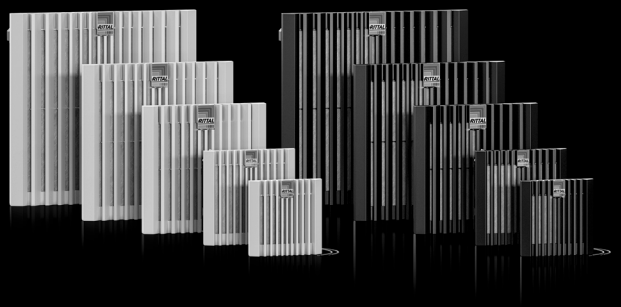
Rittal – The System.

Faster – better – everywhere.

Blue e+ fan-and-filter unit



Fan-and-filter unit

SK 3237.7xx/.8xx
SK 3238.7xx/.8xx
SK 3239.7xx/.8xx
SK 3240.7xx/.8xx
SK 3241.7xx/.8xx
SK 3243.7xx/.8xx
SK 3244.7xx/.8xx

Assembly and operating instructions

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Preface

Dear Customer!

Thank you for choosing a fan-and-filter unit from Rittal.

Yours
Rittal GmbH & Co. KG

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We are always happy to answer any technical questions regarding our entire range of products.

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1 Notes on documentation

These assembly and operating instructions are aimed at

– tradespersons who are familiar with assembly and installation of the fan-and-filter unit.
– trained specialists who are familiar with operation of the fan-and-filter unit.

1.1 Other applicable documents

Paper copies of the assembly and operating instructions are available for the unit types described here and are enclosed with the equipment.

We cannot accept any liability for damage associated with failure to observe these instructions. Where applicable, the instructions for any accessories used also apply.

1.2 Storing the documents

The assembly and operating instructions as well as all other applicable documents are an integral part of the product. They must be given to the plant operator. The operator is responsible for storage of the documents so they are readily available when needed.

1.3 Symbols used in these operating instructions

Danger!
A dangerous situation in which failure to comply with the instructions will result in death or severe injury.

Warning!
A dangerous situation which may cause death or serious injury if the instructions are not followed.

Caution!
A dangerous situation which may lead to (minor) injuries if the instructions are not followed.

Note:
Important notices and indication of situations which may result in material damage.

■ This symbol indicates an "action point" and shows that you should perform an operation or procedure.

2 Safety instructions

Please observe the following safety instructions when assembling and operating the unit:

– Always wear the prescribed personal protective equipment when working on the fan-and-filter unit.
– Do not make any changes to the fan-and-filter unit other than those described in these and other applicable instructions.
– Carefully debur the mounting cut-out before inserting the fan-and-filter unit.
– The fan-and-filter unit should be fitted with the membranes in a vertical position.
– The following work must only be carried out by qualified experts or trained personnel and with the system de-energised:
  – Assembly
  – Electrical connection
  – Changing the direction of airflow
  – Changing the mains connection position
  – Cleaning
  – Maintenance
  – Dismantling the fan-and-filter unit
– Connect the pre-fuse specified on the rating plate.
– Strip a maximum of 9 mm of the insulation from the individual wires in the electrical infeed and ensure that the cables are suitably secured.
– Never insert your fingers into the rotating fan blade.
– Never use flammable cleaning materials.
– Do not obstruct the air inlet and outlet of the fan-and-filter unit inside and outside the enclosure (see also section 4.2.2 "Layout of the components in the enclosure", page 6).
– The heat loss of the components installed in the enclosure must not exceed the specific air throughput of the fan-and-filter unit.
– Use only original spare parts and accessories.

3 Product description

Depending on the model chosen, your fan-and-filter unit may vary in appearance from the illustrations contained in these instructions. However, the functions are identical in principle.

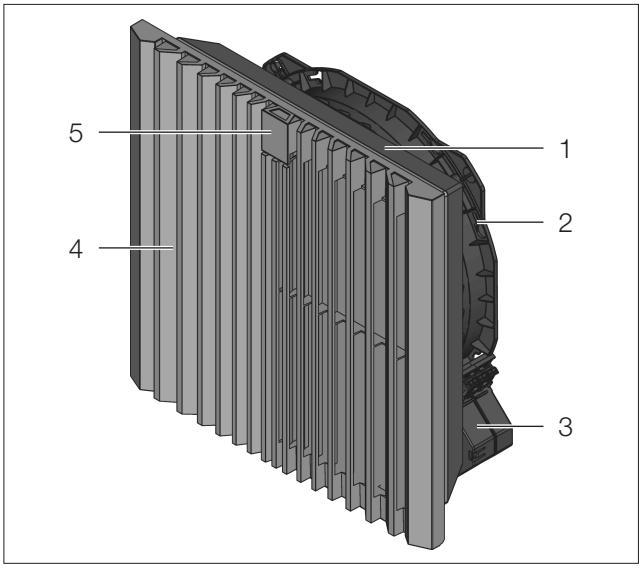


Fig. 1: Product description

Key
1 Filter box with filter mat
2 Fan housing
3 Variable electrical connection
4 Louvred grille
5 Function logo (to release the louvred grille)

3.1 Functional description

The fan-and-filter unit in conjunction with the corresponding outlet filter(s) is used to dissipate heat loss from enclosures, ventilate the enclosure and protect temperature-sensitive components. This is achieved via the direct infeed of ambient air, the temperature of which must be less than the admissible enclosure interior temperature. The system is fitted into prepared cut-outs.

3.1.1 Main components

The fan-and-filter unit is comprised of the following four main components: Fan motor, filter box, louvred grille with function logo and filter medium.

3.1.2 Control

We recommend controlling Rittal fan-and-filter units with one of the following accessories:
– Thermostat (Model No. 3110.000)
– Digital temperature display (Model No. 3114.200)
– Temperature-dependant speed controller (Model No. 3120.200)
– Hygrostat (Model No. 3118.000)
This reduces energy costs, and extends the service life of the fans and filters. The Rittal fan-and-filter unit series with EC fans offers the highest energy efficiency as well as a wide range of closed-loop control and monitoring options.

Note:
Speed controller 3120.200 can be deployed only for 1-phase AC units.

3.1.3 Safety equipment

The fan is equipped with thermal winding protection devices for protection against excess current and, in some cases, against overtemperature. Model 3237.xxx is impedance-protected. For rotary current fans, the winding protection is located in the star earthing of the motor.

3.1.4 Filter mats

The fan-and-filter unit / outlet filter is supplied with an installed pleated filter. The filter must be checked regularly in accordance with the level of dust exposure and replaced as necessary.

Note:
Special filter mats are required for EMC fan-and-filter units (see section 13 "Accessories").

3.2 Intended use

Rittal fan-and-filter units were developed and designed in accordance with the state of the art and the recognised rules governing technical safety. Nevertheless, if used improperly, they may pose a threat to life and limb or cause damage to property. The unit is only intended for ventilating enclosures and electronic cases. Any other use is deemed improper. The manufacturer will not be liable for any damages caused as a result of improper use, or for incorrect assembly, installation and use. All risk is borne solely by the user.
Proper usage also includes the observation of all valid documents and compliance with the inspection and servicing conditions.

3.3 Scope of supply

The fan is supplied in a packaging unit in a fully assembled state and ready to connect.
■ Please check the scope of supply for completeness.

Quantity	Description
1	Fan-and-filter unit
4	Mounting screws (not for 3237.7xx to 3239.7xx)
1	Assembly and operating instructions
1	Drilling template, self-adhesive
1	Pleated filter or EMC filter mat

Tab. 1: Scope of supply

4 Assembly and connections

4.1 Choosing the installation site

When choosing the installation site for the enclosure, please observe the following:
– The site for the enclosure, and hence the arrangement of the fan-and-filter unit, must be carefully selected so as to ensure good ventilation.
– The site must be free from excessive dirt and moisture.
– Fan-and-filter units must always be installed on vertical panels (door or walls).
– The ambient temperature must be lower than the permissible enclosure interior temperature.
– The mains connection data as stated on the rating plate of the unit must be guaranteed.

4.2 Assembly instructions

4.2.1 General

– Check the packaging carefully for signs of damage. Any packaging damage may be the cause of a subsequent functional failure.

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– The fan-and-filter and outlet filter must always be mounted on an enclosure in order to ensure air exchange.

Note:
The outlet filter should be at least the same size as the fan-and-filter unit.

– The enclosure must be sealed on all sides (IP54). If the enclosure has a leak, unfiltered, contaminated air may enter the enclosure, depending on the direction of airflow of the fan.
– To allow the louvred grille to be opened without problem when the fan-and-filter units are bayed vertically, a minimum separation should be observed.
– This is either 15 mm measured between drilling templates or between the associated mounting cut-outs in accordance with the following table:

Model No.	Separation between two mounting cut-outs
3237.xxx	39.5 mm
3238.xxx	39 mm
3239.xxx	42 mm
3240.xxx	46 mm
3243.xxx	46 mm

Tab. 2: Separation between two mounting cut-outs

4.2.2 Layout of the components in the enclosure

■ Observe the air flows from the internal fans of installed electronic components.

