



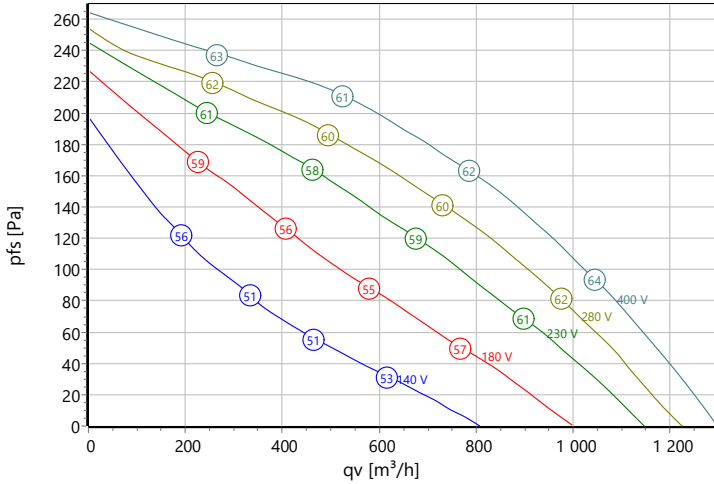
Type: **R 315 Ex II 3G Ex h IIB T3 Gc X**

Equipment category 3 - Zone 2

Part no.: F00-31574



**Curve:**



$\rho: 1,15 \text{ kg/m}^3$

**Nominal Data:**

U [V]	f [Hz]	C [ $\mu$ F]	$P_e$ [kW]	$I_N$ [A]	$n_N$ [r/min]	$t_R$ [°C]	$k_{10}$ [m²s/h]	$I_A / I_N$	IP	m [kg]
400 Y	50	-	0,11	0,26	1405	40	-	3,9	IP 44	-

**Sound Data:**

Frequency	$\Sigma$	125Hz	250Hz	500Hz	1kHz	2kHz	4kHz	8kHz	Distances	1 m	4 m
LwA(D,in) [dB(A)]	-	-23	-13	-6	-5	-6	-10	-15	LpA(D,in) [dB(A)]	-7	-17
LwA(D,out) [dB(A)]	-	-17	-12	-10	-5	-5	-8	-15	LpA(D,out) [dB(A)]	-7	-17
LwA(D,cas) [dB(A)]	-16	-29	-25	-22	-21	-23	-28	-37	LpA(D,cas) [dB(A)]	-23	-33

**Wiring Diagram:**

Drehstrommotor, explosionsgeschützt mit Temperaturfühler (TP).  
Drehrichtungsänderung durch Vertauschen von 2 Phasen.

**Three phase motor, explosion-proof with temperature sensor (TP).**  
**Changing of rotation direction by interchanging of 2 phases.**

*Moteur triphasé protégé contre les explosions avec sonde de température (TP).*  
*Changement de sens de rotation par inversion de deux phases.*

