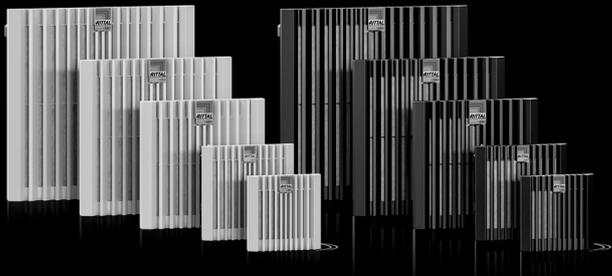


# Rittal – The System.

Faster – better – everywhere.

## Blue e+ filter fan



### Filter fan

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

ENCLOSURES

POWER DISTRIBUTION

CLIMATE CONTROL

IT INFRASTRUCTURE

SOFTWARE & SERVICES

FRIEDHELM LOH GROUP



# Preface

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## **Preface**

Dear Customer!

Thank you for choosing a filter fan from Rittal.

Yours

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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 filter fan.
- trained specialists who are familiar with operation of the filter fan.

### 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 filter fan.

- Do not make any changes to the filter fan other than those described in these and other applicable instructions.
- Carefully debur the mounting cut-out before inserting the filter fan.
- The filter fan 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 filter fan
- 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 filter fan 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 filter fan.
- Use only original spare parts and accessories.

## 3 Product description

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

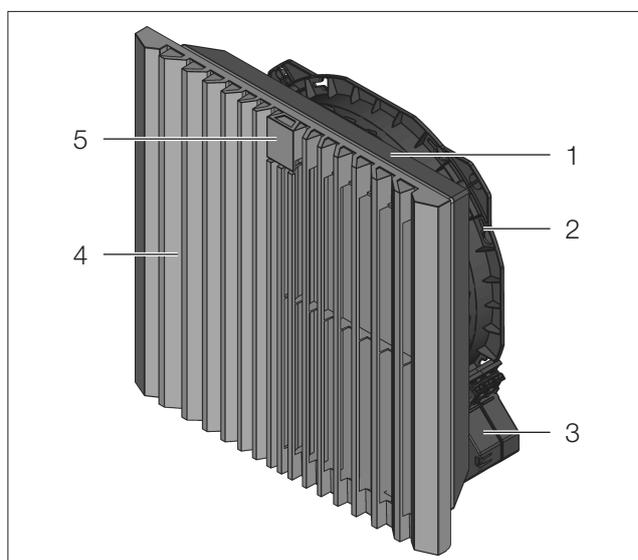


Fig. 1: Product description

## 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 filter fan 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 filter fan 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 filter fans 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 filter fan 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 filter fan / 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 filter fans (see section 13 "Accessories").

### 3.2 Intended use

Rittal filter fans 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	Filter fan
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 filter fan, must be carefully selected so as to ensure good ventilation.
- The site must be free from excessive dirt and moisture.
- Filter fans 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.
- The filter fan and outlet filter must always be mounted on an enclosure in order to ensure air exchange.

# Assembly and connections

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**Note:**  
The outlet filter should be at least the same size as the filter fan.

- The enclosure must be sealed on all sides (IP 54). 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 filter fans 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/3241.xxx	46 mm
3243.xxx/3244.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 filter fan's mounting cut-out.

## 4.3 Fitting the filter fan or outlet filter

The filter fan 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 filter fan 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. 25 and fig. 26, page 23.

- 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 filter fan

- 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 filter fan must be screw-fastened in addition (see section 11 "Cut-out/drilling dimensions").

To drill the bottom holes for screw-fastening, after snapping into the prefabricated mounting cut-out, please remove the louvred grille as follows (see fig. 2 to fig. 7):

- Flip the louvred grille away from the enclosure at an angle of 90°.  
Take care not to move the louvred grille beyond 90°, as this could damage the filter fan.

