

Features

Filter Fan for electrical cabinets and enclosures 120 V or 230 V AC versions

- Very low acoustic noise
- Minimal depth within enclosure
- Air volume (14...370) m³/h (with Exhaust Filter installed in cabinet)
- Air volume (24...500) m³/h (free flow)
- Power consumption (4...70) W
- Operating voltage: 120 or 230 V AC (50/60Hz)
- Time-saving installation and maintenance
- Further available versions*:
 - EMC Filter Fan (7F.70) and EMC Exhaust Filter (7F.07)
 - Filter Fan supplied in Reverse flow mode (7F.80)

* Product codes, see pages 5 & 8

Note:

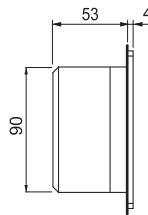
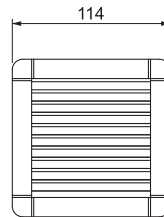
By reversing the fan motor, the air direction can be changed from "Inlet" Filter Fan mode to "Exhaust" Filter Fan mode ** (except for the types 7F.50.8.xxx.4370 and 7F.50.8.xxx.5500).

** Supplied in "Inlet" Filter Fan mode (Standard).

7F.50.8.xxx.1020



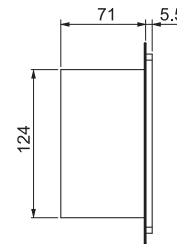
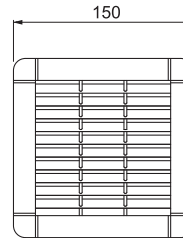
- Operating voltage 120, 230 V AC
- Air volume 24 m³/h
- Rated power 13 W
- Size 1



7F.50.8.xxx.2055



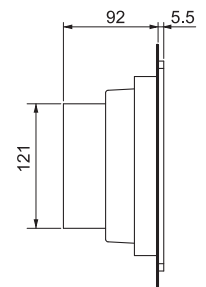
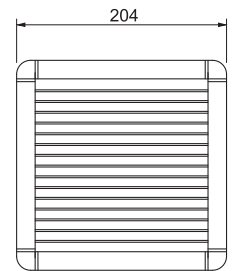
- Operating voltage 120, 230 V AC
- Air volume 55 m³/h
- Rated power 22 W
- Size 2



7F.50.8.xxx.3100



- Operating voltage 120, 230 V AC
- Air volume 100 m³/h
- Rated power 22 W
- Size 3



Fan data

Air volume (free flow)	m ³ /h	24	55	100
Air volume (with exhaust filter installed)	m ³ /h	14	40	75
Noise level	dB (A)	30	43	43
Life time at 40°C	h	50 000	50 000	50 000

Electrical data

Operating voltage	V AC (50/60 Hz)	120	230	120	230	120	230
Current consumption	A	0.14	0.1	0.26	0.14	0.26	0.14
Rated power	W	13	13	22	22	22	22

Other data

Housing, cover	Plastics according to UL94 V-0, light gray (RAL 7035)						
Filter mat (included)	EU3 according to DIN 24185, filtering degree (80...90) %						
Filter material	Synthetic fibre with progressive construction, temperature resistant to +100°C, self extinguishing, Class F1 (DIN 53438)						
Electrical connections / wire size	3-pole screw terminals / max. 2.5 mm ²						
Screw torque	Nm	0.8					
Ambient temperature range	°C	-10...+70					
Protection class		I					
Protection category according to EN 60529		IP54					

Approvals (according to type)



Features

**Filter Fan for electrical cabinets and enclosures
120 V or 230 V AC versions**

- Very low acoustic noise
- Minimal depth within enclosure
- Air volume (14...370) m³/h (with Exhaust Filter installed in cabinet)
- Air volume (24...500) m³/h (free flow)
- Power consumption (4...70) W
- Operating voltage: 120 or 230 V AC (50/60Hz)
- Time-saving installation and maintenance
- Further available versions*:
 - EMC Filter Fan (7F.70) and EMC Exhaust Filter (7F.07)
 - Filter Fan supplied in Reverse flow mode (7F.80)

* Product codes, see pages 5 & 8

Note:

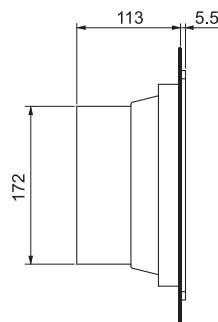
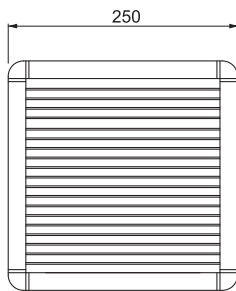
By reversing the fan motor, the air direction can be changed from "Inlet" Filter Fan mode to "Exhaust" Filter Fan mode ** (except for the types 7F.50.8.xxx.4370 and 7F.50.8.xxx.5500).

