

Correct use

Filter Fan Unit 1200x600 is a product (partly completed machine) as defined by Machinery Directive 2006/42/EC and must only be used in accordance with the technical data and safety requirements set out in this quick-start guide and the documentation that can be found on the relevant product page in our Online Shop at www.item24.com.

Filter fan units (FFUs) are used in many different areas of application to lower particle concentrations in cleanroom facilities, parts of an overall system or parts of a building. Their use is only permitted indoors – they must not be used outdoors (e.g. on terraces, in school playgrounds etc.). Air is drawn into the top section of the unit and, in some designs, coarse particles are captured by a pre-filter. In the bottom section, a high-grade filter removes fine particles from the air, which is then blown into the room or defined zones.

The basic safety provisions of the following rules and regulations applicable to FFUs and their components have been complied with:

- Machinery Directive 2006/42/EC (partly completed machine)
- Low Voltage Directive 2014/35/EU
- EMC Directive 2014/30/EU
- RoHS Directive 2011/65/EU, including the amendment to the Directive (EU 2015/863)
- EN 60034-1:2010 + corr. 2010 Rotating electrical machines
- EN 60204-1:2007 + A1:2009 + corr. 2010 Safety of machinery - electrical equipment
- EN ISO 5801:2008-10: Industrial Fans
- VDMA 24167 Fans – Safety requirements



CAUTION! Internal company requirements and the regulations that apply in the country where the product is being used must be observed. You must not make any design modifications to, or carry out any machining work on, Filter Fan Unit 1200x600 yourself. We will assume no liability for any resulting damage or injury.

CAUTION! Unsafe or inappropriate use of Filter Fan Unit 1200x600 poses a risk of serious injury caused by falling loads, crushing and cuts.

Improper use

Improper use is defined as any use of the product for purposes other than those authorised in this user guide and under the definition of correct use. We will assume no liability for any resulting damage or injury.

Filter Fan Unit 1200x600 must not be used:

- To provide structural support
- As a climbing aid

FFUs may be stepped on or walked on by a person, provided the unit has been installed properly and the overall construction exhibits the necessary load-carrying capacity. Please take note of the directions on the FFU. Do not step on filters, safety guards or electrical components.

Safety instructions



CAUTION! To ensure the satisfactory operation and optimum performance of Filter Fan Unit 1200x600, it is essential that operators and maintenance staff familiarise themselves with the documentation at a very early stage.

- During positioning and operation, make sure no crushing, entrapment, cutting, impact or tripping hazards can arise that affect handling and the surrounding area.
- In the event of damage to structural or electrical components, immediately shut down the unit and contact an appropriately qualified person, such as a mechanic or electrician.
- Do not use the unit in rooms with a high dust content, humidity or temperature.
- Never feed small objects such as needles or screws into the unit and do not place anything on top of it.
- Always disconnect the power cable from the mains power by pulling the plug out of the socket and always fully uncoil the power cord before using the unit.
- Check the unit for corrosion, wear, cracks, deformation, etc. on a regular basis and whenever starting it up. Only undamaged equipment can be taken into service.
- The immediate vicinity of Filter Fan Unit 1200x600 is considered a safety zone. This safety zone must always be kept clear to prevent both damage to material and buildings and personal injury.
- Until such time as Filter Fan Unit 1200x600 has been safely commissioned, it is essential that no-one is allowed access underneath the unit or the safety zone designated by the operator.
- Children and teenagers under the age of 18 must be supervised to ensure they do not play with the unit.
- Never cover the air inlet or air outlet. Lightweight, moving objects, such as curtains or fabrics, must be kept away from the immediate vicinity of Filter Fan Unit 1200x600 and out of the safety zone designated by the operator, as there is a risk these could get sucked into the unit.
- Do not touch the unit with damp hands.
- No liquids must ever get into the unit. If this does occur, disconnect the unit from the power supply and contact the manufacturer.
- Never use Filter Fan Unit 1200x600 close to a heat source or in the vicinity of flammable objects or products such as aerosol cans, paints or solvents.
- When leaving the unit unattended for lengthy periods of time, switch it off or disconnect it from the mains power supply.
- Disconnect the unit from the mains when transporting or repositioning it.
- The unit must be disconnected from the mains for cleaning, maintenance and servicing.
- Filter Fan Unit 1200x600 must only be operated when operational safety is ensured.
- All assembly, commissioning and electrical installation work must be carried out by trained, qualified persons only.
- Filter Fan Unit 1200x600 must only be operated in the designated areas and in line with its performance data.
- Filter Fan Unit 1200x600 should be used as directed by the manufacturer, and only for the tasks/media specified in the order and order confirmation.
- Planners, manufacturers, operators and users are responsible for proper and safe installation and for safe operation. Safety equipment (e.g. safety guards) and HEPA filters must only ever be dismantled for maintenance purposes. They must not be circumvented or deactivated.