For installation, it is important to ensure that the airflows of fans and built-in electronic components do not have a negative influence on one another (air short-circuit). To ensure unimpeded air circulation, a minimum distance must be maintained between the fan and the component that corresponds to half the fan-and-filter unit's mounting cut-out.

4.3 Fitting the fan-and-filter unit or outlet filter

The fan-and-filter unit or outlet filter is mounted on a vertical panel of the enclosure:

■ For this purpose, the appropriate door, side or rear panel must be cut out using the supplied drilling template.

The fan-and-filter unit is generally fitted in the lower part of the enclosure, and the outlet filter in the upper part.

4.3.1 Cutting out the enclosure

■ Stick the self-adhesive drilling template supplied to the envisaged position on the door, side or rear panel of the enclosure.

Lines indicating the dimensions of cut-outs and drilling specifications for mounting and fixing of the fan (only necessary for sheet metal thickness 2.5 mm and above) are to be found on the drilling template. See also fig. 20 and fig. 22, page 21.

■ Make the cut-outs including the line width as per the drilling template.

Risk of injury!
Carefully deburr all cut-outs to prevent injuries caused by sharp edges.

■ Deburr the cut-outs.

4.3.2 Fitting the fan-and-filter unit

– The fan may be fitted without tools, by simply snapping into the preconfigured mounting cut-out.
– Make sure that the clips have snapped into place properly to guarantee secure mounting.
– From a sheet metal thickness of 2 mm, the clips should be pressed in individually.
– From a sheet metal thickness of 2.5 mm, the fan-and-filter unit must be screw-fastened in addition (tightening torque, see section 11 "Cut-out/drilling dimensions").
– To drill the lower holes, it is necessary to remove the louvred grille as shown in fig. 2. To do this, first loosen one hinge side and then the other.

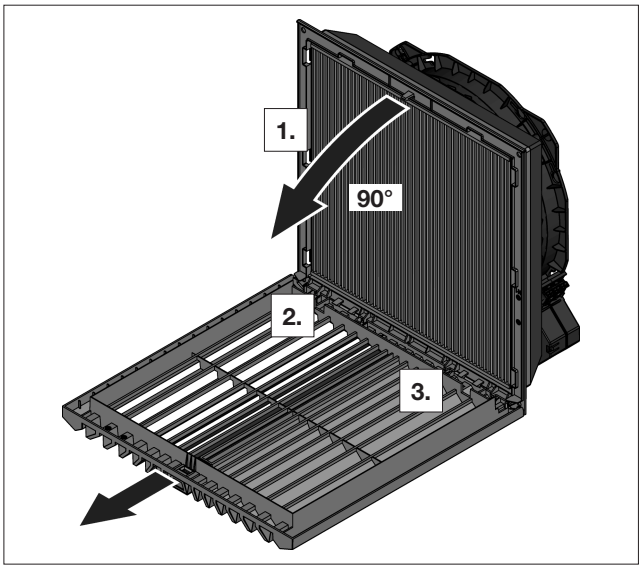


Fig. 2: Removing and mounting the louvred grille

– After screw-fastening the fan, the louvred grille must be mounted again in the reverse sequence.
– If transporting, it is necessary that you screw-fasten the fan to prevent it from falling out of the mounting cut-out.
– The fan-and-filter unit is a rotating component that may transfer vibrations and oscillations.
  Appropriate measures to decouple vibration must be taken in advance by the company responsible for the overall plant or system.
– The protection category can be increased by means of the following accessories:
  – IP55 by using a pleated filter and absorber mat.

– IP56 by using a hose-proof hood.

Note:
To increase the protection category, a pleated filter or hose-proof hood must be used for the fan-and-filter unit and outlet filter.

4.3.3 Safety clip

To prevent undesired opening of the louvred grille in special situations, the safety clip (see section 13 "Accessories") can be mounted below the function logo without tools. This can be used, for example, during tests or for transport.

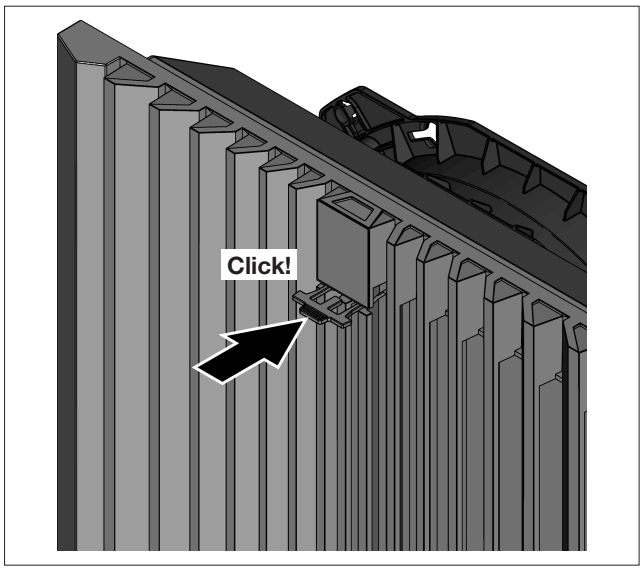


Fig. 3: Inserting the safety clip

- Use a small screwdriver to lever out the safety clip if it needs to be removed, e.g. to remove the louvred grille.

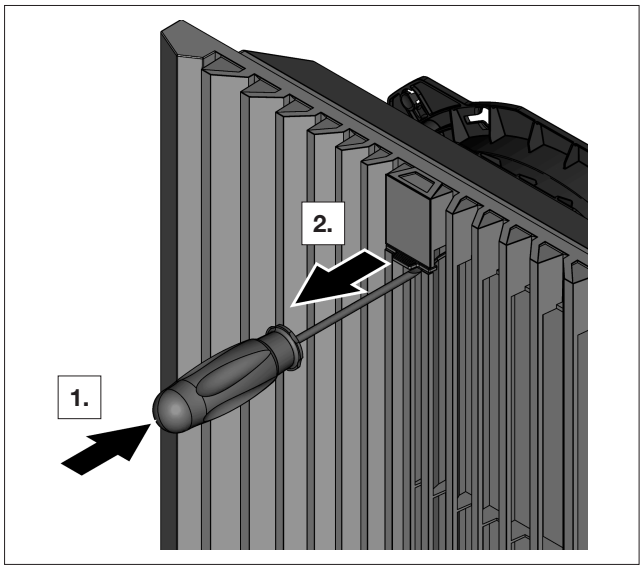


Fig. 4: Removing the safety clip

4.4 Notes on electrical connection

When performing the electrical connection, it is important to observe all valid national and regional regulations as well as the provisions of the responsible power supply company. Electrical connection must only be carried out by a qualified electrician who is responsible for compliance with the existing standards and regulations.

4.4.1 Connection data

– The voltage and frequency of the connection must correspond to the values stated on the rating plate.
– Electrical connection and any repairs may only be carried out by authorised specialist personnel.
– Use only original spare parts!
– For 1~ and 24 V (DC) fans, install the pre-fuse prescribed on the rating plate (circuit-breaker or slow fuse) to protect against short-circuiting.
– With the rotary current variant, install the pre-fuse prescribed on the rating plate or a circuit-breaker/ back-up protection to protect against short-circuiting, and set it to the prescribed rating value.
– The direction of airflow and the direction of rotation are each marked on the motor housing with an arrow.
– If a phase is missing, the fan will not start. If the rotary field is incorrect, the fan will run backwards.

4.4.2 Overvoltage protection and supply line load

The unit does not have its own overvoltage protection. Measures must be taken by the operator at the supply end to ensure effective lightning and overvoltage protection. The mains voltage must not exceed a tolerance of ±10%.

4.4.3 PE conductor connection

The PE conductor connection must be connected to the PE conductor system of the overall system.

5 Carrying out the electrical connection

5.1 Connecting the power supply

- Complete the electrical connection by following the wiring plans.

Note:
For technical data, refer to the rating plate.

- Insert the connection cable with wire end ferrules into the screwless spring terminals.
  Choose an appropriate pre-fuse according to the line cross-section (2 x 0.75 – 2.5 mm^2 multi-wire, 2 x 1.5 – 2.5 mm^2 fine-wire soldered).

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Caution!
If no wire end ferrules are used, the insulation of the individual wires should be stripped to a max. of 9 mm (to comply with clearance and creepage distances).