** Supplied in "Inlet" Filter Fan mode (Standard).

7F.50.8.xxx.4230



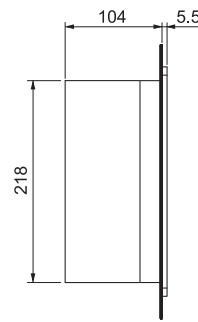
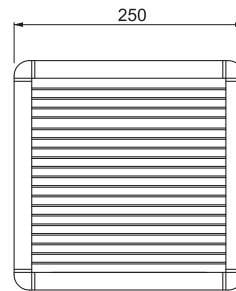
- Operating voltage 120, 230 V AC
- Air volume 230 m³/h
- Rated power 40 W
- Size 4



7F.50.8.xxx.4370



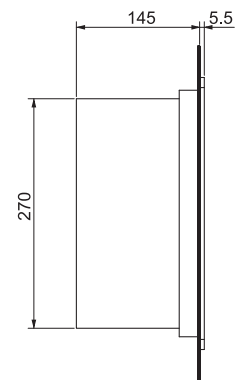
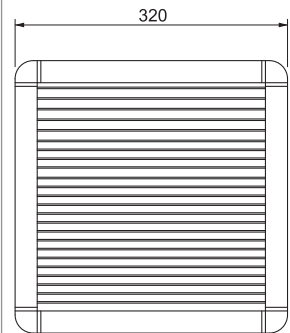
- Operating voltage 120, 230 V AC
- Air volume 370 m³/h
- Rated power 70 W
- Size 4



7F.50.8.xxx.5500



- Operating voltage 120, 230 V AC
- Air volume 500 m³/h
- Rated power 70 W
- Size 5



Fan data							
Air volume (free flow)	m ³ /h	230		370		500	
Air volume (with exhaust filter installed)	m ³ /h	180		250		370	
Noise level	dB (A)	53		65		65	
Life time at 40°C	h	50 000		50 000		50 000	
Electrical data							
Operating voltage	V AC (50/60 Hz)	120	230	120	230	120	230
Current consumption	A	0.34	0.17	0.8	0.4	0.8	0.4
Rated power	W	40	40	70	70	70	70
Other data							
Housing, cover		Plastics according to UL94 V-0, light gray (RAL 7035)					
Filter mat (included)		EU3 according to DIN 24185, filtering degree (80...90) %					
Filter material		Synthetic fibre with progressive construction, temperature resistant to +100°C, self extinguishing, Class F1 (DIN 53438)					
Electrical connections / wire size		3-pole screw terminals / max. 2.5 mm ²					
Screw torque	Nm	0.8					
Ambient temperature range	°C	-10...+70					
Protection class		I					
Protection category according to EN 60529		IP54					
Approvals (according to type)							

Features

Filter Fan for electrical cabinets and enclosures 24 V DC versions

- Very low acoustic noise
- Minimal depth within enclosure
- Air volume (14...370) m³/h (with Exhaust Filter installed in cabinet)
- Air volume (24...500) m³/h (free flow)
- Power consumption (4...70) W
- Operating voltage: 24 V DC
- Time-saving installation and maintenance
- Further available versions*:
 - EMC Filter Fan (7F.70) and EMC Exhaust Filter (7F.07)
 - Filter Fan supplied in Reverse flow mode (7F.80)

* Product codes, see pages 5 & 8

Note:

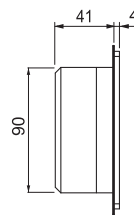
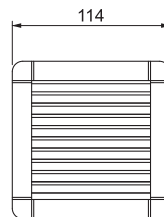
By reversing the fan motor, the air direction can be changed from "Inlet" Filter Fan mode to "Exhaust" Filter Fan mode ** (except for the types 7F.50.8.xxx.4370 and 7F.50.8.xxx.5500).