U braun / brown / brun

V blau oder grau  
blue or grey  
bleu or gris

W schwarz / black / noir

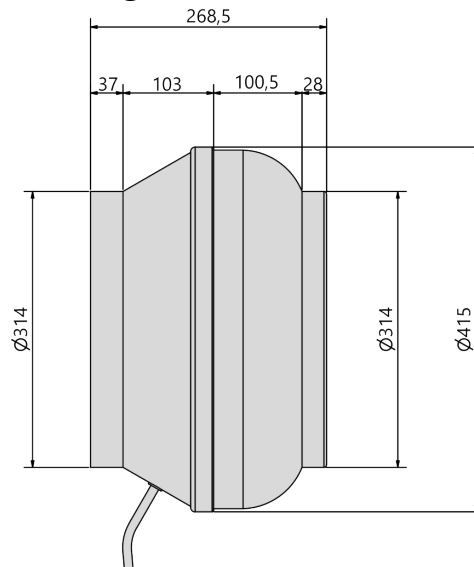
TP weiß / white / blanc

PE gelb-grün  
yellow-green  
jaune-vert

TK3-20036

**01.063**

**Drawing:**





Type: **R 315 Ex II 3G Ex h IIB T3 Gc X**

Equipment category 3 - Zone 2

Part no.: F00-31574



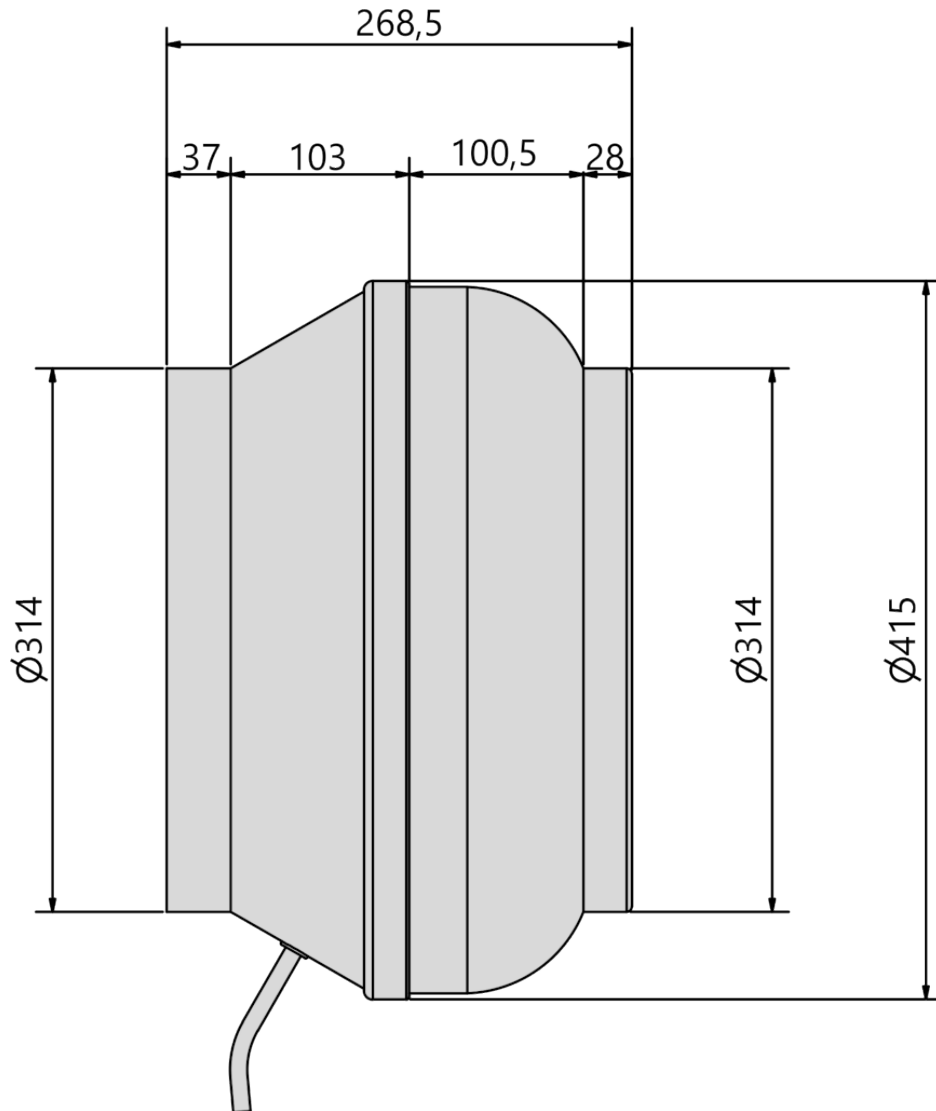
Part no.	Name	Quantit
F00-31574	R 315 Ex II 3G Ex h IIB T3 Gc X	1



Type: **R 315 Ex II 3G Ex h IIB T3 Gc X**

Equipment category 3 - Zone 2

Part no.: F00-31574





Type: **R 315 Ex II 3G Ex h IIB T3 Gc X**  
 Equipment category 3 - Zone 2  
 Part no.: F00-31574



TK3-20036

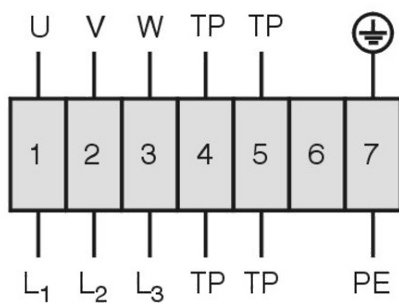
Drehstrommotor, explosionsgeschützt mit Temperaturfühler (TP).  
 Drehrichtungsänderung durch Vertauschen von 2 Phasen.