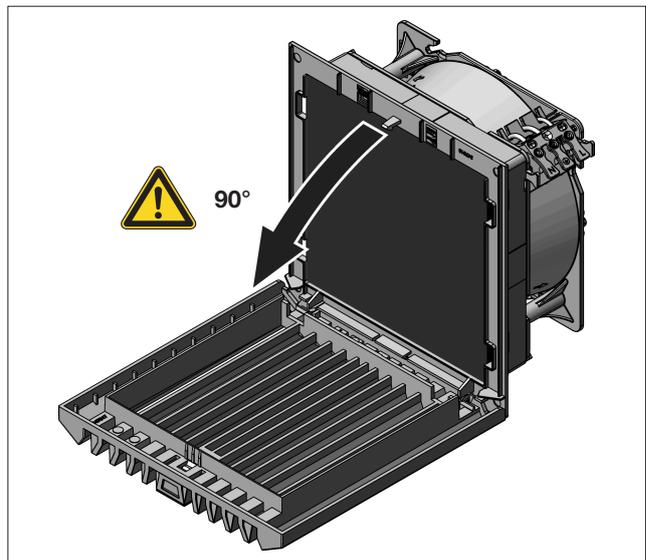


Fig. 2: Flip down the louvred grille (3237.xxx, 3238.xxx)

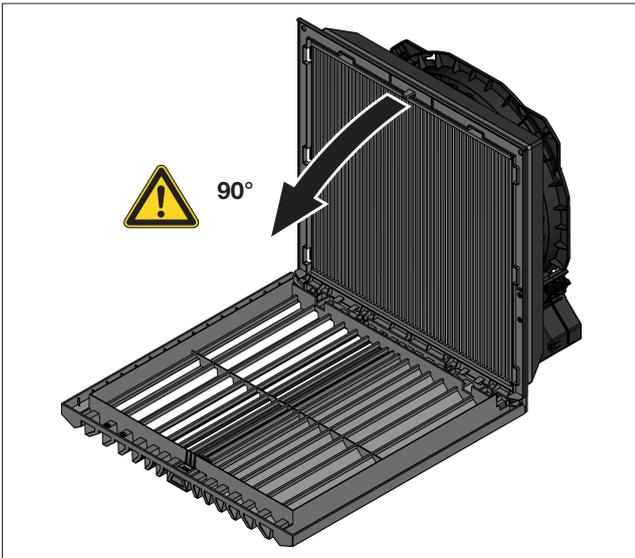


Fig. 3: Flip down the louvred grille (3239.xxx to 3244.xxx)

- In this position, pull the l/h side of the hinge out of its holder. You may hear an audible click from the hinge's snap connection.



Fig. 5: Release the l/h side of the louvred grille hinge (3239.xxx to 3244.xxx)

- Next, pull the r/h side of the hinge out of its holder. You may hear an audible click from the hinge's snap connection.

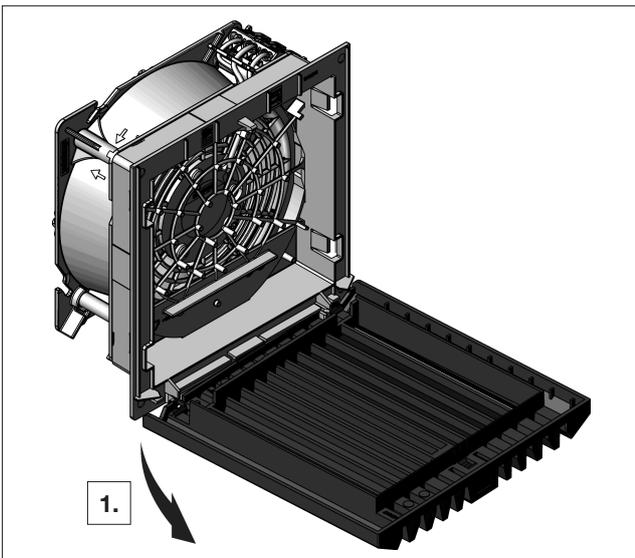


Fig. 4: Release the l/h side of the louvred grille hinge (3237.xxx, 3238.xxx)