** Supplied in "Inlet" Filter Fan mode (Standard).

7F.50.9.024.1020



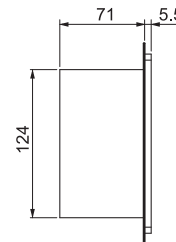
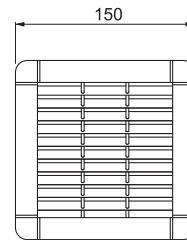
- Operating voltage 24 V DC
- Air volume 24 m³/h
- Rated power 4 W
- Size 1



7F.50.9.024.2055



- Operating voltage 24 V DC
- Air volume 55 m³/h
- Rated power 9 W
- Size 2



Fan data			
Air volume (free flow)	m ³ /h	24	55
Air volume (with exhaust filter installed)	m ³ /h	14	40
Noise level	dB (A)	35	45
Life time at 40°C	h	50 000	50 000
Electrical data			
Operating voltage	V DC	24	24
Current consumption	A	0.16	0.37
Rated power	W	4	9
Other data			
Housing, cover		Plastics according to UL94 V-0, light gray (RAL 7035)	
Filter mat (included)		EU3 according to DIN 24185, filtering degree (80...90) %	
Filter material		Synthetic fibre with progressive construction, temperature resistant to 100°C, self extinguishing, Class F1 (DIN 53438)	
Electrical connections / wire size		3-pole screw terminals / max. 2.5 mm ²	
Screw torque	Nm	0.8	
Ambient temperature range	°C	-10...+70	
Protection class		I	
Protection category according to EN 60529		IP54	
Approvals (according to type)			

Features

Filter Fan for electrical cabinets and enclosures 24 V DC versions

- Very low acoustic noise
- Minimal depth within enclosure
- Air volume (14...370) m³/h (with Exhaust Filter installed in cabinet)
- Air volume (24...500) m³/h (free flow)
- Power consumption (4...70) W
- Operating voltage: 24 V DC
- Time-saving installation and maintenance
- Further available versions*:
 - EMC Filter Fan (7F.70) and EMC Exhaust Filter (7F.07)
 - Filter Fan supplied in Reverse flow mode (7F.80)

* Product codes, see pages 5 & 8

Note:

By reversing the fan motor, the air direction can be changed from "Inlet" Filter Fan mode to "Exhaust" Filter Fan mode ** (except for the types 7F.50.8.xxx.4370 and 7F.50.8.xxx.5500).

** Supplied in "Inlet" Filter Fan mode (Standard).

7F.50.9.024.3100

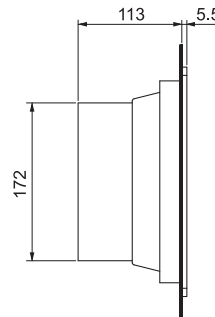
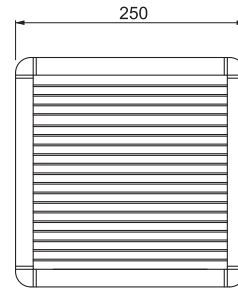
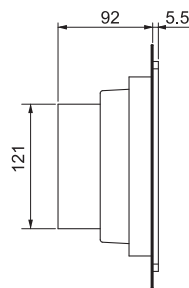
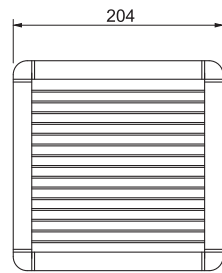


- Operating voltage 24 V DC
- Air volume 100 m³/h
- Rated power 9 W
- Size 3

7F.50.9.024.4230



- Operating voltage 24 V DC
- Air volume 230 m³/h
- Rated power 26 W
- Size 4



Fan data			
Air volume (free flow)	m ³ /h	100	230
Air volume (with exhaust filter installed)	m ³ /h	75	180
Noise level	dB (A)	45	61
Life time at 40°C	h	50 000	50 000
Electrical data			
Operating voltage	V DC	24	24
Current consumption	A	0.37	1.08
Rated power	W	9	26
Other data			
Housing, cover	Plastics according to UL94 V-0, light gray (RAL 7035)		
Filter mat (included)	EU3 according to DIN 24185, filtering degree(80...90) %		
Filter material	Synthetic fibre with progressive construction, temperature resistant to 100°C, self extinguishing, Class F1 (DIN 53438)		
Electrical connections / wire size	3-pole screw terminals / max. 2.5 mm ²		
Screw torque	Nm	0.8	
Ambient temperature range	°C	-10...+70	
Protection class	I		
Protection category according to EN 60529	IP54		
Approvals (according to type)			

Ordering information

Example: Series 7F, Filter Fan for mounting in sidewalls, operating voltage 230 V AC, size 1, air volume 24 m³/h.