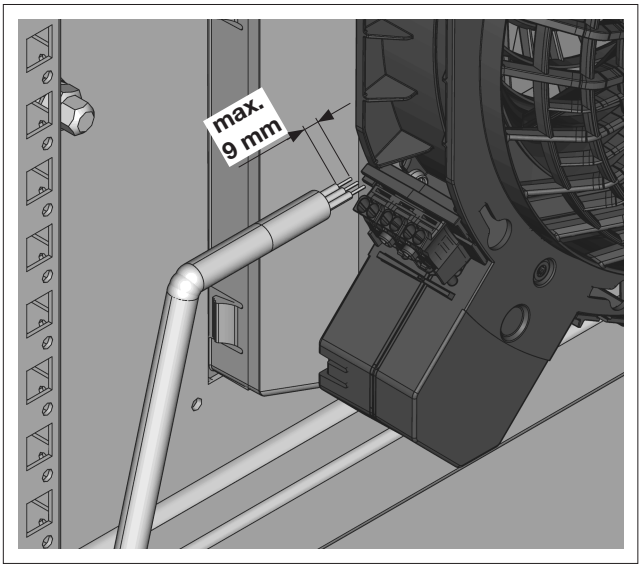


Fig. 5: Maximum permissible insulation stripping

- Fasten the connection cable at an appropriate location, e.g. the enclosure frame.

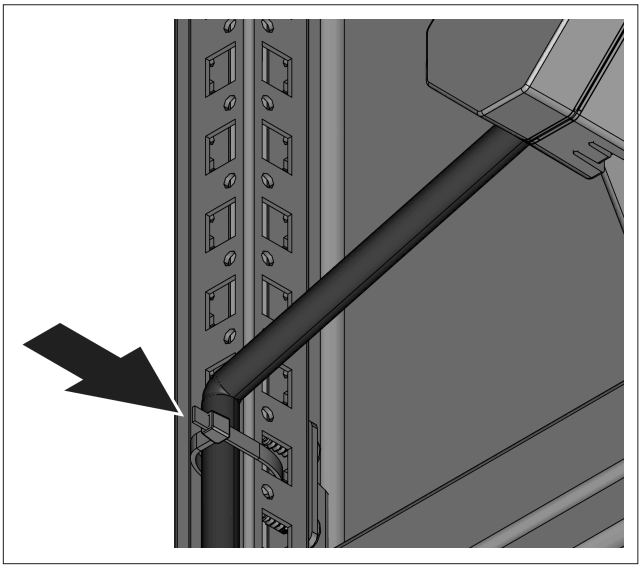


Fig. 6: Cable fastening with cable ties on the enclosure frame (example)

Note:
Fan-and-filter unit 3237.xxx is connected by way of two single wires which are led out of the unit.

5.2 Rotating the voltage connection

If the position of the voltage connection is not ideally accessible, it may be rotated through 90° and snapped into position.

Units 3238.xxx to 3239.xxx

- To unlock the bayonet connection, pull the bracket (see fig. 7) of the bayonet catch at the rear of the fan. This is located on the corner of the connection terminal.

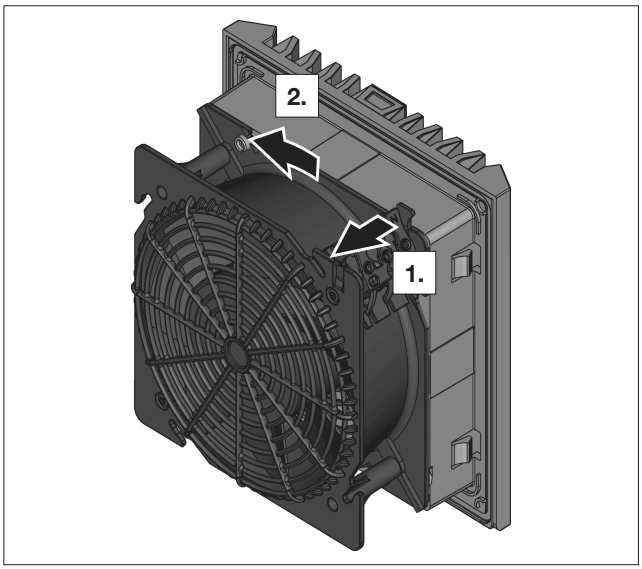


Fig. 7: Release the bayonet connection

- Turn the fan housing counter-clockwise to release the bayonet connection.
- Pull the fan housing backwards away from the filter box.

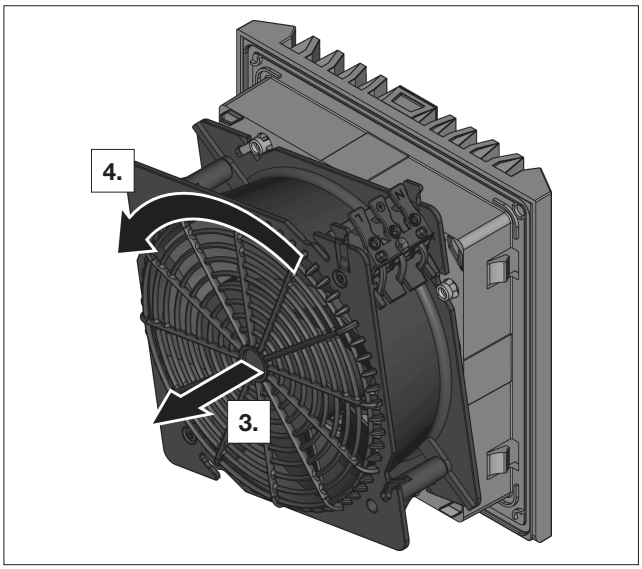


Fig. 8: Turning the fan housing

- Then turn the fan housing by 90°, 180° or 270° so that the electrical connection is in the desired position (see fig. 8).
- Place the fan housing back on the filter box (see fig. 9).

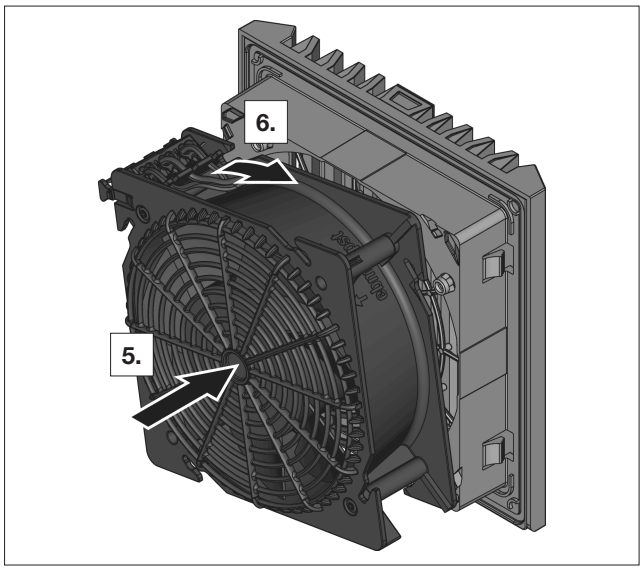


Fig. 9: Locking the bayonet connection

- Turn the fan housing clockwise until the bayonet connection latches.

Units 3240.xxx, 3241.xxx, 3243.xxx to 3244.xxx

- Press the release button of the bayonet connection at the rear of the fan (see fig. 10).
  This is located on the opposite corner from the connection terminal.

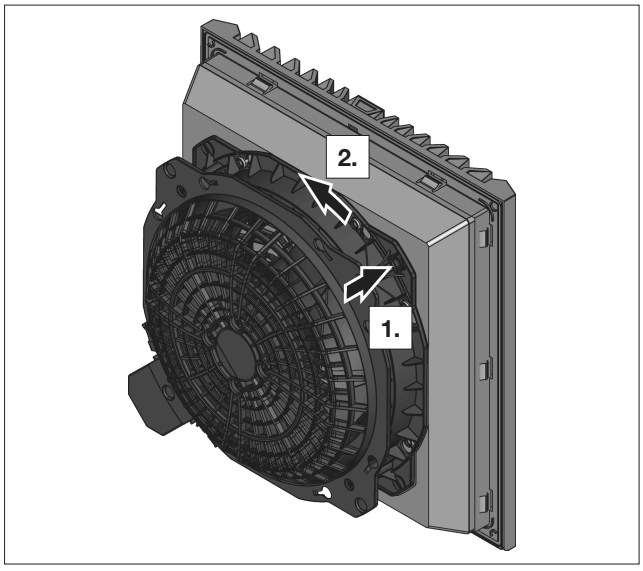


Fig. 10: Release the bayonet connection

- Turn the fan housing counter-clockwise to release the bayonet connection.
- Pull the fan housing backwards away from the filter box.

