

FP 200 ATEX-SERIES

APPLICATION

The FP 211 ATEX and FP 213 ATEX systems are equipped with cleanable anti-static filter cartridges which allow dust build-up to be removed from the filters using bursts of compressed air. This means that these devices are ideal for applications in which large amounts of dry, flammable dust with a minimum ignition energy of >3 mJ are extracted, and that they have a very long service life in comparison to systems with saturation filters.

The systems meet the requirements of the ATEX directive (EX II 2/- Dc IIIC T100°C) and are suitable for extraction from a zone 21, although the systems must be placed outside of the zone. The suitability for the respective application depends on the substance to be extracted and must be considered individually. In appropriate situations, use for a minimum ignition energy of < 3 mJ can also be checked.

AREAS OF APPLICATION:

Flammable dusts (minimum ignition energy > 3 mJ) from the following processes:

- Laser processing (in some cases combined with precoating)
- Mechanical processing (grinding, deburring, milling, drilling, cutting)
- Transferring materials, packaging processes, transporting/ conveying processes

THE SYSTEM INCLUDES NUMEROUS FEATURES:

- Developed in accordance with the ATEX directive
- Cleanable filter cartridge
- Upgradeable with activated carbon filter module at the factory
- Powerful electronics
- Filter cleaning control



Similar to image

FUNCTIONAL PRINCIPLE

The contaminated air, which consists of flammable dusts, is collected by the collection unit (extractor hood, suction arm, hose, etc.) and transported into the filter unit directly or through an earthed pipe or flexible hose. The dust particles are filtered out by a cleanable anti-static filter cartridge in the filter unit. The filter cartridge is cleaned using an automatic cleaning system. The filtered-out dust particles are collected in a dust collector for easy disposal. If necessary, a dust bag can also be inserted for low-contamination disposal. The cleaned air is then passed through a particle filter (which represents another level of safety) and – depending on the application – transported back into the work area or diverted outdoors.

PRODUCT FEATURES

DEVELOPED IN ACCORDANCE WITH THE ATEX DIRECTIVE

The systems were specially developed in accordance with the ATEX directive, and the documentation was stored at a named location, in accordance with the standard's requirement. The devices are labelled with the designation EX II 2/-Dc IIIC T100°C accordingly. They may be used to extract from a zone 21 (the zone is appraised by the user), although the systems must be placed outside of the zone.



Customers receive a special sample explosion protection document, which enables them to appraise the overall system of TBH extraction system and customer environment.

CLEANABLE FILTER CARTRIDGES

TBH standard filter cartridges feature a microfibre surface made of PES (polyester) and a conductive coating. They are tough and well-protected against mechanical damage, and they represent a solution for a wide range of customer applications. For special applications, PTFe-coated filter cartridges and other accessories are also available. Please contact the TBH sales team for more information about your specific application.



new filter cartridge



filter cartridge in use



filter cartridge after cleaning

CAN BE UPGRADED WITH VARIOUS FILTER MODULES AT THE FACTORY

Depending on the specific application and applicable occupational safety regulations, it may be necessary to add additional filter levels to the standard filter cartridges. An optional particle filter (H13), which is monitored separately can be installed downstream to increase the separation efficiency, e.g. where carcinogenic substances are present. A molecular filter (activated carbon/BAC) is also available to eliminate odours and gases from the process air.



Filter cartridge (standard)



Particle filter (optional)



Activated carbon/BAC filter (optional)

POWERFUL CONTROL ELECTRONICS

All FP 200 ATEX-series systems are equipped with **INSPIRE** control electronics and a comprehensive interface. This allows controlling and monitoring the following functions:

- Switching between run/standby
- Manual adjustment of the rotation speed
- Filter-saturation indicator of the extraction system
- Individual filter monitoring for particle filter
- Visual and acoustic display of the filter saturation
- Fault display and notification
- Pushbutton Start cleaning cycle
- Display Filter cleaning status

INTERFACE:

- System start/stop
- Warning at a filter saturation of 75% (notification, e.g. for external control of the cleaning process)
- Collective fault output (rotation speed, temperature, filter full 100%)
- External adjustment of the rotation speed
- External start of the cleaning process
- Error memory improves the coordination between the customer and the TBH service
- Parameterization access for the activation of custom functions