- Series** _____
- Type** _____
 50 = Filter Fan - for indoor use
 70 = EMC Filter Fan - for indoor use
 80 = Reverse flow Filter Fan - for indoor use
- Supply version** _____
 8 = AC (50/60 Hz)
 9 = DC
- Operating voltage** _____
 024 = 24 V DC
 120 = 120 V AC
 230 = 230 V AC
- Enclosure cut-out** _____
 1 = Size 1 (92^{+0.5} x 92^{+0.5}) mm
 2 = Size 2 (125^{+1.0} x 125^{+1.0}) mm
 3 = Size 3 (177^{+1.0} x 177^{+1.0}) mm
 4 = Size 4 (224^{+1.0} x 224^{+1.0}) mm
 5 = Size 5 (291^{+1.0} x 291^{+1.0}) mm
- Air volume (free flow)** _____
 020 = 24 m³/h
 055 = 55 m³/h
 100 = 100 m³/h
 230 = 230 m³/h
 370 = 370 m³/h
 500 = 500 m³/h

Filter Fans - All versions

Standard versions	EMC versions	Reverse flow versions	
7F.50.8.120.1020	—	7F.80.8.120.1020	Filter Fan, Size 1
7F.50.8.120.2055	—	7F.80.8.120.2055	Filter Fan, Size 2
7F.50.8.120.3100	—	7F.80.8.120.3100	Filter Fan, Size 3
7F.50.8.120.4230	—	7F.80.8.120.4230	Filter Fan, Size 4
7F.50.8.120.4370	—	7F.80.8.120.4370	Filter Fan, Size 4
7F.50.8.120.5500	—	7F.80.8.120.5500	Filter Fan, Size 5
7F.50.8.230.1020	7F.70.8.230.1020	7F.80.8.230.1020	Filter Fan, Size 1
7F.50.8.230.2055	7F.70.8.230.2055	7F.80.8.230.2055	Filter Fan, Size 2
7F.50.8.230.3100	7F.70.8.230.3100	7F.80.8.230.3100	Filter Fan, Size 3
7F.50.8.230.4230	7F.70.8.230.4230	7F.80.8.230.4230	Filter Fan, Size 4
7F.50.8.230.4370	7F.70.8.230.4370	7F.80.8.230.4370	Filter Fan, Size 4
7F.50.8.230.5500	7F.70.8.230.5500	7F.80.8.230.5500	Filter Fan, Size 5
7F.50.9.024.1020	7F.70.9.024.1020	7F.80.9.024.1020	Filter Fan, Size 1
7F.50.9.024.2055	7F.70.9.024.2055	7F.80.9.024.2055	Filter Fan, Size 2
7F.50.9.024.3100	7F.70.9.024.3100	7F.80.9.024.3100	Filter Fan, Size 3
7F.50.9.024.4230	7F.70.9.024.4230	7F.80.9.024.4230	Filter Fan, Size 4

Note:
 The technical features (air volume, dimensions and electrical parameters) for the Standard Filter Fans (7F.50), the EMC Filter Fans (7F.70) and the Reverse flow versions (7F.80) - are exactly the same.

Features

Exhaust Filter

The size of the Exhaust Filter should match the size of the Filter Fan to achieve the best ventilation within the cabinet

- Minimum depth within enclosure
- Time-saving installation and maintenance
- Further available versions*:
- EMC Exhaust Filters (7F.07)

* Product codes, see page 8

7F.05.0.000.1000



- For Filter Fans 7F.50.x.xxx.1020
- Size 1

7F.05.0.000.2000

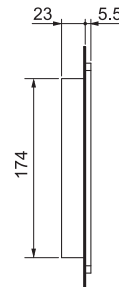
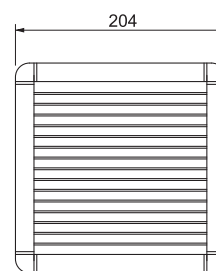
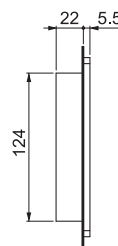
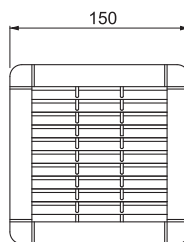
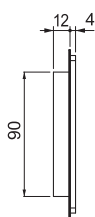
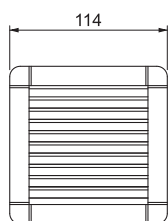


- For Filter Fans 7F.50.x.xxx.2055
- Size 2

7F.05.0.000.3000



- For Filter Fans 7F.50.x.xxx.3100
- Size 3



Other data

Housing, Cover

Plastics according to UL94 V-0, light gray (RAL 7035)

Filter mat (included)