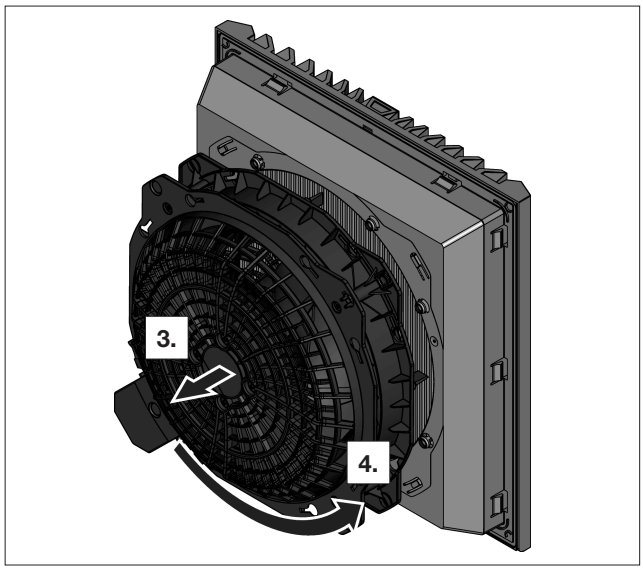


Fig. 11: Turning the fan housing

- Then turn the fan housing by 90°, 180° or 270° so that the electrical connection is in the desired position (see fig. 11).
- Place the fan housing back on the filter box (see fig. 12).

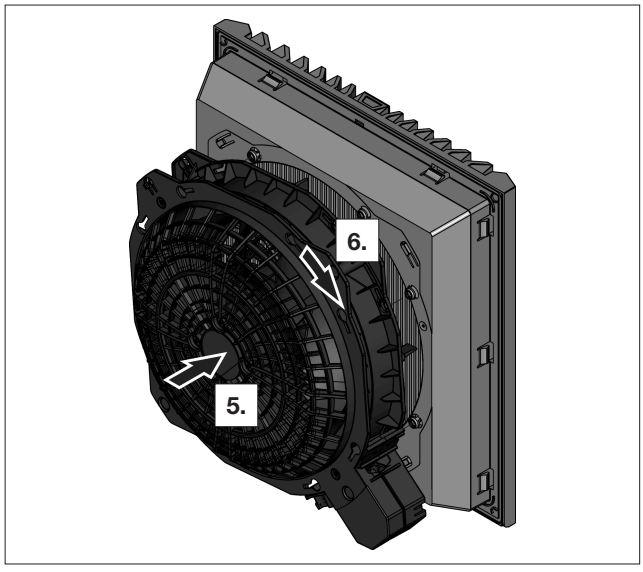


Fig. 12: Locking the bayonet connection

- Turn the fan housing clockwise until the bayonet connection latches.

5.3 Changing the direction of airflow

The direction of airflow blows into the enclosure from the outside as standard.

Should it become necessary to change the direction of airflow for technical reasons (space, specific component air routing etc.), this is easily achieved.

- Unlock the bayonet connection and detach the fan housing from the filter box.
  This is done in the same way as described in section 5.2 "Rotating the voltage connection", page 8.
- Turn the fan housing by 180°.

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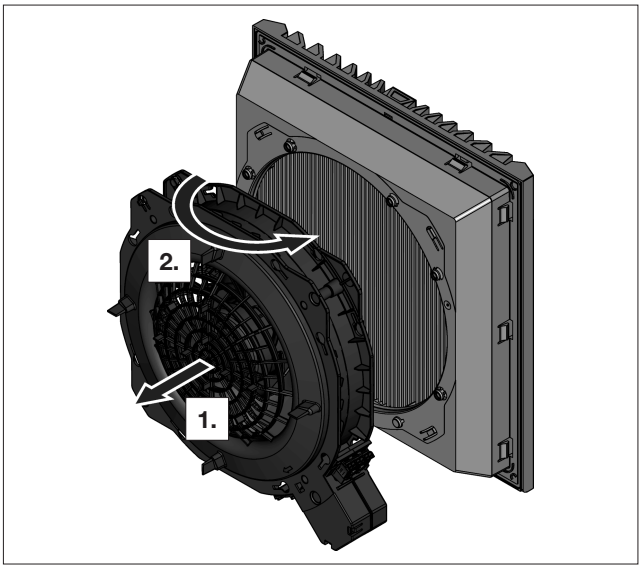


Fig. 13: Changing the direction of airflow

- Place the fan housing back on the filter box in this position and lock the bayonet connection.
  This is done in the same way as described in section 5.2 "Rotating the voltage connection", page 8.
- Please also observe the instructions outlined under section 4.2.1 "General", page 5.

Note:
If the direction of airflow is changed, the fan-and-filter unit blows air out of the enclosure.
- In this case, ensure that the fan-and-filter unit can draw sufficient air freely through the outlet filter(s).

Otherwise there is a risk of an air short-circuit and, in the event of exposure to water, of water droplets being drawn into the enclosure.

6 Commissioning

The fan-and-filter unit operates automatically, in other words, the fan will start up once the power has been switched on.

Depending on the model, the following voltage variants are supported:

– 24 V, DC
– 115 V, 1~
– 230 V, 1~
– 400/460 V, 3-phase

7 Installing and changing the filter

The fan-and-filter unit and outlet filter are supplied as standard with a pleated filter for pre-filtering dry coarse dust and lint in the ambient air.

Note:
A chopped-fibre filter is installed as standard on the 3237.xxx and EMC fan-and-filter units.

The filter should be checked at regular intervals in accordance with the level of dust exposure (recommended: at the latest after 2,000 operating hours) and replaced as necessary.

Note:
Use only original Rittal filters which bear the Rittal logo in order to safeguard the designated protection category, air throughout and operating approvals.
The pleated filter supplied for the fan-and-filter unit must be removed and disposed of when a chopped-fibre filter is deployed.

Risk of injury!
Only change the filter mat while the fan rotor is stationary.
Never insert your fingers into the fan rotor. Filter installation or replacement only when de-energised.

To insert or replace the filter, proceed as follows (direction of airflow: drawing from outside and blowing into the enclosure).

7.1 Replacing the pleated filter

- To unlock the louvred grille, press the function logo from above (see fig. 17).
- Fold the louvred grille down to an angle of approx. 90°.
- Remove the soiled pleated filter or the soiled chopped-fibre filter mat.
- Place the new pleated filter in the louvred grille.
  The "Top" logo indicates the insertion direction (see fig. 14).

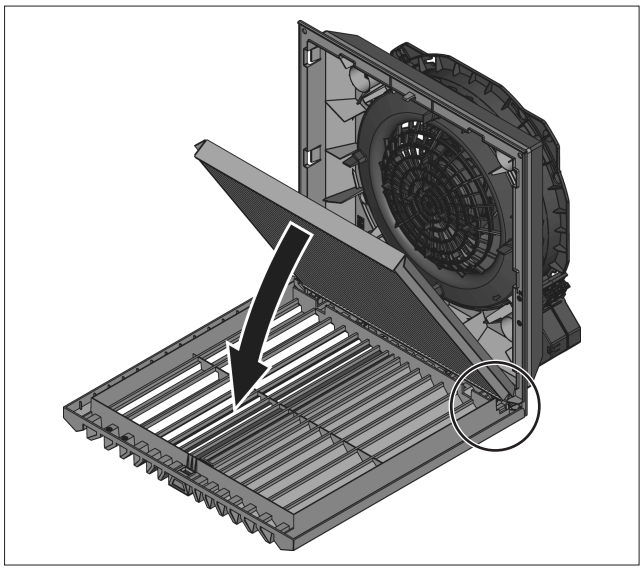


Fig. 14: Installing the IP54 pleated filter

- To seal properly, ensure that the side tabs of the pleated filter are placed over the ribs of the louvred grille.

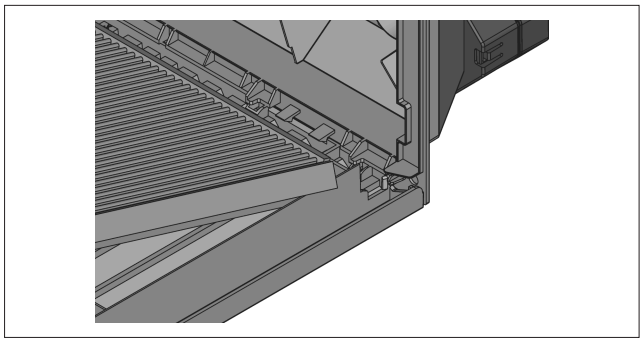


Fig. 15: Positioning of the side tabs

- For IP55 only: place the IP55 absorber mat supplied with the pleated filters on the previously placed pleated filter (see fig. 16). The installation direction of the absorber is not critical.

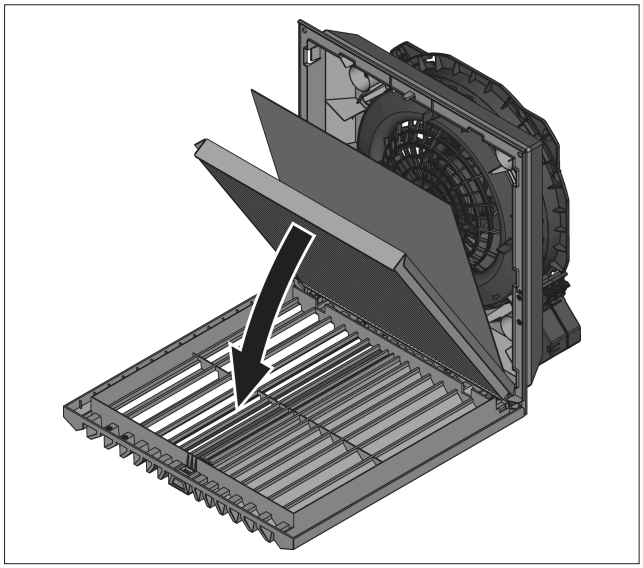


Fig. 16: Installing the IP55 pleated filter

- Now push the louvred grille back onto the enclosure until it snaps audibly into position.

