DELFIN · II 3D EX H IIIC T80°C (INT) / T135°C (EXT) DC

# Delfin ZFR EV AP 560 K1 Z22


The Delfin ZFR EV AP 560 K1 Z22 is the smallest motor variant in the AP 560 chassis -- a stationary ATEX deduster with a 1.1 kW centrifugal fan and substantially greater capacity than the smaller 420 model. Airflow reaches 1,500 m³/h at 160 mmH²O (16 mbar) static vacuum, while the 100-litre tank capacity and 200 mm suction inlet place the model in the central-suction segment. The primary filter is polyester ANT M class (antistatic, 50,000 cm² surface, 560 mm diameter), providing both a larger filtration surface and ESD control -- important when diffuse particles travel through an extraction arm or long piping where static build-up would otherwise become an ignition source. The HEPA H14 final filter is standard, and collection is in a detachable 100-litre steel container with internal plastic liner. The model is ATEX-certified II 3D Ex h IIIC and built to EN 17348:2022.

## APPLICATIONS

- Central suction on medium-sized production plants in Zone 22 with 2-3 collection points
- Dual-arm source capture via Y-branch at two welding workstations simultaneously
- Continuous suction from mixers and granulators in polymer and feed industries
- Dust collection from cyclone-based primary separators at larger process plants
- Stationary installation on CNC halls with multiple machines under shared local extraction

# Technical specifications

| | |
|---|---|
| **ATEX marking** | II 3D Ex h IIIC T80°C (int) / T135°C (ext) Dc |
| **Internal / external zone** | 22 / 22 |
| **Motor type** | Centrifugalventilator IE3 (1,1 kW, 3-faset 400 V), Ex h IIIC T135°C ekstern / T80°C intern, Ex tb Dust Tight Certified |
| **Airflow** | 1500 m³/h |
| **Vacuum** | 16 mbar (160 mm$H_2O$) |
| **Container** | 100 L |
| **Sound pressure** | 72 dB(A) |
| **Filter class** | H class |
| **Filter type** | HEPA H14 (EN 1822-5), 99,995 % MPPS, 10 m² filterflade -- standard inkluderet |
| **Primary filter** | Stjerne/taske polyester ANT M-klasse antistatisk (IEC 60335-2-69), 50.000 cm², diameter 560 mm, manuel rensning |
| **Cleaning system** | Manuel filterrensning via udvendig hank |
| **Collection system** | Plastic bag |
| **Material** | Malet staalkonstruktion (AISI 304 som option) |
| **IP class** | IP55 |
| **Power** | 1.1 kW |
| **Voltage** | 400 V / 50 Hz / 3~ |
| **Inlet** | Diameter 200 mm |
| **Dimensions (L x W x H)** | 780 x 850 x 2140 mm |
| **Weight** | 100 kg |

# Questions and answers

## When is the K1 variant the right choice over K2 or K4?

The K1 (1.1 kW, 1,500 m³/h) is the optimal choice when the load is moderate -- typically one or two extraction arms on shorter piping, a single CNC machine, or a smaller cyclone installation. If you plan three or more simultaneous collection points, or if the extraction arm is more than 5-6 metres from the deduster, the K2 (2.2 kW, 2,500 m³/h) is the more robust choice. The K4 (4 kW, 3,500 m³/h) is reserved for central suction systems with four or more points, or for scenarios where the particle is particularly sticky or heavy. Operating economy should weigh in: the K1 draws less current and is quieter in operation -- do not choose a K4 if a K1 suffices.

## What does 'ANT M' on the primary filter mean, and why is it important?

ANT is the Italian abbreviation for 'antistatico' -- antistatic. The filter medium is deliberately made electrically conductive (typically via graphite additives or metal fibres in the polyester weave) to ensure that the static charge built up as particles brush past the filter can be conducted away to earth. On an antistatic filter in a Zone 22 area this is an ATEX-critical function: a non-antistatic filter could accumulate several kV of static potential and generate a spark that ignites the collected dust. Filter class M (medium) indicates that the filter retains dust with MAK values down to 0.1 mg/m³ -- moderately strict for dust types one would not want to inhale, but not in the carcinogenic category.

## Why did the vacuum drop from 180 mmH²O on the 420 model to 160 mmH²O on the 560 K1?

It is a consequence of the centrifugal fan's characteristic. When stepping up to a larger rotor and larger inlet diameter (560 mm vs 420 mm), the fan shifts toward higher airflow at lower static vacuum -- a so-called movement along the fan curve. The K1 variant delivers 50 % more airflow (1,500 vs 1,000 m³/h) but 11 % lower static vacuum (160 vs 180 mmH²O). For a deduster with short piping and low-resistance filtration this is a good trade -- volume flow takes over from point vacuum. For applications with long hoses or clogged filters the 420 model will maintain suction-point vacuum better. So: choose by the pressure profile of the installation, not by peak figures.

## How often should the container be emptied during continuous operation?

With 100 L capacity, and depending on dust density, there is typically 1-3 operating shifts between emptyings. For light wood dust (density ca. 0.3-0.4 t/m³) 100 L corresponds to roughly 30-40 kg -- at 5 kg/h collection the container lasts ca. 6-8 hours. For heavier metal dust (density 2.5-7 t/m³) the container lasts much longer in volume, but weight can become a handling problem -- roll the container out on wheels before it is filled to the rim. The plastic liner is folded over the container rim to prevent dust on the outer edge, and is pulled in from above when the container is emptied. AISI 304 inox container is available as option for greater chemical resistance.

# Contact and advisory

PARTICULAIR

**Particulair**
Højtoften 12
2690 Karlslunde, Denmark
CVR: 34129894
Phone: (+45) 70 23 12 03
E-mail: sales@particulair.com
Web: particulair.eu
**Product page:** particulair.eu/ex-vac/en/atex-dust/zfr-ev-ap-560-k1-z22/

SMARTER THINKING • BETTER WORKING