EU3 according to DIN 24185, filtering degree (80...90) %

Filter material

Synthetic fibre with progressive construction, temperature resistant to +100°C, self extinguishing, Class F1 (DIN 53438)

Protection category according to EN 60529

IP54

Approvals (according to type)



Features

Exhaust Filter

The size of the Exhaust Filter should match the size of the Filter Fan to achieve the best ventilation within the cabinet

- Minimum depth within enclosure
- Time-saving installation and maintenance
- Further available versions*:
- EMC Exhaust Filters (7F.07)

* Product codes, see page 8

7F.05.0.000.4000

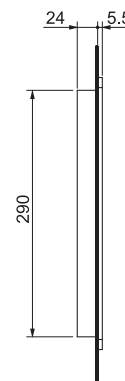
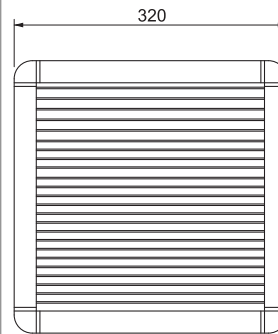
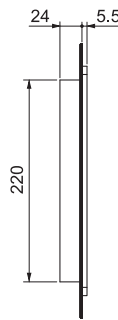
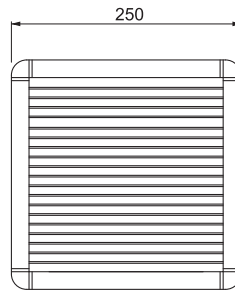


- For Filter Fans 7F.50.x.xxx.4230 or 7F.50.8.xxx.4370
- Size 4

7F.05.0.000.5000



- For Filter Fans 7F.50.8.xxx.5500
- Size 5

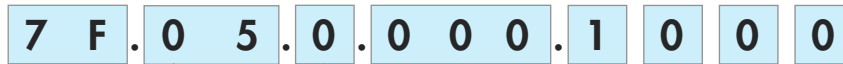


Other data

Housing, Cover	Plastics according to UL94 V-0, light gray (RAL 7035)
Filter mat (included)	EU3 according to DIN 24185, filtering degree (80...90) %
Filter material	Synthetic fibre with progressive construction, temperature resistant to +100°C, self extinguishing, Class F1 (DIN 53438)
Protection category according to EN 60529	IP54
Approvals (according to type)	CE c RU us

Ordering information

Example: Series 7F, Exhaust Filter for mounting in sidewalls, size 1.



- Series** _____
- Type**
05 = Exhaust Filter - for indoor use
07 = EMC Exhaust Filter - for indoor use
- Supply version**
0 = Not applicable for Exhaust Filter
- Operating voltage**
000 = Not applicable for Exhaust Filter
- Enclosure cut-out**

- 1000 = Size 1 (92^{+0.5} x 92^{+0.5}) mm
- 2000 = Size 2 (125^{+1.0} x 125^{+1.0}) mm
- 3000 = Size 3 (177^{+1.0} x 177^{+1.0}) mm
- 4000 = Size 4 (224^{+1.0} x 224^{+1.0}) mm
- 5000 = Size 5 (291^{+1.0} x 291^{+1.0}) mm

Exhaust Filter - All versions

Standard-versions	EMC - versions	
7F.05.0.000.1000	7F.07.0.000.1000	Exhaust Filter, Size 1
7F.05.0.000.2000	7F.07.0.000.2000	Exhaust Filter, Size 2
7F.05.0.000.3000	7F.07.0.000.3000	Exhaust Filter, Size 3
7F.05.0.000.4000	7F.07.0.000.4000	Exhaust Filter, Size 4
7F.05.0.000.5000	7F.07.0.000.5000	Exhaust Filter, Size 5

Components

Standard-Filter Fan	Standard-Exhaust Filter	EMC-Filter Fan	EMC-Exhaust Filter	Filter mat	Size
7F.50.8.xxx.1020	7F.05.0.000.1000	7F.70.8.xxx.1020	7F.07.0.000.1000	07F.15	1
7F.50.8.xxx.2055	7F.05.0.000.2000	7F.70.8.xxx.2055	7F.07.0.000.2000	07F.25	2
7F.50.8.xxx.3100	7F.05.0.000.3000	7F.70.8.xxx.3100	7F.07.0.000.3000	07F.35	3
7F.50.8.xxx.4230	7F.05.0.000.4000	7F.70.8.xxx.4230	7F.07.0.000.4000	07F.45	4
7F.50.8.xxx.4370	7F.05.0.000.4000	7F.70.8.xxx.4370	7F.07.0.000.4000	07F.45	4
7F.50.8.xxx.5500	7F.05.0.000.5000	7F.70.8.xxx.5500	7F.07.0.000.5000	07F.55	5
7F.50.9.024.1020	7F.05.0.000.1000	7F.70.9.024.1020	7F.07.0.000.1000	07F.15	1
7F.50.9.024.2055	7F.05.0.000.2000	7F.70.9.024.2055	7F.07.0.000.2000	07F.25	2
7F.50.9.024.3100	7F.05.0.000.3000	7F.70.9.024.3100	7F.07.0.000.3000	07F.35	3
7F.50.9.024.4230	7F.05.0.000.4000	7F.70.9.024.4230	7F.07.0.000.4000	07F.45	4