7.2 Replacing the chopped-fibre filter

- To unlock the louvred grille, press the function logo from above (see fig. 17).

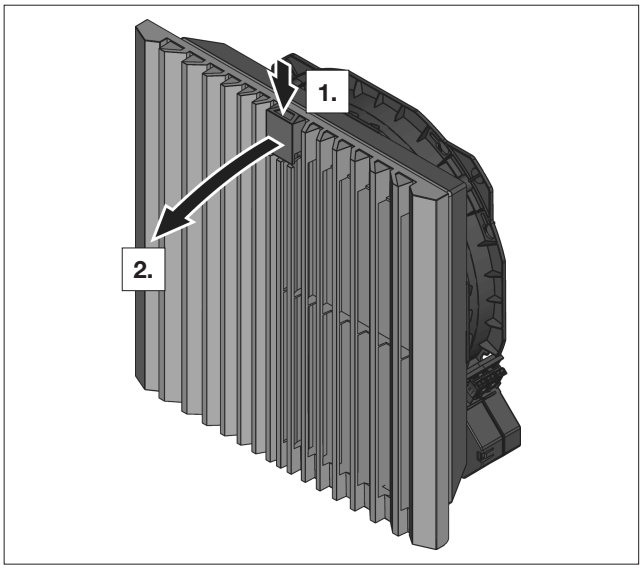


Fig. 17: Unlocking the louvred grille

- Fold the louvred grille down to an angle of approx. 90°.
- Remove the soiled pleated filter or the soiled chopped-fibre filter mat.
- Place a new chopped-fibre filter mat in the filter housing.

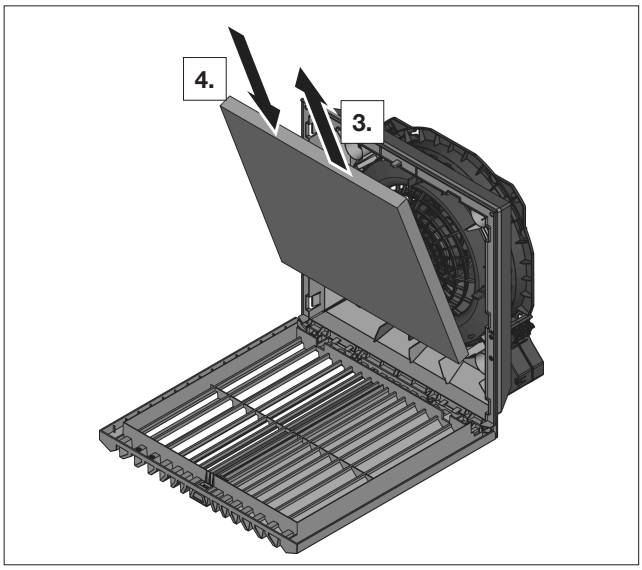


Fig. 18: Removing or inserting a chopped-fibre filter mat

- When installing, ensure that the roughened side with the Rittal logo points inside.

Note:
If it becomes necessary to change the direction of the airflow (see section 5.3 "Changing the direction of airflow", page 9), the installation is reversed accordingly.

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■ Now fold the louvred grille back onto the housing until it latches audibly.

8 Inspection and maintenance

Risk of electric shock!
The unit is live.
Switch off the power supply before opening, and take suitable precautions against it being accidentally switched back on.

The built-in, maintenance-free fan is mounted on a friction bearing (3237.xxx) or ball bearing (3238.xxx to 3244.xxx), and is protected against humidity and dust, and equipped with a temperature monitor.
The life expectancy is at least 40,000 operating hours (L10, 40 °C). The fan-and-filter unit is thus largely maintenance free.
From time to time, the components may need to be cleaned using a vacuum cleaner or compressed air if they become visibly dirty.
Any stubborn, oily stains may be removed using a non-flammable detergent, such as degreaser.

Caution!
Risk of fire!
Never use flammable liquids for cleaning.

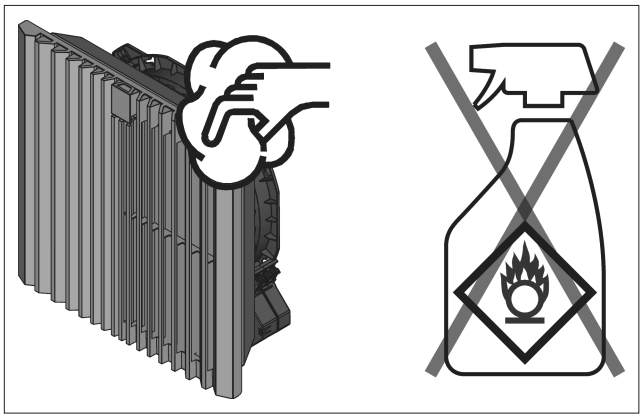


Fig. 19: Cleaning

Sequence of maintenance measures:
– Check the level of dirt.
– Filter soiling?
  Replace the filter.
– Fan membranes soiled?
  Clean.
– Check the noise generation of the fan.
– Compressed air cleaning

9 Storage and disposal

Note:
Risk of damage!
The fan unit must not be stored at temperatures above +70 °C or below -30 °C.

Disposal can be performed at the Rittal plant.
■ Please contact us for advice.

10 Technical specifications

- Observe the mains connection data (voltage and frequency) as per the rating plate.
- Observe the pre-fuse as per the specifications on the rating plate.

	Unit	Model No.		
Fan-and-filter unit RAL 7035		**3237.700**	**3237.710**	**3237.724**
Fan-and-filter unit RAL 9005		**3237.708**	**3237.718**	**–**
EMC fan-and-filter unit RAL 7035		**3237.800**	**3237.810**	**–**
Electrical specifications				
Rated operating voltage	V Hz	230, 1~, 50/60	115, 1~, 50/60	24 (DC)
Rated current max.	A	0.10/0.09	0.14/0.13	0.06
Tolerance rated operating voltage	%	±10		
Power consumption	W	13.0/11.1	12.0/10.0	1.4
Pre-fuse T	A	2		
Motor circuit-breaker	A	–		
Air throughputs (further information can be found in the characteristic curves on the Rittal homepage)				
Unimpeded airflow with chopped-fibre filter	m^3/h	20/25		20
With outlet filter including chopped-fibre filter	m^3/h	15/18		15
Unimpeded airflow with pleated filter	m^3/h	–		
With outlet filter including pleated filter	m^3/h	–		
Other				
Weight (net)	kg	0.4	0.4	0.24
Fan		Axial, shaded pole motor		Axial, DC motor
Fan bearing		Ball bearing		
Noise pressure level	dB (A)	42/47	42/47	42
Operating temperature	°C	-15…+55		
Storage temperature	°C	-30…+70		
Protection category (to IEC 60 529)		IP54 with chopped-fibre filter (standard) IP56 with hose-proof hood		
Protection category (according to NEMA)		NEMA 12 with chopped-fibre filter (standard) NEMA 3, 3R with hose-proof hood		
Outlet filter				
RAL 7035		3237.300		
RAL 9005		3237.308		
EMC RAL 7035		3237.400		

Tab. 3: Technical specifications

Technical modifications reserved.

Technical specifications

EN

	Unit	Model No.		
Fan-and-filter unit RAL 7035		**3238.700**	**3238.710**	**3238.724**
Fan-and-filter unit RAL 9005		**3238.708**	**3238.718**	**–**
EMC fan-and-filter unit RAL 7035		**3238.800**	**3238.810**	**3238.824**
Electrical specifications				
Rated operating voltage	V Hz	230, 1~, 50/60	115, 1~, 50/60	24 (DC)
Rated current max.	A	0.10/0.12	0.20/0.21	0.27
Tolerance rated operating voltage	%	±10		
Power consumption	W	14.7/16.5	15.4/15.8	5.7
Pre-fuse T	A	2		
Motor circuit-breaker	A	–		
Air throughputs (further information can be found in the characteristic curves on the Rittal homepage)				
Unimpeded airflow with chopped-fibre filter	m^3/h	53/64		53
With outlet filter including chopped-fibre filter	m^3/h	40/46		40
Unimpeded airflow with pleated filter	m^3/h	63/72		63
With outlet filter including pleated filter	m^3/h	49/55		49
Other				
Weight (net)	kg	0.68	0.68	0.42
Fan		Axial, shaded pole motor		Axial, DC motor
Fan bearing		Ball bearing		
Noise pressure level	dB (A)	52/54	52/54	52
Operating temperature	°C	-15…+55		
Storage temperature	°C	-30…+70		
Protection category (to IEC 60 529)		IP54 with chopped-fibre filter IP54 with pleated filter (standard) IP55 with pleated filter and absorber mat IP56 with hose-proof hood		
Protection category (according to NEMA)		NEMA 12 with chopped-fibre filter NEMA 3, 3R, 4, 4X with hose-proof hood		
Outlet filter				
RAL 7035		3238.300		
RAL 9005		3238.308		
EMC RAL 7035		3238.400		

Tab. 4: Technical specifications

Technical modifications reserved.