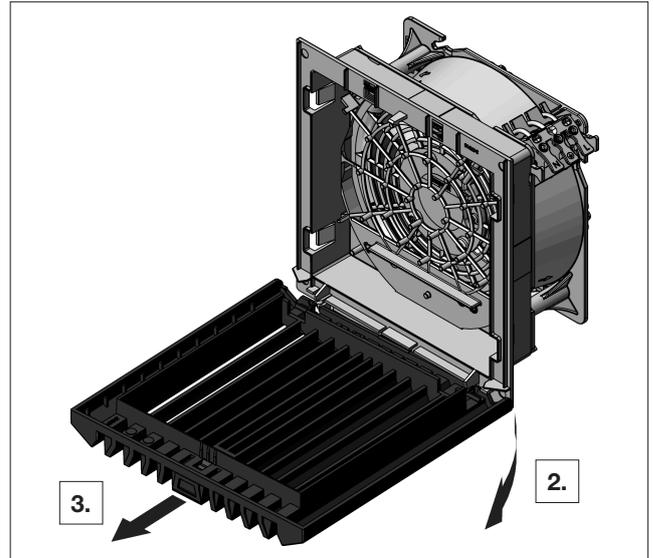


Fig. 6: Release the r/h side of the hinge and remove the louvred grille (3237.xxx, 3238.xxx)

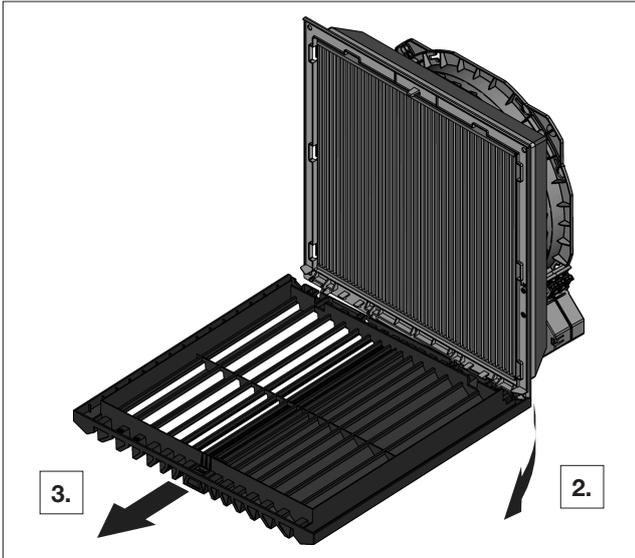


Fig. 7: Release the r/h side of the hinge and remove the louvred grille (3239.xxx to 3244.xxx)

- Remove the louvred grille from the enclosure by pulling forwards.
- Drill the required holes (see section 11 "Cut-out/drilling dimensions").
- Next, screw-fasten the fan to the enclosure panel.
  - 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 filter fan 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:
    - IP 55 by using a pleated filter and absorber mat.
    - IP 56 by using a hose-proof hood.