**Three phase motor, explosion-proof with temperature sensor (TP).**

**Changing of rotation direction by interchanging of 2 phases.**

*Moteur triphasé protegé contre les explosions avec sonde de température (TP).*

*Changement de sens de rotation par inversion de deux phases.*



- U braun / brown / brun
- V blau oder grau  
blue or grey  
bleu or gris
- W schwarz / black / noir
- TP weiß / white / blanc
- PE gelb-grün  
yellow-green  
jaune-vert

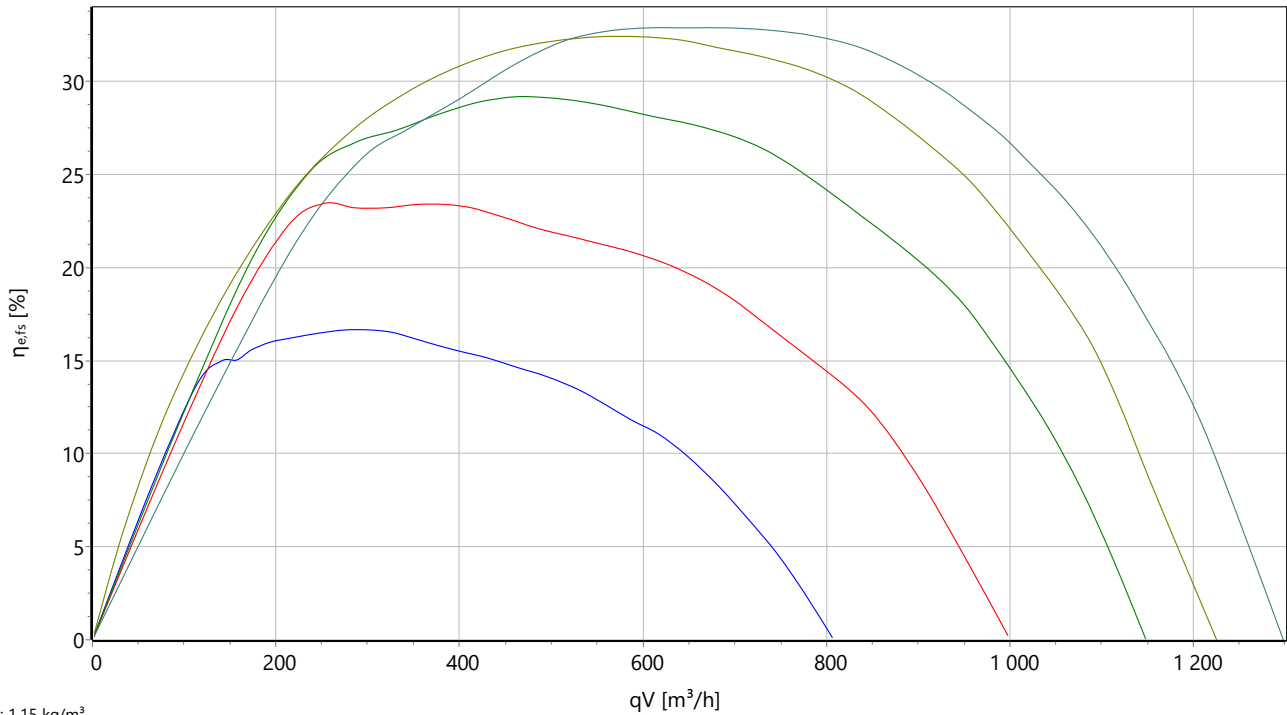
**01.063**



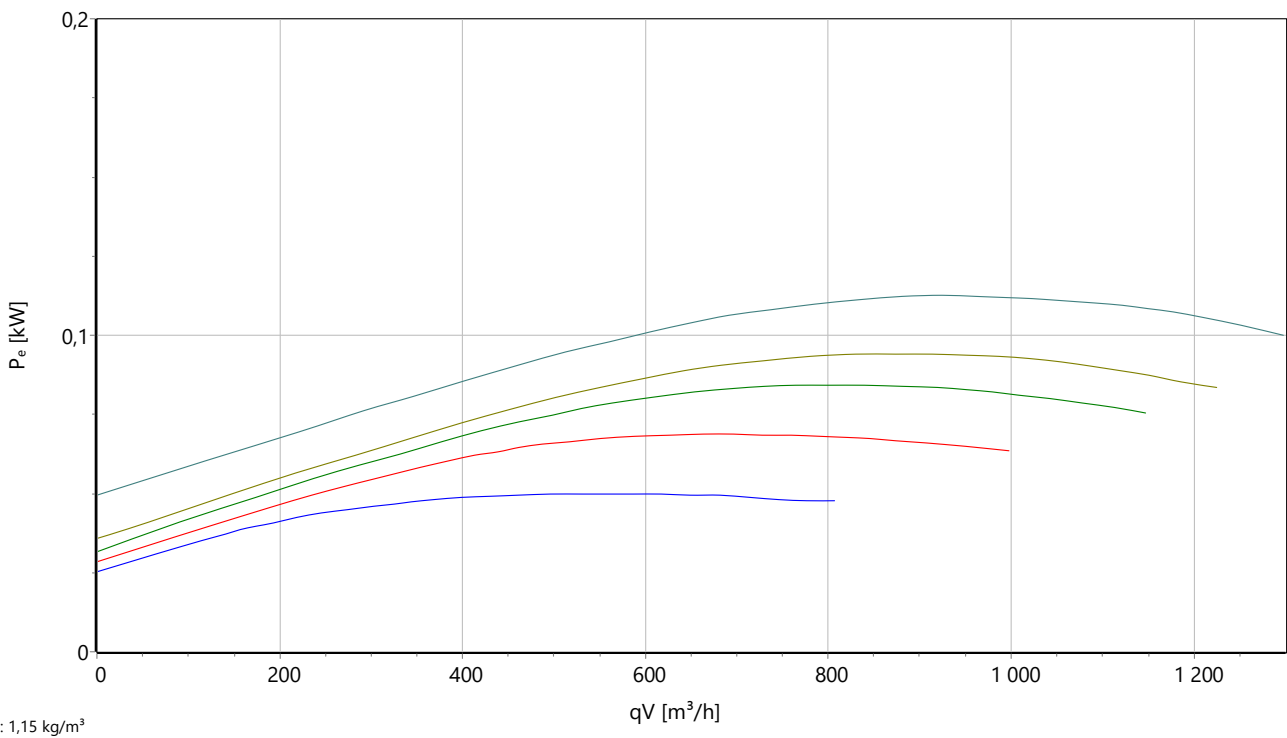
Type: **R 315 Ex II 3G Ex h IIB T3 Gc X**  
 Equipment category 3 - Zone 2  
 Part no.: F00-31574