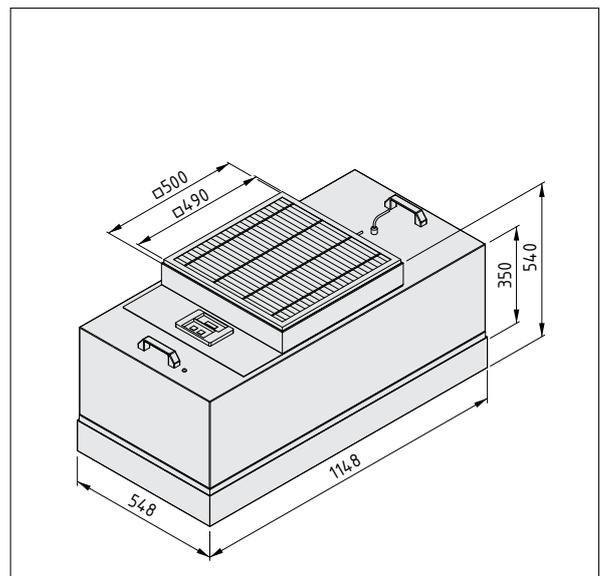
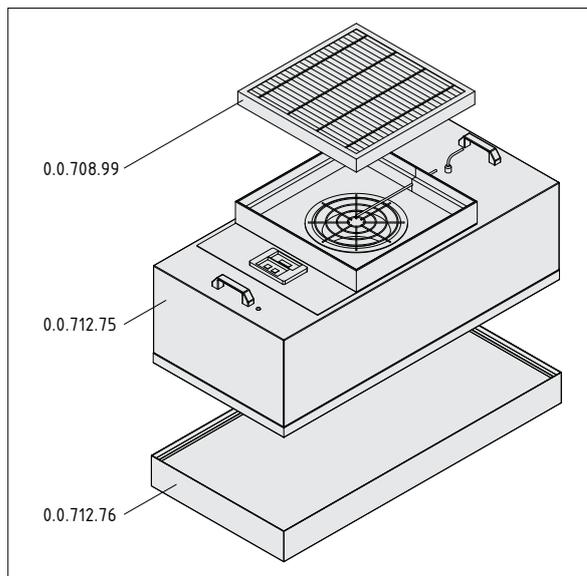
Faults may occur as a result of incorrect commissioning and the service life may be shortened.

- To prevent crushing and cuts, nearby objects should be kept a suitable distance away.
- Load values must not be exceeded.

Product description

Ready-to-connect Filter Fan Unit 1200x600 (FFU), combined with Pre-Filter M5 and HEPA Filter H14, removes 99.995 percent of all particles from the ambient air. Its filtration efficiency has been tested to EN 1822.

The integrated centrifugal fan produces a laminar displacement flow with a nominal air flow of 1.019 m³/h. The FFU StarterKit 230V (0.0.715.83) or FlowBox InstallationKit 230V (0.0.715.84) makes it easy to control the FFU output.