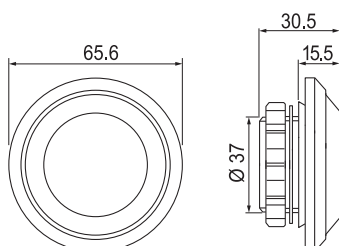
Spare Filter mats	07F.15	07F.25	07F.35	07F.45	07F.55
Protection category	IP54				

Accessories



07F.80

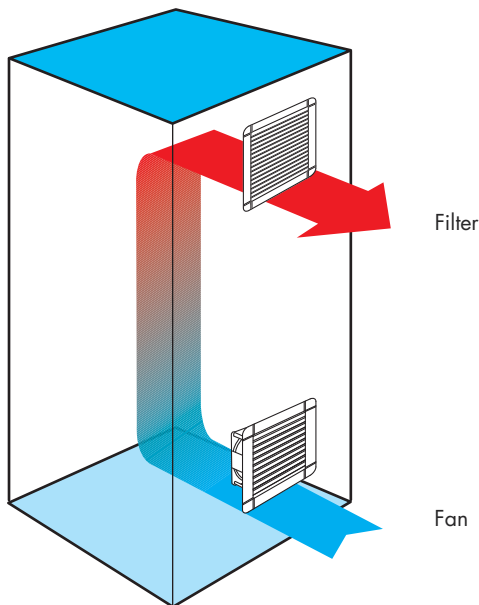
Pressure compensation device, for pressure compensation in closed cabinets or enclosures		07F.80
Air interface area	cm ²	7
Mounting		PG 29 thread with union nut
Torque	Nm	5 (max. 10)
Material		plastic according to UL94-V0
Dimensions (diameter / depth)	mm	65.5 / 30.5
Mounting position		upper part of cabinet sidewalls
Ambient temperature	°C	-45...+70
Protection category		IP55



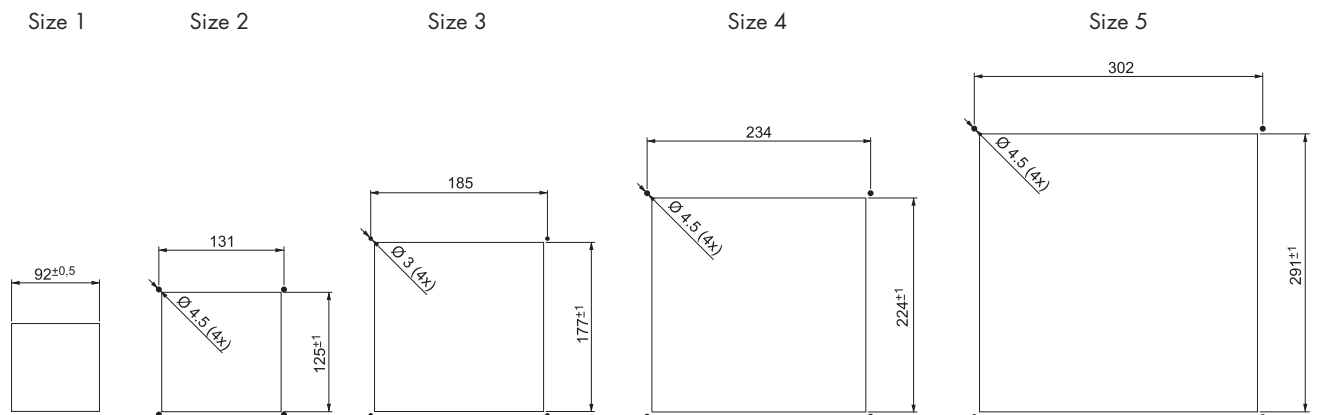
Unit package contains 2 pressure compensation devices