	Unit	Model No.		
Fan-and-filter unit RAL 7035		**3239.700**	**3239.710**	**3239.724**
Fan-and-filter unit RAL 9005		**3239.708**	**3239.718**	**–**
EMC fan-and-filter unit RAL 7035		**3239.800**	**3239.810**	**3239.824**
Electrical specifications				
Rated operating voltage	V Hz	230, 1~, 50/60	115, 1~, 50/60	24 (DC)
Rated current max.	A	0.10/0.12	0.20/0.21	0.27
Tolerance rated operating voltage	%	±10		
Power consumption	W	14.7/16.5	15.4/15.8	5.7
Pre-fuse T	A	2		
Motor circuit-breaker	A	–		
Air throughputs (further information can be found in the characteristic curves on the Rittal homepage)				
Unimpeded airflow with chopped-fibre filter	m^3/h	100/115		100
With outlet filter including chopped-fibre filter	m^3/h	75/86		75
Unimpeded airflow with pleated filter	m^3/h	110/125		110
With outlet filter including pleated filter	m^3/h	92/104		92
Other				
Weight (net)	kg	0.92	0.92	0.66
Fan		Axial, shaded pole motor		Axial, DC motor
Fan bearing		Ball bearing		
Noise pressure level	dB (A)	51/54	51/54	51
Operating temperature	°C	-15…+55		
Storage temperature	°C	-30…+70		
Protection category (to IEC 60 529)		IP54 with chopped-fibre filter IP54 with pleated filter (standard) IP55 with pleated filter and absorber mat IP56 with hose-proof hood		
Protection category (according to NEMA)		NEMA 12 with chopped-fibre filter or pleated filter (standard) NEMA 3, 3R, 4, 4X with hose-proof hood		
Outlet filter				
RAL 7035		3239.300		
RAL 9005		3239.308		
EMC RAL 7035		3239.400		

Tab. 5: Technical specifications

Technical modifications reserved.

Technical specifications

EN

	Unit	Model No.		
Fan-and-filter unit RAL 7035		**3240.700**	**3240.710**	**3240.724**
Fan-and-filter unit RAL 9005		**3240.708**	**3240.718**	**–**
EMC fan-and-filter unit RAL 7035		**3240.800**	**3240.810**	**–**
Electrical specifications				
Rated operating voltage	V Hz	230, 1~, 50/60	115, 1~, 50/60	24 (DC)
Rated current max.	A	0.20/0.21	0.41/0.42	0.42
Tolerance rated operating voltage	%	±10		
Power consumption	W	33.1/37.3	35.5/38.2	10.1
Pre-fuse T	A	2	4	2
Motor circuit-breaker	A	–		
Air throughputs (further information can be found in the characteristic curves on the Rittal homepage)				
Unimpeded airflow with chopped-fibre filter	m^3/h	175/157		175
With outlet filter including chopped-fibre filter	m^3/h	130/112		130
Unimpeded airflow with pleated filter	m^3/h	218/191		218
With outlet filter including pleated filter	m^3/h	191/161		191
Other				
Weight (net)	kg	1.82	1.82	1.44
Fan		Diagonal, shaded pole motor		Diagonal, DC motor
Fan bearing		Ball bearing		
Noise pressure level	dB (A)	48/45	48/45	48
Operating temperature	°C	-30…+55		
Storage temperature	°C	-30…+70		
Protection category (to IEC 60 529)		IP54 with chopped-fibre filter IP54 with pleated filter (standard) IP55 with pleated filter and absorber mat IP56 with hose-proof hood		
Protection category (according to NEMA)		NEMA 12 with chopped-fibre filter or pleated filter (standard) NEMA 3, 3R, 4, 4X with hose-proof hood		
Outlet filter				
RAL 7035		3240.300		
RAL 9005		3240.308		
EMC RAL 7035		3240.400		

Tab. 6: Technical specifications Technical modifications reserved.

	Unit	Model No.		
Fan-and-filter unit RAL 7035		**3241.700**	**3241.710**	**3241.724**
Fan-and-filter unit RAL 9005		**3241.708**	**3241.718**	**–**
EMC fan-and-filter unit RAL 7035		**3241.800**	**3241.810**	**–**
Electrical specifications				
Rated operating voltage	V Hz	230, 1~, 50/60	115, 1~, 50/60	24 (DC)
Rated current max.	A	0.27/0.32	0.54/0.60	0.8
Tolerance rated operating voltage	%	±10		
Power consumption	W	43.2/54.5	43.4/52.2	19.1
Pre-fuse T	A	4	4	2
Motor circuit-breaker	A	–		
Air throughputs (further information can be found in the characteristic curves on the Rittal homepage)				
Unimpeded airflow with chopped-fibre filter	m^3/h	225/245		225
With outlet filter including chopped-fibre filter	m^3/h	173/187		173
Unimpeded airflow with pleated filter	m^3/h	272/280		272
With outlet filter including pleated filter	m^3/h	242/246		242
Other				
Weight (net)	kg	1.8	1.8	1.6
Fan		Diagonal, shaded pole motor		Diagonal, DC motor
Fan bearing		Ball bearing		
Noise pressure level	dB (A)	53/54	53/54	53
Operating temperature	°C	-30…+55		
Storage temperature	°C	-30…+70		
Protection category (to IEC 60 529)		IP54 with chopped-fibre filter IP54 with pleated filter (standard) IP55 with pleated filter and absorber mat IP56 with hose-proof hood		
Protection category (according to NEMA)		NEMA 12 with chopped-fibre filter or pleated filter (standard) NEMA 3, 3R, 4, 4X with hose-proof hood		
Outlet filter				
RAL 7035		3240.300		
RAL 9005		3240.308		
EMC RAL 7035		3240.400		

Tab. 7: Technical specifications

Technical modifications reserved.

Technical specifications

EN

	Unit	Model No.	
Fan-and-filter unit RAL 7035		**3243.700**	**3243.710**
Fan-and-filter unit RAL 9005		**3243.708**	**3243.718**
EMC fan-and-filter unit RAL 7035		**3243.800**	**3243.810**
Electrical specifications			
Rated operating voltage	V Hz	230, 1~, 50/60	115, 1~, 50/60
Rated current max.	A	0.39/0.47	0.81/0.90
Tolerance rated operating voltage	%	±10	
Power consumption	W	77.7/106.4	78.7/102.8
Pre-fuse T	A	4	6
Motor circuit-breaker	A	–	
Air throughputs (further information can be found in the characteristic curves on the Rittal homepage)			
Unimpeded airflow with chopped-fibre filter	m^3/h	540/590	
With outlet filter including chopped-fibre filter	m^3/h	444/498	
Unimpeded airflow with pleated filter	m^3/h	625/716	
With outlet filter including pleated filter	m^3/h	565/645	
Other			
Weight (net)	kg	3.12	
Fan		Diagonal, capacitor motor	
Fan bearing		Ball bearing	
Noise pressure level	dB (A)	62/65	62/65
Operating temperature	°C	-30…+55	
Storage temperature	°C	-30…+70	
Protection category (to IEC 60 529)		IP54 with chopped-fibre filter IP54 with pleated filter (standard) IP55 with pleated filter and absorber mat IP56 with hose-proof hood	
Protection category (according to NEMA)		NEMA 12 with chopped-fibre filter or pleated filter (standard) NEMA 3, 3R, 4, 4X with hose-proof hood	
Outlet filter			
RAL 7035		3243.300	
RAL 9005		3243.308	
EMC RAL 7035		3243.400	

Tab. 8: Technical specifications

Technical modifications reserved.