**stat. Efficiency**



**Input power**

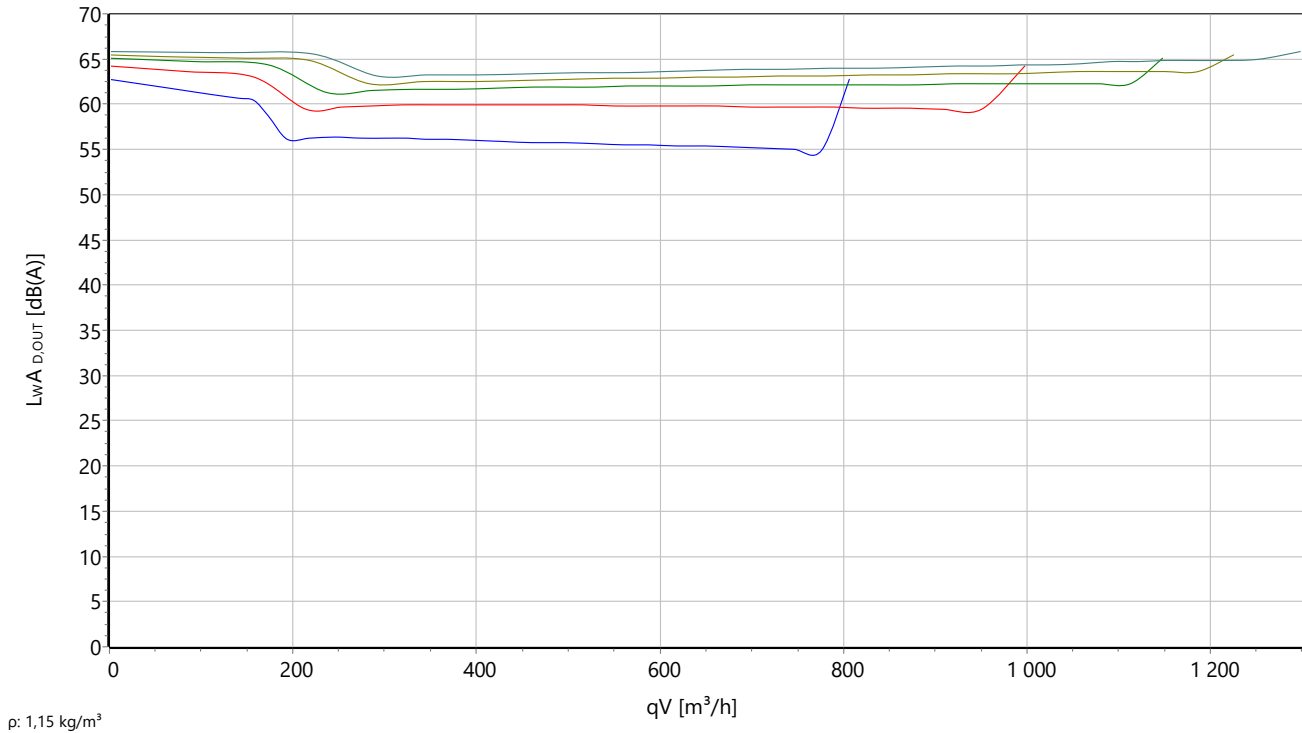


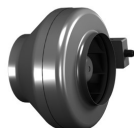


Type: **R 315 Ex II 3G Ex h IIB T3 Gc X**  
 Equipment category 3 - Zone 2  
 Part no.: F00-31574



**Sound power**





Type: **R 315 Ex II 3G Ex h IIB T3 Gc X**

Equipment category 3 - Zone 2

Part no.: F00-31574



Part no.	Name
F60-31500	VBM - Clamps (2 Pieces) - DN 315
F10-31570	RSK "Ex" - Ex-Back Draught Damper - DN 315
V00-30070	VK "Ex" - Ex-Shutter - black - Size 300/315
H80-00145	GS 5 "Ex" - Ex-On/Off-switch - loose - with PTC connection
H00-01208	RKD 1.2 - 5-Stage Control unit- 400V - WITH motor protection
H80-38033	MSD 1K - Ex-Motor protection switch - 400V - PTC connection
H80-10001	TÜS 100/A - PTC thermistor relay
P50-31500	BGR - Protection guard - DN 315

### Tube fan (explosion proof)

Equipment category 3 - Zone 2

The casing is made from shock-proof, recyclable black plastic (PA 6.6 + GF). Inlet and outlet side with duct connection for standard round ducts. Not gas-tight. Suitable for installation in any position. While the backward-curved impellers with wheel body are made of conductive PVC, the support plate is made of galvanized sheet steel. All of the components are mounted directly to the rotors of the external rotor motors. Voltage controllable explosion proof AC external rotor motor. Protection class IP44. Maintenance free ball bearings, closed on both sides with long-term lubrication. Motor coated black and/or die casted aluminum. Standard configuration with cable. Positive Temperature Coefficient (PTC) thermistors in accordance to DIN 44082 are inlaid into the motor windings. To function as a protective motor switch, the PTC resistors must be connected to a triggering device with the identification Ex II(2)G. Isolation Class F. Ignition protection Ex eb or Ex db eb. Motorized Impeller statically and dynamically balanced according to DIN ISO 21940-11 at least with quality level G6.3. The electrical connection via lead out connection cable.