Mounting instructions for Filter Fans and Exhaust Filters

Mounting arrangement of Filter Fans and Exhaust Filters



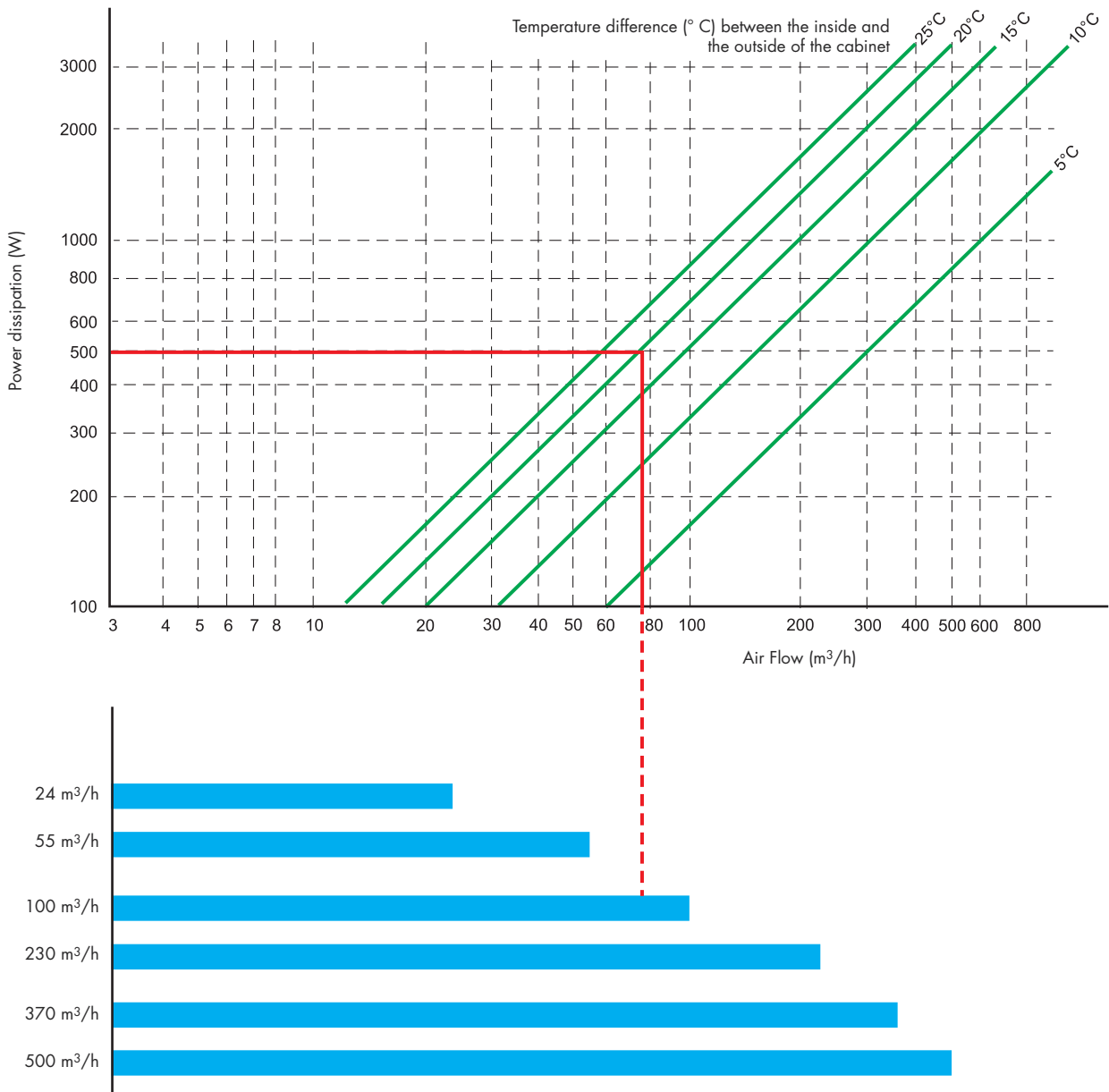
Drilling template and mounting cut-outs for Filter Fans and Exhaust Filter



Mounting and maintenance

1. Make the panel cut-out according to the size of the Filter Fan or Exhaust Filter in the sidewall of the cabinet as appropriate.
A template of the panel cut-out is included in the packaging of the Filter Fan or Exhaust Filter.
2. Make the electrical connection.
3. Mount by simply snapping the side-located lugs on the Filter Fan or Exhaust Filter into the panel cut-out (without using screws for sidewall thickness of 1,2...2,4 mm).
At other thickness it is recommended to mount the Filter Fan by the screws supplied (for size 1, the template shows the mounting cut-out only).
4. When screws are needed for the mounting, remove the plastic cover and fix the Filter Fan with the 4 screws supplied.
Then insert the filter mat and snap the plastic cover to the mounting frame.
5. During maintenance or when replacing the filter mat remove the plastic cover, replace the filter mat and snap on the plastic cover.