	Unit	Model No.			
Fan-and-filter unit RAL 7035		**3244.700**	**3244.710**	**3244.740**	
Fan-and-filter unit RAL 9005		**3244.708**	**3244.718**	**–**	
EMC fan-and-filter unit RAL 7035		**3244.800**	**3244.810**	**–**	
Electrical specifications					
Rated operating voltage	V Hz	230, 1~, 50/60	115, 1~, 50/60	400, 3~ 50/60	460, 3~ 60
Rated current max.	A	0.51/0.68	1.06/1.47	0.22/0.28	
Tolerance rated operating voltage	%	±10			
Power consumption	W	114.4/153.5	120.7/166.1	116.9/165.6	
Pre-fuse T	A	4	6	–	
Motor circuit-breaker	A	–		0.2…0.4	
Air throughputs (further information can be found in the characteristic curves on the Rittal homepage)					
Unimpeded airflow with chopped-fibre filter	m^3/h	700/770			
With outlet filter including chopped-fibre filter	m^3/h	537/587			
Unimpeded airflow with pleated filter	m^3/h	867/910			
With outlet filter including pleated filter	m^3/h	720/745			
Other					
Weight (net)	kg	3.84	3.84	3.64	
Fan		Diagonal, capacitor motor		Diagonal, three-phase motor	
Fan bearing		Ball bearing			
Noise pressure level	dB (A)	64/66	64/66	64/66	
Operating temperature	°C	-30…+55			
Storage temperature	°C	-30…+70			
Protection category (to IEC 60 529)		IP54 with chopped-fibre filter IP54 with pleated filter (standard) IP55 with pleated filter and absorber mat IP56 with hose-proof hood			
Protection category (according to NEMA)		NEMA 12 with chopped-fibre filter or pleated filter (standard) NEMA 3, 3R, 4, 4X with hose-proof hood			
Outlet filter					
RAL 7035		3243.300			
RAL 9005		3243.308			
EMC RAL 7035		3243.400			

Tab. 9: Technical specifications

Technical modifications reserved.

EN

11 Cut-out/drilling dimensions

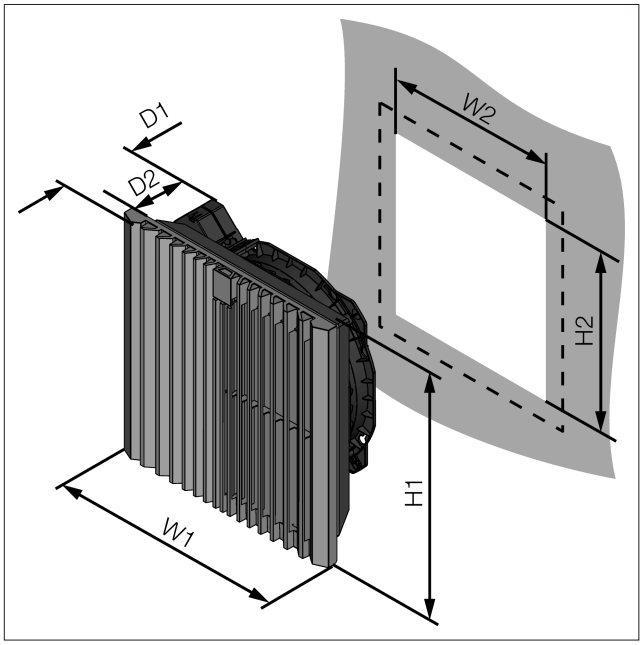


Fig. 20: Cut-out dimensions

Model No.	W1 x H1 mm	D1 mm	W2 x H2 mm	D2 mm
3237.xxx	116.5 x 116.5	64.5	92 x 92	46
3238.xxx	148.5 x 148.5	82.5	124 x 124	64
3239.xxx	204 x 204	105	177 x 177	84
3240.xxx	255 x 255	129	224 x 224	108
3241.xxx	255 x 255	129	224 x 224	108
3243.xxx	323 x 323	144.5	292 x 292	124
3244.xxx	323 x 323	156	292 x 292	136

Tab. 10: Cut-out dimensions

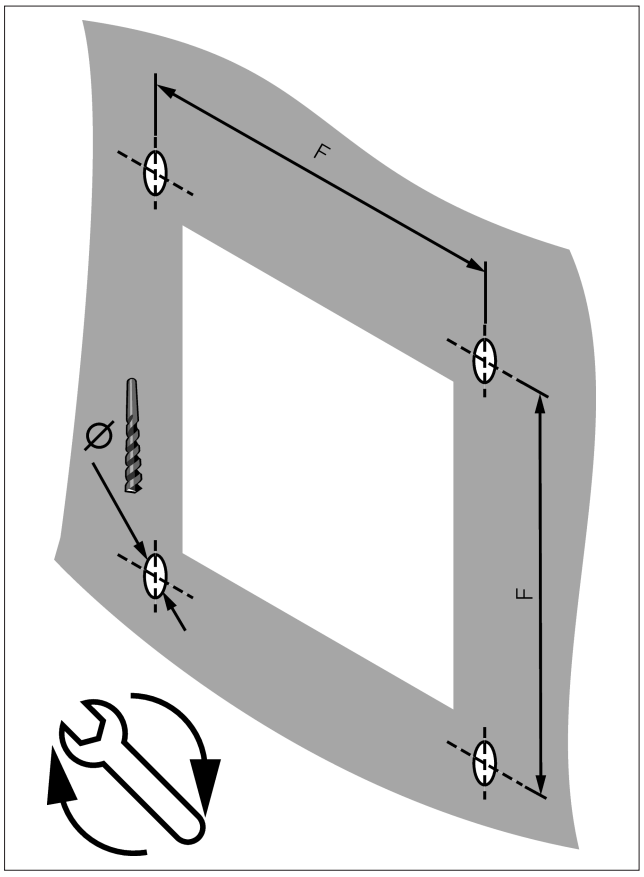


Fig. 21: Drilling pattern

Note:
The cut-out must be increased by 1 mm each side for wall thickness above 2.5 mm (see accompanying drilling template).

Model No.	Ø mm	F mm	Nm
3237.xxx	3.5	100.5	1
3238.xxx	3.5	132.5	1
3239.xxx	4.5	185	1
3240.xxx	4.5	234	2
3241.xxx	4.5	234	2
3243.xxx	4.5	302	3
3244.xxx	4.5	302	3
3245.xxx	4.5	302	3

Tab. 11: Drilling dimensions

12 EMC fan/outlet filter

To achieve EMC protection, the EMC fans and EMC outlet filters should be snapped into the mounting cut-out and screw-fastened using the screws supplied. Next, the four contact foils should be stuck on allround between the fan-and-filter unit and the inside of the enclosure as shown in the following illustration.

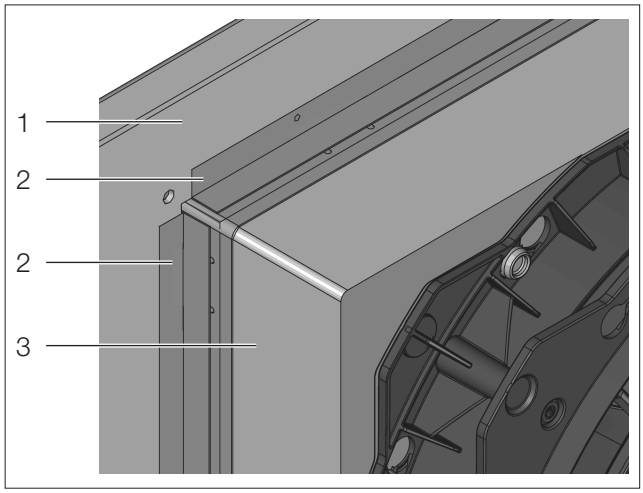


Fig. 22: EMC contact foils

Key
1 Enclosure interior
2 EMC contact foils
3 Fan housing

Note:
EMC protection can only be guaranteed when using original Rittal EMC filter media (model nos. 3237.067, 3238.066, 3239.066, 3240.066, 3243.066).

EN

13 Accessories

EMC filter mat

To fit Model No.	Filter class in accordance with DIN EN 779	In accordance with ISO 16890	Packs of	Model No.
3237.xxx	G2	ISO coarse 50%	5 pc(s).	3237.067
3238.xxx	G2	ISO coarse 50%	5 pc(s).	3238.066
3239.xxx	G3	ISO coarse 50%	5 pc(s).	3239.066
3240.xxx/3241.xxx	G3	ISO coarse 50%	5 pc(s).	3240.066
3243.xxx/3244.xxx	G3	ISO coarse 50%	5 pc(s).	3243.066

Tab. 12: EMC filter mat

Chopped-fibre filter mat for fan-and-filter unit

To fit Model No.	Filter class in accordance with DIN EN 779	In accordance with ISO 16890	Packs of	Model No.
3237.xxx	G2	ISO coarse 50%	5 pc(s).	3237.054
3238.xxx	G2	ISO coarse 50%	5 pc(s).	3322.700
3239.xxx	G3	ISO coarse 50%	5 pc(s).	3171.100
3240.xxx/3241.xxx	G3	ISO coarse 50%	5 pc(s).	3172.100
3243.xxx/3244.xxx	G3	ISO coarse 50%	5 pc(s).	3173.100

Tab. 13: Chopped-fibre filter mat for fan-and-filter unit

IP54 pleated filter for fan-and-filter unit

To fit Model No.	Filter class in accordance with DIN EN 779	In accordance with ISO 16890	Packs of	Model No.
3238.xxx	G4	ISO coarse 70%	5 pc(s).	3322.720
3239.xxx	G4	ISO coarse 70%	5 pc(s).	3171.120
3240.xxx/3241.xxx	G4	ISO coarse 70%	5 pc(s).	3172.120
3243.xxx/3244.xxx	G4	ISO coarse 70%	5 pc(s).	3173.120