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OPERATING ELEMENTS:

A) Switching between run/standby

B) Manual adjustment of the rotation speed

C) Manual start of the filter-cartridge cleaning

1) Filter-saturation indicator

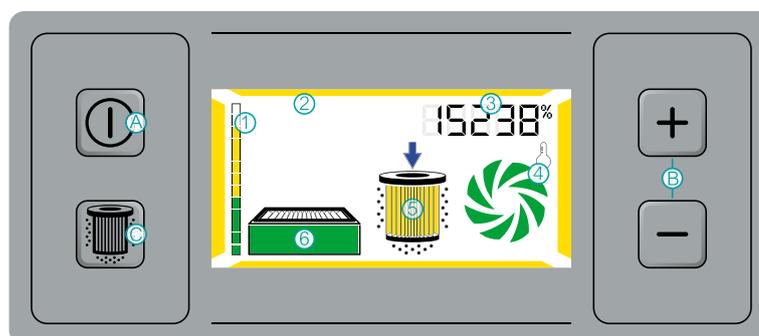
2) System status indicator

3) Performance-setting indicator/ operating-hours meter

4) Temperature and turbine-malfunction indicator

5) Cleaning-in-progress indicator

6) Particle filter status indicator



FILTER-CARTRIDGE CLEANING:

The FP 200 ATEX-series is equipped with a special cleaning control allowing the automatic removal of dust covering the filter cartridge thus significantly increasing the filter service life.

Depending on the specific case of application, different options can be parameterized by the customer:

- Differential-pressure-controlled cleaning (factory setting)

The system constantly monitors the actual filter saturation and automatically starts the cleaning cycle once a set value has been reached (factory setting: filter saturation of 75%)

- Interval cleaning (can be parameterized via interface)

The system automatically starts the cleaning cycle in accordance with individually adjustable periods of time (minutes/hours)

- Coastdown cleaning (can be parameterized via interface)

Coastdown cleaning can also be activated in addition to the other modes. The cleaning cycle is started automatically once the system is switched to standby. This allows the system to clean the filter at the end of a work shift without interrupting any work processes.

- Start cleaning via interface

Depending on the individual case of application, the customer can activate the cleaning by means of the interface. Using this function is recommended whenever the customer's work process must not be interrupted in an unforeseen manner.

ADDITIONAL FUNCTIONS:

System shutdown during a running cleaning process, cycle times and much more.

SIMPLE DUST REMOVAL

The dust collected in the process can be disposed of using the removable dust collector.



THE PRECOATING PROCESS

The FP 211 ATEX and FP 213 ATEX can be manually precoated with Precofix 200 precoating powder. The precoating powder creates a thin layer separating the filter medium from the extracted particles of dirt. This protects the surface of the filter cartridge and makes it easier to filter out even sticky and moist particles (Figure 1), significantly expanding the range of applications for cartridge filter systems of the FPV and FP series and greatly increasing filter service life under difficult conditions.

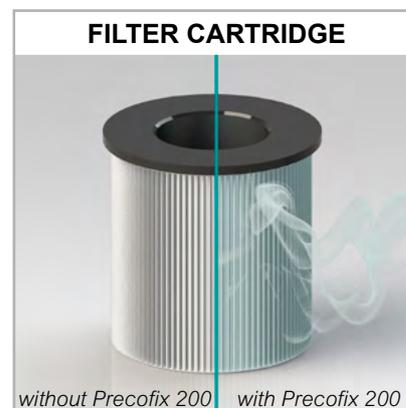


Figure 1

ADSORPTION OF GASEOUS SUBSTANCES

Two complimentary filter materials are used for the adsorption of gaseous substances. The activated carbon facilitates the physical adsorption process while the BAC granules facilitate a chemical adsorption process. Neutralisation of specific gaseous substances is achieved through chemical binding with the reaction substance that is deposited on the carrier material. Because the physical and chemical adsorption processes are complementary, an extremely wide range of gases and odours can be collected.

Activated carbon



BAC granules



Activated carbon/BAC