### 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.

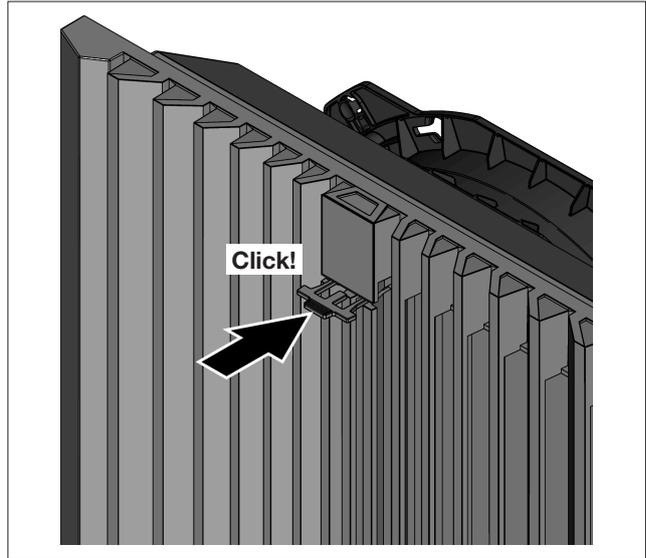


Fig. 8: Inserting the safety clip

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

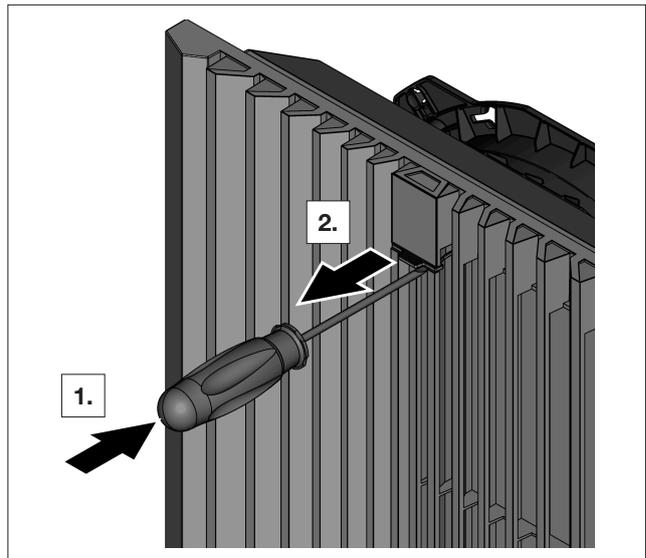


Fig. 9: Removing the safety clip

### 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  $\pm 10\%$ .

#### 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 ( $2 \times 0.75 - 2.5 \text{ mm}^2$  multi-wire,  $2 \times 1.5 - 2.5 \text{ mm}^2$  fine-wire soldered).



**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).

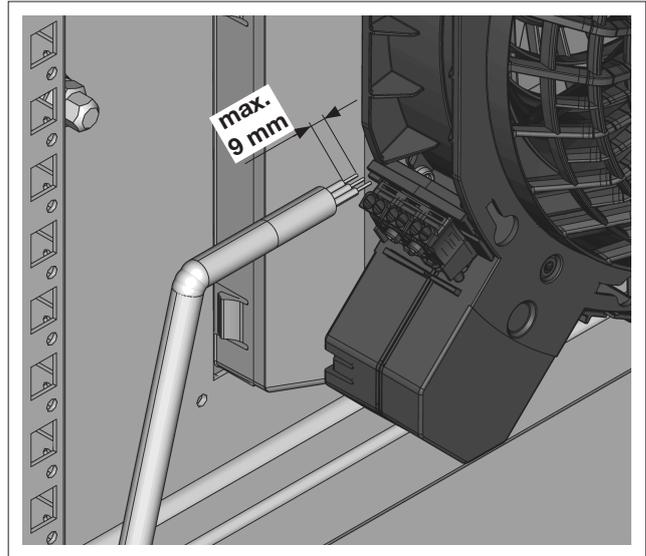


Fig. 10: Maximum permissible insulation stripping

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

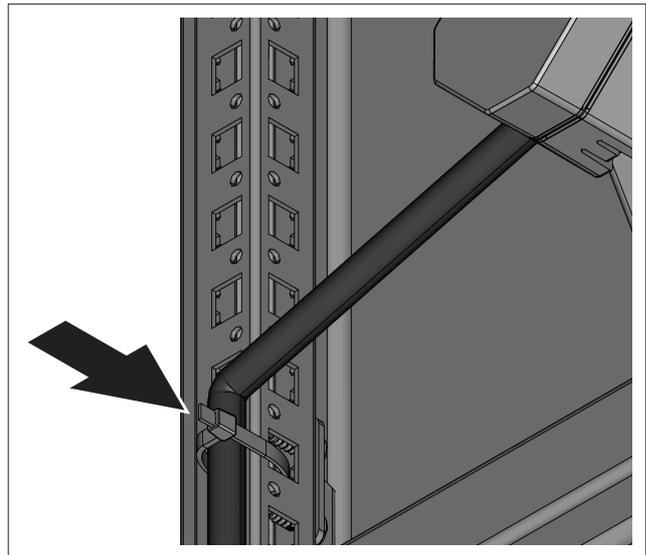


Fig. 11: Cable fastening with cable ties on the enclosure frame (example)



Note:  
Filter fan 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  $90^\circ$  and snapped into position.

#### Units 3238.xxx to 3239.xxx

- To unlock the bayonet connection, pull the bracket (see fig. 12) of the bayonet catch at the rear of the fan. This is located on the corner of the connection terminal.

