- Any use in ambient temperatures below -10 °C is dependent on not being subjected to unusual, sudden or mechanical loads or stresses on the material (for the min. permissible ambient temperature please see the technical data).
- Before the first switch-on, remove any items that may be present (borings, screws and other foreign objects) from the intake area - risk of injury from any objects that may fly out!

⚠ WARNING

Parts of the rotor or the entire rotor coming loose in case of a fault (e.g. excessive vibrations)

can result in personal injury and material damage.

▷ Use guard grilles or suitable design measures for critical applications (e.g. refrigerating systems with refrigerant subject to the ordinance on hazardous substances).

4.2 Special installation features for explosion-protected motor impellers

In terms of material selection, due to special protective measures relating to possible contact surfaces between rotating and stationary components (impeller end plate, cover disk / inlet nozzle), ZIEHL-ABEGG centrifugal motor impellers satisfy the requirements of the EN 14986. standard.
Galvanised steel plate is used as the material for the rotating component of the motor impeller (impeller end plate, cover disk). If the motor impeller is purchased without a ZIEHL-ABEGG inlet nozzle, the system manufacturer is responsible for selecting the material for the stationary peripheral parts. Only material pairs complying with EN 14986 may be used.

4.2.1 Installation, protection from external influences

Install the motor impeller in a housing or in the system with no distortion or tension and protect it against the effects of external forces and vibrations (e.g. transfer of vibrations from other system components through the foundations or through the connected pipes and ductwork).
To attach the motor impeller to the stationary motor flange, use screws with strength class 8.8 and fit with suitable screw locks.
Permitted torques: for M6 = 9.5 Nm; for M10 = 46 Nm.
Certain operating points/speeds may not be used if resonances occur due to add-on parts. The system manufacturer must carry out a check for resonances during commissioning.
In the case of a vertical motor axis, the respective lower condensation hole must be open. The motor impeller should be installed in such a way that easy inspection and cleaning are possible (good accessibility of inspection hatches).
Upstream or downstream components, or those directly in the air flow, must not have any unprotected aluminium or steel surfaces.

4.2.2 Protect from the penetration of foreign bodies

Fans that take in air from or blow out air to the outside must be protected against ingress of foreign bodies by a guard grille.
Guard grilles must also be installed if intake or falling in of foreign bodies cannot be ruled out despite pipes and ductwork being connected.
At least protection class IP20 in compliance with EN 60529 must be guaranteed for the entire system at all times.
It must be ensured that no rust particles or rust flakes are deposited on surfaces.

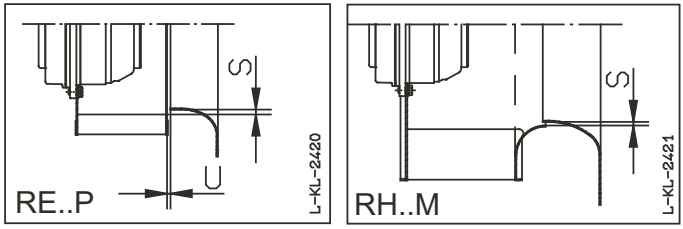
4.2.3 Protection against contact with rotating and stationary parts

Ensure that the gap “U” or “S” (see following figures) is uniform.
To comply with the material pair stipulated in EN 14986, the following minimum gaps must be maintained:

- The minimum gap between rotating and stationary parts may not be less than 0.5 % of the relevant contact diameter (diameter of a rotating part at the point where it can come into contact with a stationary part), but not less than 2 mm in an axial or radial direction, and it must not be more than 13 mm.
- **RE..P**: To achieve optimum power, the axial gap “U” should be max. 1-2 % of the nominal diameter of the impeller. Larger axial gap dimensions have a negative impact on the power of the motor impeller. The system manufacturer must ensure that the minimum and maximum gap “U” are adhered to.
- Surrounding housing or system parts must also maintain the required minimum clearance to the rotating fan parts!
- Comply with the permissible material combinations of rotating and stationary housing) parts according to DIN EN 14986.

A **copper** inlet nozzle can be ordered from ZIEHL-ABEGG SE as an accessory. This complies with the specified material pair.

Danger!
The following principle applies in general:Fans that do not comply with the required minimum gap dimensions must not be put into operation under any circumstances!



The following minimum gap dimensions between the impeller and the inlet nozzle must be maintained, depending on the relevant contact diameter

Series/-Frame size	Relevant impeller contact diameter	Required minimum gap 0.5 % of contact diameter, but a minimum of 2 mm
	DSI in mm	S in mm
RE20P	163	2
RE22P	186	2
RE25P	205	2
RE28P	233	2
RE31P	258	2
RE35P	297	2
RE40P	327	2
	DE in mm	S in mm
RH31M	200.5	2
RH35M	236.5	2
RH40M	265.5	2
RH45M	298	2
RH50M	334.5	2
RH56M	375	2
RH63M	418	2.1
The possible contact diameter corresponds to the internal diameter at the aspirating hole in the impeller, which is specified on ZIEHL-ABEGG SE dimension sheets as “DSI” (RE..P) or “DE” (RH..M).		

Danger!
Always check the gap dimension with a feeler gauge before start-up. Safe operation is only guaranteed if it is compliant.

4.2.4 Sealing

To keep the possible overflow of explosive atmosphere from inside to outside to a minimum, the housing, the inspection hatches or doors and the suction and pressure side air duct connections must be suitably sealed. The system manufacturer is responsible for sealing of the housing and the system.

4.3 Connection cable & junction box

Information
In demanding environments (wet rooms, outdoor installation), connection cables must have water draining pipe elbows. If using a junction box, install this lower than the motor to ensure that water cannot penetrate through to the controller housing from the connection cables.

4.4 Assembly in a humid atmosphere

Information
If the device is not in use for longer periods in a humid atmosphere, it is recommended to operate the motor/fan for at least 2 hours every month at 80-100 % of maximum speed to remove any moisture that has penetrated inside.

5 Electrical installation

5.1 Safety precautions

Danger due to electric current
- Work on electric components may only be carried out by trained electricians or by persons instructed in electricity under the supervision of an electrician in accordance with electrical engineering regulations.
- The 5 electrical safety rules must be observed!
- Connect the motor/fan only to electrical circuits that can be disconnected with an all-pole isolating switch.
- The operator of the product is responsible for the EMC compatibility of the entire system in accordance with the applicable local standards.
- It is forbidden to carry out work on the electrically live product!
- Cover neighbouring electrical equipment during installation work.
- Cable glands made out of metal are not allowed in plastic terminal boxes due to lack of potential equalisation.
- Electrical equipment must be checked regularly: Loose connections are to be re-tightened and damaged cables must be replaced immediately.

5.2 Connection

All motors/fans for which this documentation is valid are supplied with a lead-out cable. When connecting, observe EN / IEC 60079-14.
If the line ends are connected to the external circuits in the potentially explosive area, a junction box suitable for this area must be used. Appropriate explosion-proof junction boxes with tested cable and line inlets are available in our ZIEHL-ABEGG parts lists.
Allowed medium temperature see intended use.