Fan selection



Example:

First, estimate the power dissipated within the cabinet. Then calculate the maximum difference between the internal and external temperature (green lines) by considering the difference between the maximum permitted internal temperature (as dictated by the temperature rating of the enclosed components, or specification) and the maximum temperature expected outside the cabinet.

The projection onto the X axis, of the intersection between the power (watts) and the appropriate green line, corresponds to the air flow rate in m³/h required to meet the maximum internal temperature limit. Extending this line vertically to intersect with the blue horizontal lines, indicates the most appropriate model of 7F fan to be fitted to the cabinet to provide the requisite air flow.

The example above considers a cabinet with an internal thermal power dissipation of 500 W, and assumes the maximum temperature difference between the inside and the outside of the cabinet to be 20 ° C. The required air flow can be seen to be a little less than 80 m³/h.

It is suggested that this is increased by 10% to allow for the affects of a dirty filter.

And so, it can be seen that models of the 7F with 100 m³ / h flow rate will provide the proper dissipation of heat under these circumstances.

Application notes

Filter Fan

The ball-bearing axial fan housing is made of aluminium and the rotor is made of plastic or metal (depending on the type).

Filter classes

Within DIN 24185 are specified 9 filter classes, categorised into 4 coarse dust filters und 5 fine dust filters.

The coarse dust filters (EU1 – EU4) are able to filter particles > 10 µm and the fine dust filters (EU5 – EU9) are able to filter particles from (1...10) µm.

Filter classes	Example of particle	Particle size
EU1 – EU4	Textile fibers, hair, sand, pollen, spores, insects, cement dust	> 10 µm
EU5 – EU9	Pollen, spores, cement dust, tobacco smoke, oil smoke, soot	(1...10) µm

Filtering degree (Am)

The degree of filtering (Am) is the percentages of dust, by weight, that is caught and retained by the filter.

Filter mats

The quality of these filters mats has been independently tested, according DIN 24185 and branded after passing the test. The filter mats are to filter class EU3 and have an average filtering degree of (80...90) %.

Filter material

The filter material consists of a synthetic fiber with progressive construction which is moisture-resistant to 100 % RH and temperature resistant to +100°C.

According to the strict requirements of fire class F1, DIN 53438, these filter mats are self extinguishing.

Progressive construction at filter mats

The individual fibers of these filter mats are bonded by a special process to provide a progressive construction where the fiber size and spacing varies through the thickness of the filter mat.

This means that coarse dust particles are caught early and fine dust later through the thickness of the mat. In this way the entire depth of the filter mat is used.

Flammability class of the housing and the cover

The plastic materials used comply with flammability class V-0, according UL94.

EMC Filter Fans and EMC Exhaust Filters

The plastic mounting frame of the EMC Filter Fans (7F.70) and EMC Exhaust Filters (7F.07) are sprayed with a conductive (metallic) paint.

The gasket located on the mounting frame, for sealing the Filter Fan or Exhaust Filter in the cabinet is also metalised.

In addition; located at the EMC Filter Fan between the metalized mounting frame and the filter mat, is a metal grid.

Therefore, between the metal parts of the Filter Fan and the metal cabinet, there is a conductive connection.

Filter Fan in "reverse flow" version

As supplied, the standard Filter Fan is in "Draw-In"- mode, which means that cool air is filtered and drawn into the cabinet. In some cases it may be required that the warm air is blown out of the cabinet. In which case it is possible to get Filter Fans in "Exhaust Filter" mode version (7F.80).

Mounting of the pressure compensation device

In sealed cabinets and enclosures the internal pressure can vary due to changes in temperature. The pressure compensation device (07F.80) will relieve this internal/external pressure differential whilst maintaining a high level of protection - preventing the ingress of dust and moisture into the cabinet or the enclosure. The pressure compensation device is approved for use in cabinets and enclosures according to DIN EN 62208.

Drill a hole $\varnothing 37^{+1.0}$ mm in the housing wall and fix the pressure compensation device with the accompanying nut. It is important to ensure that the sealing ring is located on the outside. To ensure optimum pressure balance, it is recommended to fit 2 pressure compensation device at the upper sides of the cabinet or enclosure.