Fan complies with the guidelines required (Machinery-, Atex- and EMC Directive) to comply with installation and conformity declaration as well as CE marking.

Those fans are designed and manufactured to be operated in vaporous explosive atmosphere. They are marked in accordance with the Atex directive 2014/34/EU: **II 3G Ex h IIB T3 Gc X**

#### Nominal Data:

Voltage [U]

400 Y V

Frequency [f]

50 Hz

Input power [P]

0,11 kW

Current [I]

0,26 A

Speed [n]

1405 r/min

Medium temperature [tR]

40 °C

Protection Mode

IP 44

#### Contact:

Rosenberg Ventilatoren GmbH

Maybachstraße 1

D - 74653 Künzelsau - Gaisbach

#### Type:

R 315 Ex II 3G Ex h IIB T3 Gc X

#### Article-No.:

F00-31574

## R... Ex - Tube Fans

with plastic casing - Zone 2

- easy installation in any position
- motor protection by triplet PTC thermistors
- speed controllable via transformer



### Description:

Tube fans represent a technically perfect solution, uniting the advantages of axial fans, straight airflo and easy installation, with high pressure stability, low noise level and high efficiency of the radial fans.

Those fans are designed and manufactured to be operated in vaporous explosive atmosphere. They are marked in accordance with the Atex directive 2014/34/EU: **II 3G Ex h IIB T3 Gc X**

### Application areas:

Garage / Offices / Bars / Greenhouses / Skyscrapers / Hotels / Industrial buildings / Basement rooms / Playschool / Cinemas / Parking facilities / Warehouses / Nursing homes / Schools / Sports halls / Supermarkets / Workshops / Residential houses / Fitness centers / Inflatables

### Casing:



The two-part housing is made of conductive plastic. In the suction area of the nozzle is an Ex-marking. The housing is not gas-tight.

### Impellers:

While the backward-curved impellers with wheel body are made of conductive PVC, the support plate is made of galvanized sheet steel. All of the components are mounted directly to the rotors of the external rotor motors.

### Materials:

Impeller/Blades = plastic  
 Inlet Cone/Flange = plastic

### **Motors:**

The voltage controllable AC-motors are characterized by a compact, robust design and a good controlling behaviour. They are designed by standard with protection class IP44, thermal class F and ignition protection Ex eb or Ex ec.

### **Motor Protection:**

The winding of the motors feature integrated triple Positive Temperature Coefficient (PTC) thermistor temperature sensors according to DIN 44082, which will have to be connected to a PTC thermistor tripping unit with protective mark Ex II (2)G as a motor protection. This specific thermal motor protection is capable of precisely identifying any abnormal operating condition and external influence and will then disconnect the motor from the mains via a contactor in any conceivable malfunction case. It is permissible to install commercially available motor circuitbreakers only as additional safety devices, since they are not able to ensure complete motor protection under all conceivable operating conditions (e.g. operation with reduced-voltage). Refer to the accessory list for the allocation of motor protection equipment.

---

### **Electrical connection:**

The fans are supplied as standard with a connection cable approx. 0.8 m long. Wiring diagrams are glued to the cable outlet side of the fan housing. An Ex connection box is available as an accessory.

---

### **Installation:**



The fans may be installed in any position.

### **Remarks:**

If necessary, the suction and discharge openings should be secured against falling in or sucking in debris through a protective grid in accordance with DIN 31001 or DIN 24167.

---

### **Air volume control:**

Explosion proof external rotor motors.