The motor is designed such that the speed is regulated via the in-built electronics and an externally accessible control device (potentiometer). All fans are dynamically balanced in two planes in accordance with VDI 2060 or DIN ISO 1940, section 1.

The unit comes with a HEPA Filter H14 as standard. The size and properties of the Filter need to be adapted in line with the air flow and pressure difference. All filters supplied have been tested to EN 1822 in the factory.

If you have any questions about other filter systems, please contact your item distribution partner.

The Housing slots into the HEPA Filter, which is held snugly in a frame construction using the Fixing System, where it rests on Angle Strips X 8 Al. All FFUs have an integrated safety guard (covered by the pre-filter) on the air inlet side. The Housing also contains sound-absorbent material to reduce noise levels.

Construction of Filter Fan Unit 1200x600 – integrated components:

1. FFU Housing 1200x600 with Centrifugal Fan EC 1PH (0.0.712.75)

- With free-running radial impeller
- With inlet nozzle and intake guard
- The impeller and motor are statically and dynamically balanced (balancing grade G 6.3 to VDI 2060)

2. FFU HEPA Filter H14 (0.0.712.76)

- Filter class H14
- Frame made from anodized extruded aluminium profiles
- Filter material made from folded fibreglass paper with hot-melt adhesive separation of the folds
- With a safety guard on the inlet and outlet sides
- With a fixing strut and half-round polyurethane gasket on the dusty air side
- Supporting surface area with a half-round polyurethane gasket on the clean air side

3. FFU Pre-Filter (0.0.708.99)

- Filter class M5
- No tools needed for installation or removal

Construction of Filter Fan Unit 1200x600

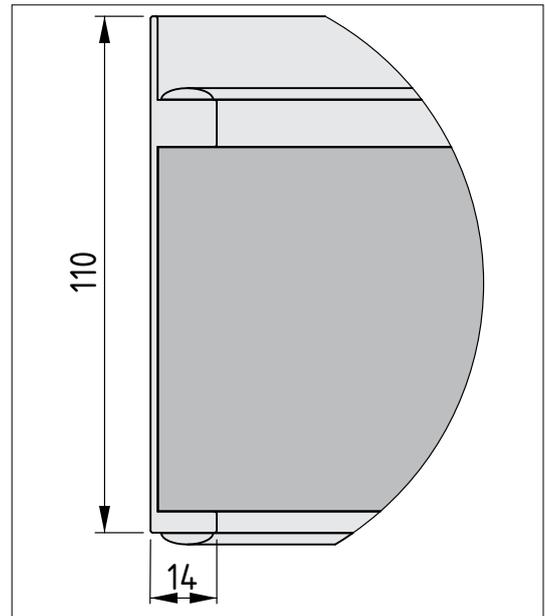


CAUTION!

- Visually inspect all components of FFU 1200x600 before and after installation to rule out potential damage caused during transport and/or installation. Individuals without the proper authorisation are not permitted to assemble or disassemble system components. If components are found to be damaged, please contact your local item Industrietechnik GmbH branch.
- Repairs to the components must be carried out by authorised personnel only. Please contact your local item Industrietechnik GmbH branch.
- After installing the FFU, carry out a cautious trial run.

NOTE!

- Caution! Two people needed for installation
- Occupational safety footwear
- Protective gloves



Installation scenario

This plug-and-play solution can very easily be integrated into a ceiling structure or frame with the help of the new Fixing System X 8. The gasket on the HEPA Filter creates a dust-tight and airtight seal with the ceiling. The frame, which is made from Line X profiles, has a modular dimension of 1200mm x 600mm and is then expanded with Fixing System X 8 as shown in the detailed drawing (0.0.722.68).