# Carrying out the electrical connection

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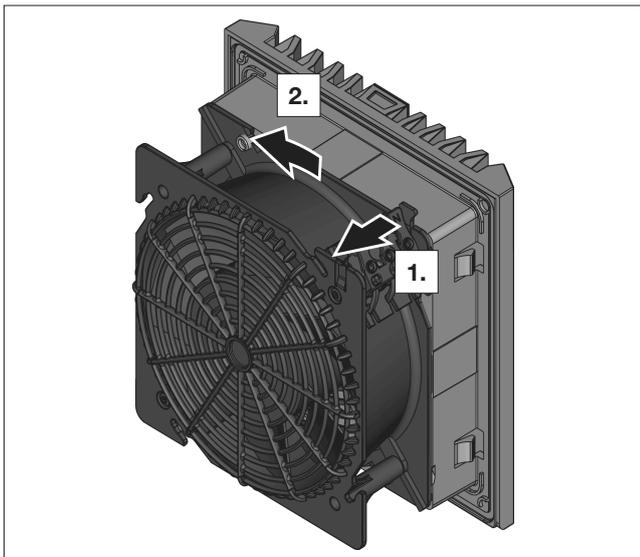


Fig. 12: Release the bayonet connection

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

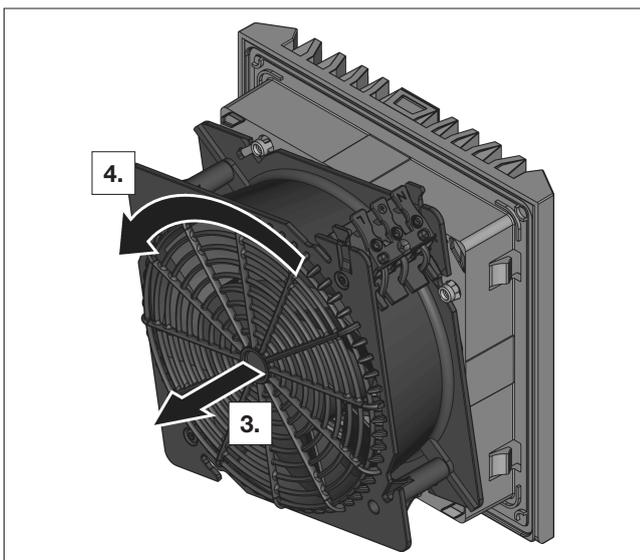


Fig. 13: Turning the fan housing

- Then turn the fan housing by 90°, 180° or 270° so that the electrical connection is in the desired position (see fig. 13).
- Place the fan housing back on the filter box (see fig. 14).

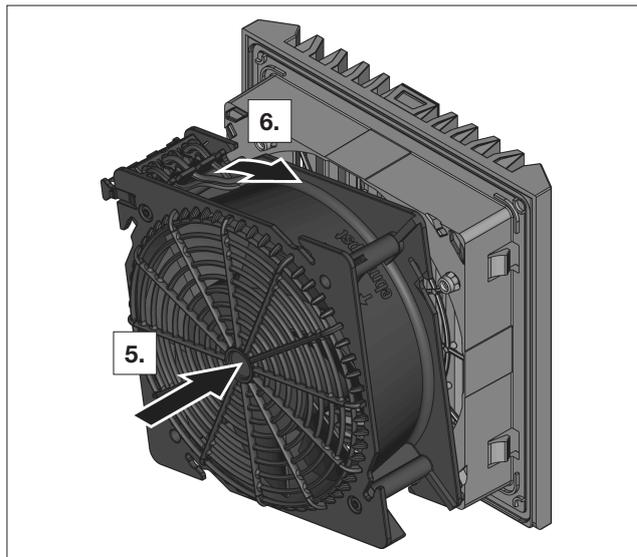


Fig. 14: Locking the bayonet connection

- 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. 15). This is located on the opposite corner from the connection terminal.

