** outside the flow conveyed.

Protection: EEXe II - increased safety
EEXde II - flameproof enclosure

Direct drive by **standard motor** (no EX-protection) outside the flow conveyed.

Design in single-phase / three-phase / pole-changing

Motor protection: no / thermistor (TS)

Robust base, welded, for location of fan and motor

Corrosion protection: zinc-coated / painted, vibration absorbers included

Safety equipment according to VDMA 24 167

**VRE ____ / ____ W ____ _ _ _ _ _ _ _ _ **

Nominal size _______ Impeller type _______
Nominal speed ______ Special version _______
Housing position / direction of rotation _______
Material casing / impeller _______

Volumetric flow : _______________ m³/h
Total pressure increase : __________________ Pa
Temperature of medium : __________________ °C
Ambient temperature : __________________ °C
Motor power : __________________ kW
Voltage / Frequency : __________________ V ____ Hz
Rated motor current : __________________ A
Fan speed : __________________ rpm
Sound level Lₐ₃m : __________________ dB(A)
Weight : __________________ kg

Media / use:

**Special accessories and special equipment**
- Connection suction side: ELA-elastic (circular) / KOF-compensator with flange (circular)
- Connection pressure side: ELA-elastic / KOF-compensator with flange
- Condensate drain: drilling with cap / neck with cap or fitting
- Shutter guard: PVC-foil / PVC-foil with wire screen
- Weather guard for motor
- Cleaning opening
- Repair switch: single / mounted, 3-poles with auxiliary contact, standard / explosion-proof
- Motor protection switch: single / mounted, standard / explosion-proof
- Other accessories
radial fan VRE 500
standard design

fan made of PVDF
for extreme chemical demands

installation on tanks
os scrubbers
special design GAB

fan with base
made of plastic
Our program of products and services

Radial fans of plastic material
Direct and belt drive
up to about 80 000 m³/h and 3 500 Pa

Explosion-proof fans
according to ATEX for zone 1 and zone 2

Roof fans of all-plastic design
with many assembly accessories

Droplet eliminators and moisteners

Gas washers
for separation of gaseous dangerous substances,
dust/gas separators

Heat exchangers
for recovery of heat from moist and aggressive exhaust air

Containers of PVC, PP, PE
for liquids endangering water, according to water resources regulations, containers of composite design PVC/GFRP, PP/GFRP

Controlling and regulating elements and systems
Switches, motor protection devices, speed controllers,
frequency inverter, fan controls, flow supervision

Special designs of plastic materials
Devices, linings etc.

Engineering performances
Planning, calculation, and design, ventilation measurement on standardized test stands, low and high temperature test in company-own climatic test chambers

Rectangular and cylindrical silencers,
silencing casings in corrosion-proof design