

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

# Delfin ZFR EV AP 560 K4 Z22



The Delfin ZFR EV AP 560 K4 Z22 is the top model in the AP 560 chassis -- a stationary ATEX deduster with a 4 kW centrifugal fan delivering 3,500 m<sup>3</sup>/h airflow at 370 mmH<sub>2</sub>O (36 mbar) static vacuum. It is the most powerful centrifugal-fan based deduster in the Delfin range and the correct choice for large central suction systems with 4-6 collection points, long piping runs or particularly demanding source-capture applications. With twice the vacuum of the K2 variant the K4 can draw through longer piping runs without losing suction-point vacuum, and the 40 % greater airflow enables simultaneous extraction arms at multiple workstations. Antistatic polyester ANT M primary filter, HEPA H14 final filter and 100-litre detachable container with plastic liner. ATEX II 3D Ex h IIIC, EN 17348:2022. Weighs 130 kg -- 30 % more than K1/K2 due to the heavier motor and chassis design.

## APPLICATIONS

- Larger central suction systems in Zone 22 with 4-6 simultaneous collection points or long piping
- Multi-arm welding halls where several welding booths are served by the same deduster
- Heavy-duty source capture in CNC halls with greater dust potential (aluminium machining, MDF milling)
- Cyclone-based central suction installation where a primary separator pre-treats heavy particles
- Process plants with fixed suction circuits on larger mixers, granulators or extruders

# Technical specifications

<b>ATEX marking</b>	II 3D Ex h IIIC T80°C (int) / T135°C (ext) Dc
<b>Internal / external zone</b>	22 / 22
<b>Motor type</b>	Centrifugalventilator IE3 (4 kW, 3-faset 400 V), Ex h IIIC T135°C ekstern / T80°C intern, Ex tb Dust Tight Certified
<b>Airflow</b>	3500 m³/h
<b>Vacuum</b>	36 mbar (370 mmH <sub>2</sub> O)
<b>Container</b>	100 L
<b>Sound pressure</b>	74 dB(A)
<b>Filter class</b>	H class
<b>Filter type</b>	HEPA H14 (EN 1822-5), 99,995 % MPPS, 10 m² filterflade -- standard inkluderet
<b>Primary filter</b>	Stjerne/taske polyester ANT M-klasse antistatisk (IEC 60335-2-69), 50.000 cm², diameter 560 mm, manuel rensning
<b>Cleaning system</b>	Manuel filterrensning via udvendig hank
<b>Collection system</b>	Plastic bag
<b>Material</b>	Malet staalkonstruktion (AISI 304 som option)
<b>IP class</b>	IP55
<b>Power</b>	4.0 kW
<b>Voltage</b>	400 V / 50 Hz / 3~
<b>Inlet</b>	Diameter 200 mm
<b>Dimensions (L x W x H)</b>	780 x 850 x 2140 mm
<b>Weight</b>	130 kg

# Questions and answers

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## When does the K4 become necessary over the K2?

The K4 becomes the right choice when one of three criteria is met. (1) The piping run's total length exceeds 15-20 metres, or contains more than 4-5 bends (90° bend typically costs 3-5 mbar). (2) The number of simultaneous collection points is 4 or above, and the K2's 2,500 m<sup>3</sup>/h is spread too thinly across them. (3) The dust is particularly sticky or heavy -- e.g. moist swarf, moist concrete dust, or MDF chips with adhesive, where the suction-point vacuum must be robust against varying load. If none of these apply, the K2 suffices at markedly lower current draw and purchase price.

## How much more current does the K4 draw compared with the K2?

At nominal operation the K4 draws ca. 8-9 A versus the K2's 4-5 A -- roughly double. The power difference is 4 kW vs 2.2 kW (82 % greater), and inrush current can be 5-7 times the nominal current in the first 1-2 seconds. For a typical Danish industrial installation with a 32 A three-phase outlet the K4 represents ca. 25 % of available current -- ample headroom, but if you plan multiple dedusters on the same phase distribution, sizing must be verified. Operating economy: K4 costs ca. 1.8-2.0 kWh per hour vs K2's ca. 1.0-1.2 kWh -- the 0.7 kWh difference over 8 hours = 5.6 kWh per day, at 1.5 DKK/kWh = 8.4 DKK per day or ca. 2,000 DKK per year.

## The noise level is rated at 74 dB(A) -- what does this mean in practice?

74 dB(A) at 1 metre is 'normal conversation level' -- audible but not annoying short-term and below the workplace limit of 80 dB(A) for an 8-hour shift. For comparison the K2 is at 72 dB(A) and the 420 model at 70 dB(A). The difference is logarithmic: 4 dB(A) higher sound = roughly double the perceived intensity. If the deduster stands in the same room as operators, measurement with a C-weighted dB meter at the workstation position is recommended, because room acoustics (reverberation, reflection) add 2-5 dB(A). A sound-absorbing cabinet or separate technical room typically reduces 10-15 dB(A) -- relevant for continuous 8-hour operation.

## Can the K4 be used as a 'master deduster' with multiple sub-suction circuits?

Yes -- and it is a typical architecture for larger industrial plants. With 3,500 m<sup>3</sup>/h airflow at 36 mbar the K4 can serve as the main suction source for a larger branched duct system, where sub-circuits serve different production zones. Y-branches (SL.2775.0200 oe200/150/150 or SL.3022.0200 oe200/100/100) allow the airflow to be distributed across two or three points simultaneously. Critical factors: (1) earth grounding must run through the entire system including all Y-branches and T-fittings, (2) suction-point vacuum drops logarithmically with the number of open take-offs, and (3) air balance between collection points must be tuned with throttle dampers to ensure equal suction at all points.

# Contact and advisory

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