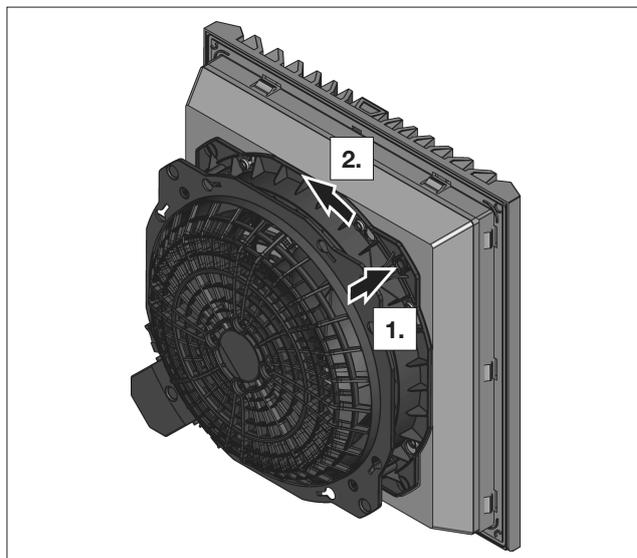


Fig. 15: Release the bayonet connection

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

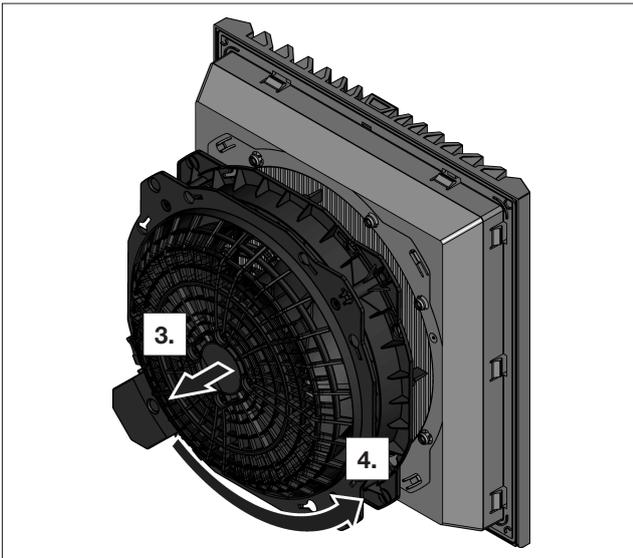


Fig. 16: Turning the fan housing

- Then turn the fan housing by 90°, 180° or 270° so that the electrical connection is in the desired position (see fig. 16).
- Place the fan housing back on the filter box (see fig. 17).

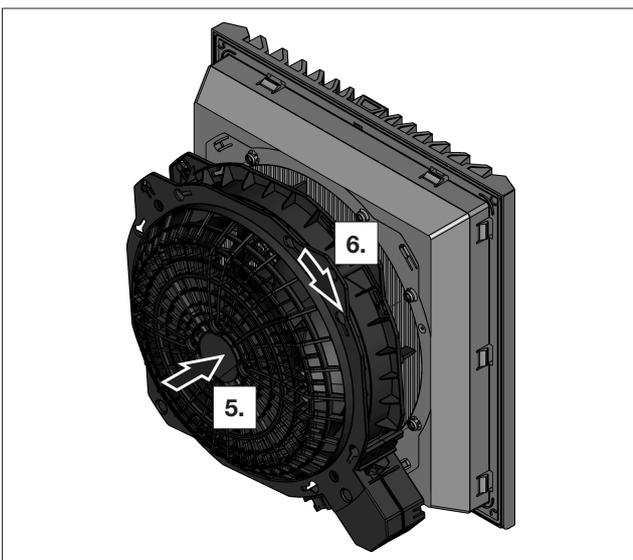


Fig. 17: Locking the bayonet connection

- 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 9.

- Turn the fan housing by 180°.