Tab. 14: IP54 pleated filter for fan-and-filter unit

IP55 pleated filter for fan-and-filter unit

To fit Model No.	Filter class in accordance with DIN EN 779	In accordance with ISO 16890	Packs of	Model No.
3238.xxx	G4	ISO ePM10 55%	5 pc(s).	3238.025
3239.xxx	G4	ISO ePM10 55%	5 pc(s).	3181.125
3240.xxx/3241.xxx	G4	ISO ePM10 55%	5 pc(s).	3182.125
3243.xxx/3244.xxx	G4	ISO ePM10 55%	5 pc(s).	3183.125

Tab. 15: IP55 pleated filter for fan-and-filter unit

Blanking cover for fan-and-filter unit / outlet filter

To fit Model No.	IP protection category in accordance with IEC 60529	Packs of	Model No.
3237.xxx	IP54	2 pc(s).	3237.021
3238.xxx	IP54	2 pc(s).	3238.020
3239.xxx	IP54	2 pc(s).	3239.020
3240.xxx/3241.xxx	IP54	2 pc(s).	3240.020
3243.xxx/3244.xxx	IP54	2 pc(s).	3243.020

Tab. 16: Blanking cover for fan-and-filter unit / outlet filter

Hose-proof hoods

To fit Model No.	W x H x D mm	Protection category	Packs of	Model No.
3237.xxx	150 x 230 x 40	NEMA 1, NEMA 12, NEMA 3, NEMA 3R	1 pc(s).	3237.080
3238.xxx	176 x 245 x 55	NEMA 1, NEMA 12, NEMA 3, NEMA 3R, NEMA 4, NEMA 4X	1 pc(s).	3238.080
3239.xxx	233 x 330 x 55	NEMA 1, NEMA 12, NEMA 3, NEMA 3R, NEMA 4, NEMA 4X	1 pc(s).	3239.080
3240.xxx/3241.xxx	282 x 390 x 85	NEMA 1, NEMA 12, NEMA 3, NEMA 3R, NEMA 4, NEMA 4X	1 pc(s).	3240.080
3243.xxx/3244.xxx	350 x 480 x 110	NEMA 1, NEMA 12, NEMA 3, NEMA 3R, NEMA 4, NEMA 4X	1 pc(s).	3243.080

Tab. 17: Hose-proof hoods

Safety clip

To fit Model No.	Packs of	Model No.
3237.xxx/3238.xxx	1 pc(s).	3201.940
3239.xxx/3240.xxx/3241.xxx/3243.xxx/3244.xxx	1 pc(s).	3201.941

Tab. 18: Safety clip

EN

14 Connection diagrams

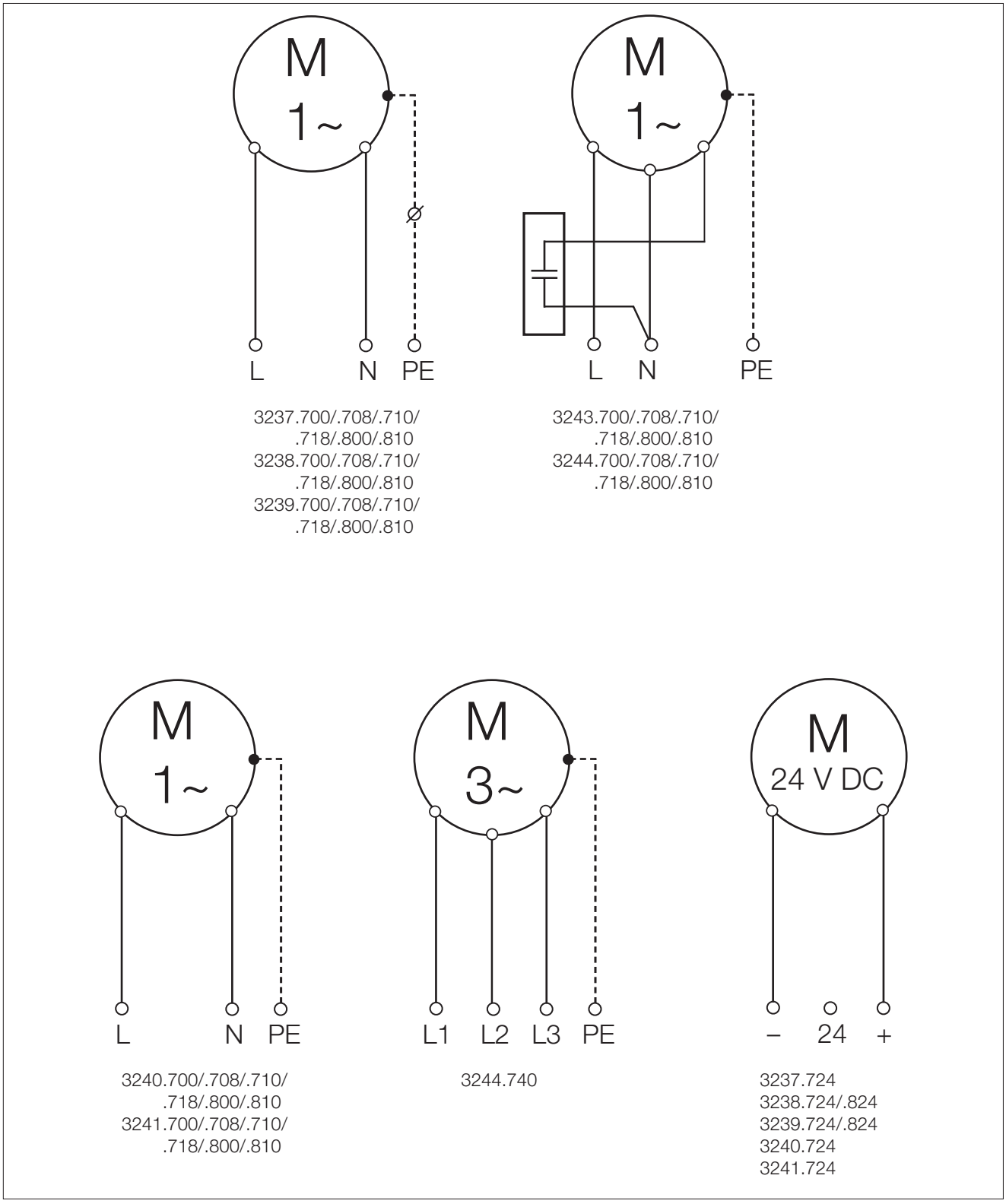


Fig. 23: Connection diagrams

15 Declaration of conformity

EN

Vereinfachte EU-Konformitätserklärung / Simplified EU Declaration of Conformity

Wir, / We,

Rittal GmbH & Co. KG • Auf dem Stützelberg • 35745 Herborn

Erklären, dass die Produkte / declare that the products

Serienbezeichnung:
Serial name:

Filterlüfter
Fan-and-Filter Unit

Handelsbezeichnung:
Commercial part no.:

SK 3238.700	SK 3238.708	SK 3238.710	SK 3238.718	SK 3238.800	SK 3238.810
SK 3239.700	SK 3239.708	SK 3239.710	SK 3239.718	SK 3239.800	SK 3239.810
SK 3240.700	SK 3240.708	SK 3240.710	SK 3240.718	SK 3240.800	SK 3240.810
SK 3240.900	SK 3241.700	SK 3241.708	SK 3241.710	SK 3241.718	SK 3241.800
SK 3241.810	SK 3241.900	SK 3243.700	SK 3243.708	SK 3243.710	SK 3243.718
SK 3243.800	SK 3243.810	SK 3243.900	SK 3244.700	SK 3244.708	SK 3244.710
SK 3244.718	SK 3244.740	SK 3244.800	SK 3244.810	SK 3244.900	SK 3245.800
SK 3245.810	SK 3245.900	SK 3245.908	SK 3245.910	SK 3245.918	

folgender Richtlinie entsprechen: / conform to the following Directive

2006/42/EC Machinery Directive

Weitere Richtlinien: / Additional Directives:

2011/65/EU Hazardous Substances Directive (RoHS)
2014/30/EU EMC Directive

Verantwortlich für Dokumentation
Responsible for documentation

Rittal GmbH & Co. KG
Auf dem Stützelberg
35745 Herborn

ENCLOSURES · POWER DISTRIBUTION · CLIMATE CONTROL · IT INFRASTRUCTURE · SOFTWARE & SERVICES

FRIEDHELM LOH GROUP

2023 - 000097 - 01

Seite 1 von 1

Notes

Notes

Rittal – The System.

Faster – better – everywhere.

- Enclosures
- Power Distribution
- Climate Control
- IT Infrastructure
- Software & Services

You can find the contact details of all
Rittal companies throughout the world here.

www.rittal.com/contact

12.2023/D-0000-00003577-00-EN

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