The design of the motors allows for a stable modulation of the motor speed via a voltage reduction. Only transformer type open-/closed-loop control units may be used for this purpose. For correct assignment refer to the list of accessories. The permissible voltage modulation range of between 25 and 100 % of the nominal voltage meets the typical requirements of systems with a variable air flow. If the system is operated in the reduced-voltage range, the operating current may exceed the nominal current. The percentage current increase in comparison to the nominal current is listed under technical data as Delta I. Open-/closed-loop control units must be designed to handle the maximum operating current. Ex external rotor motors with type of protection „eb“ or „ec“ are not allowed to be used with frequency converters.

---

### **Scope of delivery:**

- Ex-Tube fan (R...Ex)
- Operating manual

## **IMPORTANT NOTES:**

### **Air performance curves:**

The air performance curves have been established using the intake test method in the test chamber according to DIN EN ISO 5801. They show pressure increase as a function of the volume flow. Performance curves were recorded in installation type B.

### **Sound levels:**

The tests and their performance curves were conducted according to DIN 45635 part 38 or. ISO 133347-3 and DIN EN ISO 3744/ 3745 in accordance with the envelope surface method.

### **Service life:**

For maximum service life of Rosenberg products please beware of the maintenance hints on the manual for each product type.

### **Recycling and disposal:**

For recycling and disposal of Rosenberg products comply with applicable locally requirements and regulations.

## **IMPORTANT NOTES:**

### **Explosion Proof fans**

#### **Technical information**

The technical information is splitted in a mechanical and an electrical part.

#### **Mechanical part**

Rosenberg fans for potentially explosive atmospheres are manufactured and tested in accordance with EN 14986. The possible contact surfaces between rotating and stationary components in view of operating malfunctions, which are typically to be expected, are manufactured of materials with a minimized ignition hazard resulting from friction, grind or impact sparks. The inlet and outlet of the fan shall be fitted with guards to prevent the ingress of foreign particles. The guard shall meet at least the requirements of DIN EN ISO 13857.

#### **Electrical part**

The motor data for an optimally cooled motor are stamped onto the type nameplate and part of the contents of the EC type examination certificate. Refer to the fan nameplate for the nominal fan data. In order to realize a favourable speed ratio for voltage-controlled fans with external rotor motors, motors may possibly be used, which have a higher rated voltage than the fan voltage. In this case, the voltage will also differ in addition to the current, power and speed.

#### **Temperature class**

Electrical appliances in explosion hazardous areas are listed according to their maximum surface temperatures in temperature classes ranging from T1 to T6. The lowest temperature of ignition of the concerned explosive atmosphere must be higher than the maximum surface temperature of the used electrical appliance (according to EN 60079).

### Temperature class / max. surface temperature

T1	450°C
T2	330°C
T3	200°C
T4	130°C
T5	100°C
T6	85°C

Rosenberg explosion proof fans can be used for temperature classes T1 up to T3 (T4 with standard motor on request).

### Zones

For combustible gases, vapours and fogs the following is applied:

#### Zone 0 (= Equipment Category 1)

For areas where the given danger of explosive atmosphere is long-term or continuously.

#### Zone 1 (= Equipment Category 2)

For areas where the given danger of explosive atmosphere is during normal operation.

#### Zone 2 (= Equipment Category 3)

For areas where the given danger of explosive atmosphere is seldom or short-term.

Rosenberg fans, based on their design, are suitable for ventilation of explosive atmosphere in zone 1 and 2 as well as installation in zone 1 and 2.

### Type of protection / Classification / Standard

Oil immersion	„o“	EN 60079-6
Pressurising	„p“	EN 60079-2
Powder filling	„q“	EN 60079-5
Compression proof enclosure	„d“	EN 60079-1
Increased safety	„e“	EN 60079-7
Intrinsic safety	„i“	EN 60079-6

Rosenberg external rotor motors are in accordance with type of protection increased Safety „e“. For zone 1 this would be „eb“ and for zone 2 „ec“.

These types of protection classes are valid for electrical appliances in explosive rooms and units, where gases or vapours come up or accumulate and produce explosive mixtures in combination with air.

The explosion proof class „eb“ shows that increased safety measures are taken to avoid the possibility of inadmissible high temperatures and the arising of sparks or electric arcs in the interior or on external components of electrical appliances, which do not arise during normal operation (according to EN 60079-7).