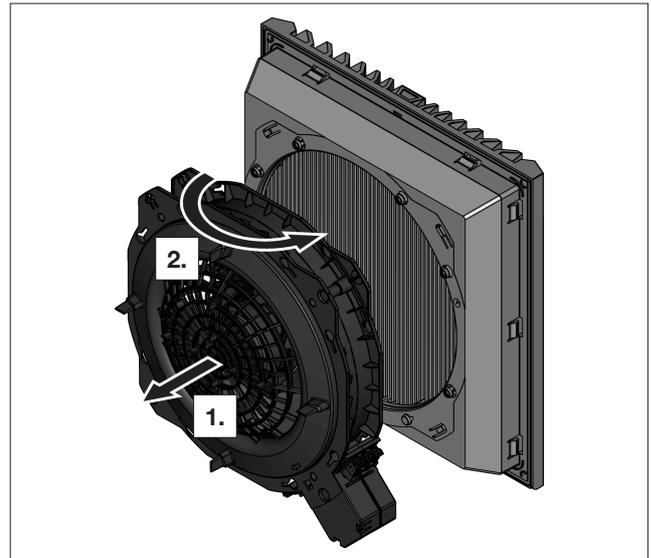


Fig. 18: Changing the direction of airflow

- 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 9.
- Please also observe the instructions outlined under section 4.2.1 "General", page 5.



**Note:**

If the direction of airflow is changed, the filter fan blows air out of the enclosure.

- In this case, ensure that the filter fan 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 filter fan 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 filter fan 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 filter fans.

# Installing and changing the filter

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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 throughput and operating approvals.

The pleated filter supplied for the filter fan 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. 22).
- 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. 19).

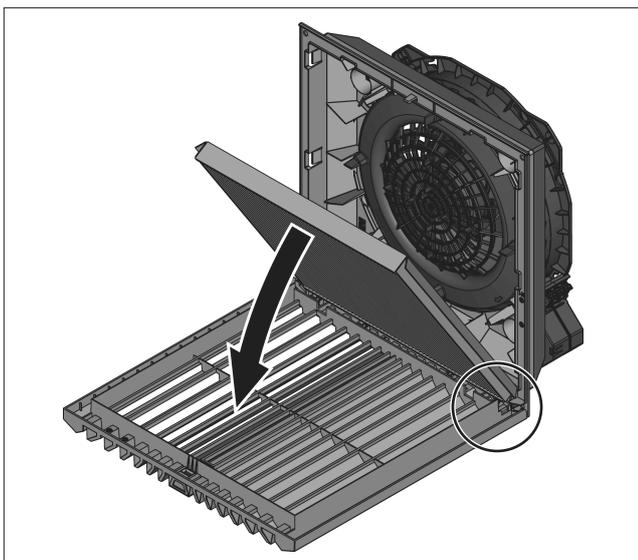


Fig. 19: Installing the IP 54 pleated filter

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

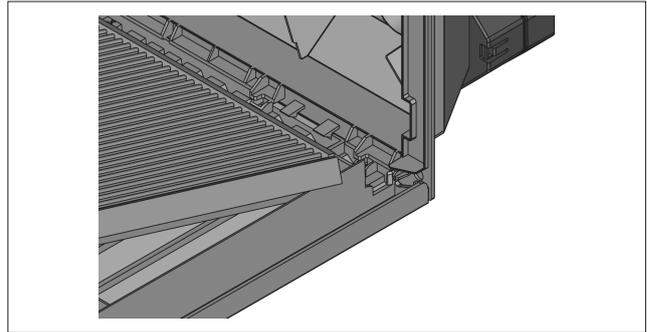


Fig. 20: Positioning of the side tabs

- For IP 55 only: Place the IP 55 absorber mat supplied with the pleated filters on the previously placed pleated filter (see fig. 21). The installation direction of the absorber is not critical.

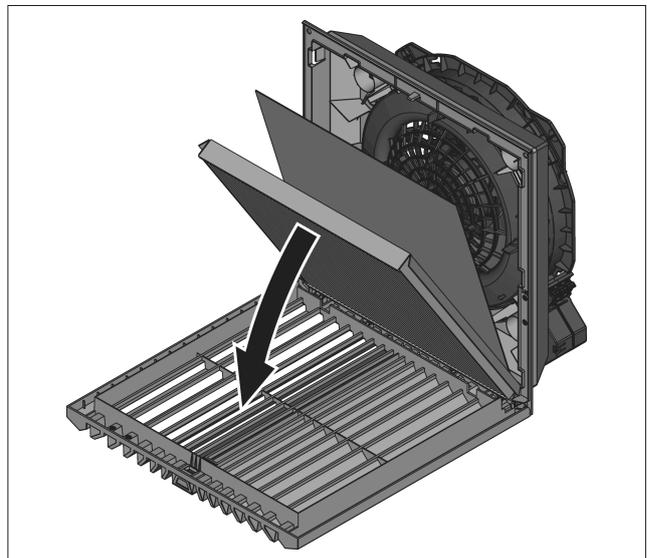


Fig. 21: Installing the IP 55 pleated filter

- 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. 22).