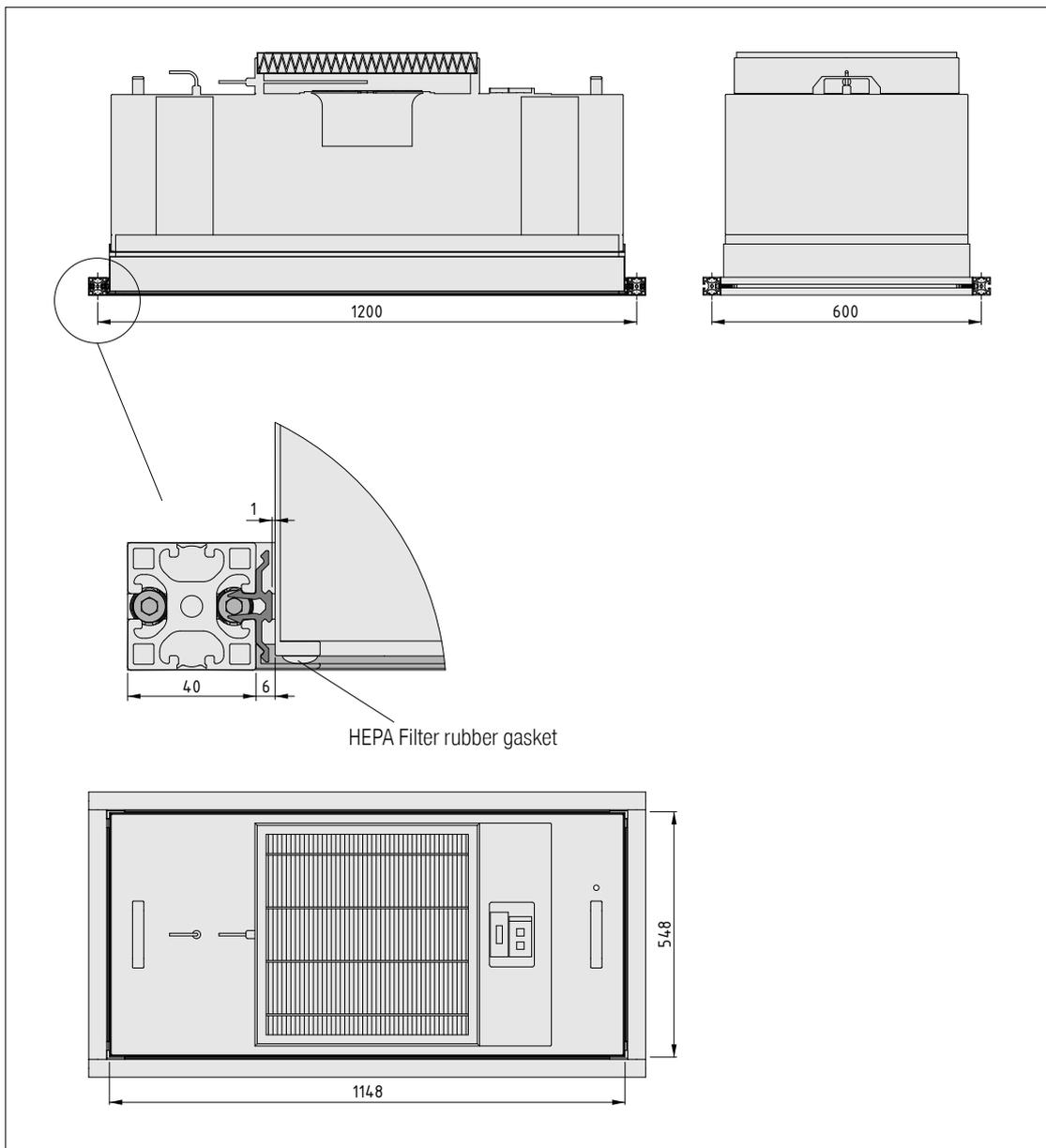
Start by unpacking the HEPA Filter.



CAUTION! Take care, as the filter is easily damaged – do not cut into the cardboard box. The side of the cardboard box with the symbols on it is the top. Carefully remove the film from the filter (do not use any sharp objects to do so). Take care, as your fingers could get jammed.

