



Inertial / Sand Filter

Description

Filsure inertial filter is compact, self-cleaning, and modular designed, to serve the requirement of high-efficiency dust filtering of large volume of air at lower pressure drop.

Inertial separation is an excellent pre-filtration system, particularly indicated in applications with high dust levels such as steel mills, cement factories or desert areas with risk of dust storms.

Working Principle

It is completely steel structured product which separates dust by principle of "Inertia". If an air flow containing the dust particles or other impurities undergo a direction change, the particles are subject to the force of inertia which makes them follow the direction of the original motion.

This filtration system is based on the kinetic energy conservation principle, for the dust particles transported by the upstream flow; with a series of quick direction changes, the fluid flows are directed towards the area where clean air is needed, whereas the particulate, through inertia, continues to flow towards an area of the filter that exhausts the separated dusts.

Evidently the higher the mass of the particles and the speed through which they are transported, the higher the efficiency of an inertial filter. An inertial filter needs, except for sporadic exceptions, an auxiliary fan for the extraction of separate dusts; this fan, must be suitable for the transportation of abrasive dusts. Our product range includes four types of inertial filters.

The filter is formed by one or more assembled modular inertial cells, through which the dusty air undergoes an acceleration and a sudden change of direction.

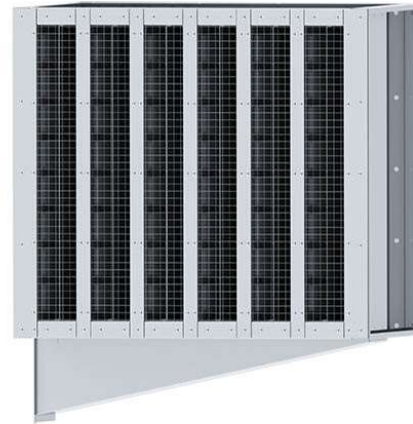
The dusts highly accelerated, maintain a rectilinear direction, go inside the cell and are conveyed in a collecting duct.

The separated dust is, then, sucked and ejected by secondary fan or "Bleed fan". The bleed fan is designed to discharge dust directly in atmosphere, without duct on the outlet. The air consumed by bleeding fan ranges from 10% to 12% depending on efficiency modes (At NTP conditions).

Inertial filter efficiency is dependent on the size and specific gravity of the dust particles, as well as the inlet air velocity and bleed air rate. Large variation in inlet temperature also affect collection efficiency.

Technical Specification

- Working noise power level: < 80 dBA
- Initial pressure drops: < 250 Pa
- Dust removal efficiency: > 81% (A2 Fine dust)
- Dust removal efficiency: > 92% (A4 Coarse dust)
- Material of construction: Carbon steel painted, Galvanized steel, Stainless steel



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How to Order

For order codes and specifications, See "Part number" section

Area of application

- Areas with heavy dust, sand or storms.
- Pre-filtration for heavy industrial and coal dust environment.
- Air conditioning and ventilation system.

Key Features / benefits

- Features and benefits
- Compact design
- High dust filtering efficiency
- Modular design
- Low noise
- No recurring spare parts required
- Removable and individually cleanable filtering panel. Maintenance free for long-term service in most difficult conditions.
- Rugged construction for uniform performance.
- Inlet and outlet side face screen (Optional) for additional protection.

Accessories / Add-Ons

- Weather hood for module
- Inlet and outlet mesh
- 2 year spares

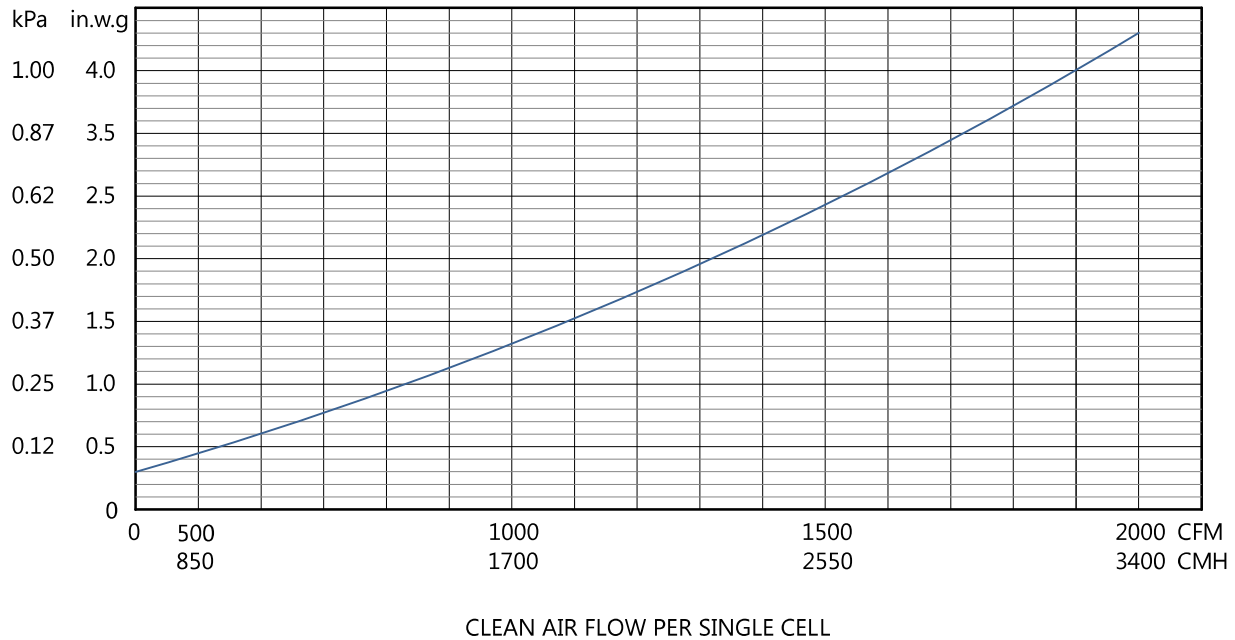
FILSURE

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Part numbers

We require following information to quote suitable inertial filter system :

- Project location (Including wind and seismic details)
- Clean air flow required : CMH
- Bleed air flow : CMH (Typically in range of 11-12% of inlet air flow)
- Particle removal efficiency required : % of Micron particle / Efficiency as per standards.
- Initial / Final pressure drop : < Pa (Typically constant for both conditions)
- Available space at site for installation of inertial filter : mm. (L) x mm. (W) x mm. (H)
- Material of construction casing : Carbon steel / Stainless steel
- Material of construction vanes : Carbon steel / Stainless steel
- Environment class as per ISO 12944
- Inlet screen required : Yes / No
- Bleed fan required : Yes / No
- Orientation of Bleed air fan : Center / LHS side / RHS Side (While looking from Inlet air side)
- Inlet side weather hoods required : Yes / No



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