



Proper use of the DencoHappel explosion protected air filters stipulates compliance with the current operation manual. This manual must always be available at the site where the unit is in operation. Every person working on or with the DencoHappel explosion protected air filters must read and understand this operation manual fully.

1. Technical Data

Type/designation	Dimensions W x H x D [mm]	Number of Bags [Anzahl]	Filter surface [m ²]	Max. allowed air flow volume [m ³ /h]
Bag filter G85	592 x 592 x 600	8	6,1	4.250

Filter class	Norm	Initial pressure difference [Pa]	Max. end pressure difference [Pa]	Nominal air flow volume [m ³ /h]	Order number
F7	EN 779	77	450	3.400	A09166

Specifications:

Frame material: Galv. metal sheet
 Filter medium: Micro glass fibre
 Max. operating temp. [°C]: -40 to +80
 Max. relative humidity [%]: 90
 Filter with grounding element

Notes:

Identification of explosion protection: II 2 GD IIB T6 (-40 to + 80°C)
 Explosion protection conformity: RL 94/9/EG
 Unit category 2, group II RL 94/9/EG
 Application in zones 1, 2, 21, 22 RL 999/92/EG

2. Safety Instructions

Proper use

DencoHappel explosion protected air filters of the equipment category 2, group II in accordance with the EU directive 94/9/EG on explosion risk in areas with an explosive atmosphere or EN 13463-1:2001 are exclusively used to filter solid matter particles and dust of any kind and size out of air in air handling systems.

Filtered air can be charged with foreign matter and the relevant surroundings can be classified as an explosion risk areas in accordance with 1999/92/EG directive on explosion protection.

DencoHappel explosion protected air filters are exclusively suitable in explosion risk areas in zones 1, 2, 21 and 22 in accordance with 1999/92/EG directive on explosion protection.

Further process instructions and regulations on explosion risk prevention in terms of 1999/92/EG directive as well as other usually applied directives on using, handling, maintenance and recycling of air filters for air handling units SWKI 2003 as well as VDI 6022 must be taken into account.

Label

The supplied label must be attached on the external side of a service door of an air handling unit. The label must be clearly visible and accessible.



DencoHappel explosion protected air filters are installed in air handling units that are classified as explosion risk areas according to 1999/92/EG and 94/9/EG directives on explosion risk protection. The air filter is not suitable for explosion risk areas where hybrid mixtures lead to explosion hazards.



Possible electrostatic charges of the DencoHappel explosion risk protected air filters are continuously diverted without special structural changes or technical measures if the following conditions are met:

- The air filter frame must always have an electrically conductive connection with the relevant filter retainer. For this purpose - an additionally supplied grounding set must be mounted and secured. This grounding set must be mounted in such a way that self-removal or accidental removal because external influence is prevented (⇒ refer to section „3. Installation“).
- The filter retainer as well as all electrically conductive components of an air handling unit must be grounded. This can be achieved by using conductive contact surfaces between components (direct contact) or an electrical conductor (e.g. grounding cable).

- Air flow velocity and rated air flow rate* Air flow velocity through filter may not exceed 10 m/s and rated air flow rate specified in the technical data may not be exceeded under any circumstances.
- In case of proper use of the DencoHappel explosion protected air filters at specified rated air flow rate the air flow velocity through filter medium will not exceed 0,5 m/s even if the filter has reached the intended operating life or compulsory maximum end pressure difference.
- The standard value for dimensioning is specific maximum air flow rate 0,3 m³/s per m² of filter surface. It must always be possible to check the maximum rated flow rate (☞ refer to section „1. Technical Data“) of the unit by using check and monitoring devices (e.g. differential pressure monitor or flow measuring devices).

3. Installation

- Pre-installation work*
- Make sure that the planned installation location is suitable for the operation of the DencoHappel explosion protected air filter. This comprises the following:
 - The classification of the installation site as a hazard zone according to RL 1999/92/EG
 - Availability of a company internal document on explosion risk protection in accordance with RL 1999/92/EG and the occupational safety codes and regulations.
 - Remove the DencoHappel explosion protected air filter from its packaging outside the explosion risk zone:
 - Handle the air filter with care and do not damage the filter medium
 - Inspect the air filter for any external damage and check if the grounding set is complete (operation manual and explosion protection label); if the filter is damaged or the grounding set is missing - the filter may not be mounted.
- Installation*
- Loosen the old grounding set from the unit.
 - Remove the old air filter including the grounding set.
 - Carry out all necessary cleaning of the unit.
 - Insert the new DencoHappel explosion protected air filter in the unit and secure the filter using filter retainers.
 - Screw the grounding electric cable with a ring tongue lug to grounded unit component together (e.g. filter retainer, slide in frame, monoblock etc.) in such a way that self or accidental removal without a tool is impossible.
 - ✓ An electrically conducting connection between air filter frame and unit component must be ensured!
 - Check the ring tongue lug for secure seat.
 - Check electric resistance between filter frame and unit component using an ohmmeter – no matter where the measuring point is - electric resistance may not exceed 1 MΩ (Mega-Ohm).

4. Operating Life/Durability of the DencoHappel Explosion Protected Air Filter

The characteristics and features of the DencoHappel explosion protected air filter are the same as with conventional air filters of the same type and same configuration.

- Replace the air filter when the maximum allowed end pressure difference is reached. It can be assumed that the maximum allowed end pressure difference amounts to a standard value with initial pressure difference plus 100 Pascal of pressure drop increase. Refer to section "1. Technical Data" for the effective maximum allowed end pressure difference.
- Moreover, consider the recommendations of the hygiene directive SWKI 2003-5 and VDI 6022 in terms of the maximum service life.