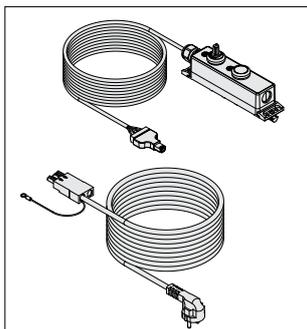
CAUTION! Make sure you maintain a gap of at least 200 mm between the air intake side of the FFU and the ceiling.

The HEPA filter is placed into the cutout in the ceiling, with the clean air side facing down. The protruding rubber gasket will be pointing down and, once it has been installed, it will be lying within the ceiling frame. The sign on the filter's aluminium frame will be upside down. The FFU is then installed by placing it on the filter.

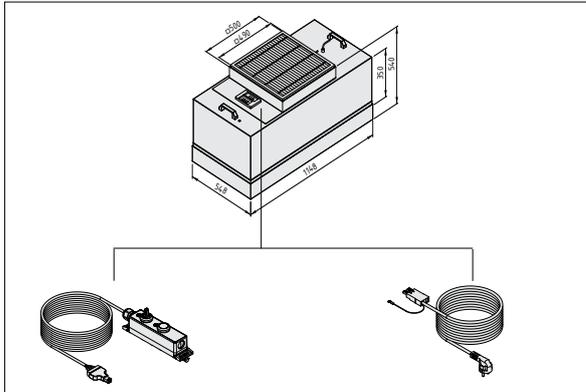


FFU StarterKit 230V – accessory

The FFU StarterKit 230V (0.0.715.83), which is available as an optional accessory, comprises a control unit and all the necessary cables for commissioning Filter Fan Unit 1200x600 directly and controlling it by means of a potentiometer.



Depending on the mounting conditions, we recommend that, when using FFU StarterKit 230V, this should be connected to the FFU before Filter Fan Unit 1200x600 is placed on the HEPA Filter. To do this, connect the GST 18-3 connector system to the socket provided for this purpose in the connection box and connect the control cable to any RJ45 connection. The green and yellow earth lead on the filter unit must be tightly screwed to the labelled earthing screw.



The control unit with the start/stop pushbutton and the potentiometer for regulating the air flow can easily be fastened onto a Line 8 profile (fastening materials included in the scope of supply) or used loose as a hand-held control unit. Adequate electrical engineering knowledge is needed for carrying out installation and wiring work. The control signal cable to this control unit is plugged into the RJ45 socket on the FFU connection box. Either of the two sockets can be used. The remaining socket can be used for the series connection of additional FFUs – up to ten FFUs can be controlled in this way. The integrated output regulator (potentiometer) controls the air output of the FFU.



CAUTION! The power cable is connected to the in-house mains power supply via a Wieland 3-pole connector of type GST18/3 and the earthing provided by the earthing screw. It is important to make sure there are no kinks or coils in the cable and do not install the cable along sharp edges. Before commissioning, make sure the partly completed machine is safe.

CAUTION! Do not connect the power line to the main power supply until you are sure that the unit can be operated safely.



NOTE! The noise level increases significantly at higher outputs. The air flow and of the unit are reduced significantly at lower outputs.

NOTE! For continuous operation, we recommend setting the output to 50%. This corresponds, below the FFU, to an approximate air velocity of 0.45m/s, as specified in ISO 14644 for operation in cleanrooms. A regular filter check is recommended, as both the main filter and the pre-filter become clogged over time. In this case, the capacity must be set above the recommended 50% so that the air velocity is still approx. 0.45m/s.

NOTE! When the unit is no longer in use or if it is not being supervised by authorised individuals for lengthy periods of time, its power supply must be switched off.



NOTE! You can find additional accessories for commissioning a FlowBox application with ease in the Online Shop, e.g. FlowBox InstallationKit 230V (0.0.715.84).

NOTE! Please take note of the detailed user guide in the Online Shop.



Improper disposal can pollute the environment.

Please dispose of Filter Fan Unit 1200x600 and its accessories in accordance with the laws of your country.

item

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