## 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.

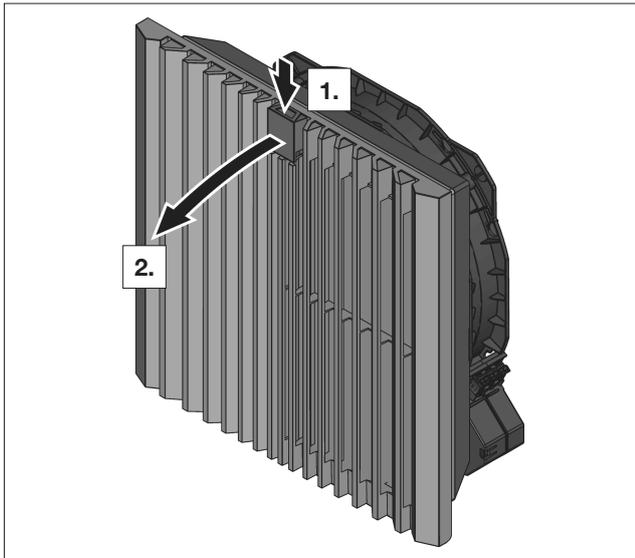


Fig. 22: Unlocking the louvred grille

- 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.

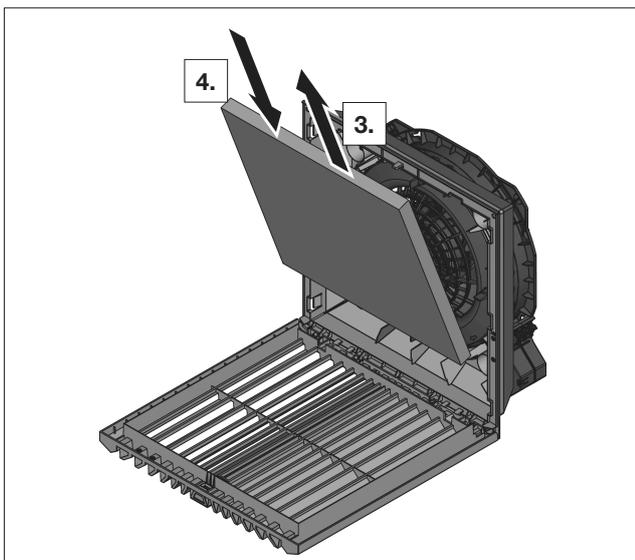


Fig. 23: Removing or inserting a chopped-fibre filter mat

- 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 11), the installation is reversed accordingly.

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

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 filter fan 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.

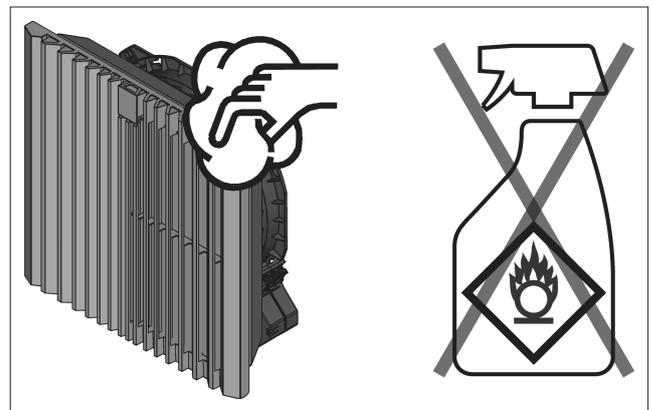


Fig. 24: Cleaning

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

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Note:

Risk of damage!

The filter fan must not be stored at temperatures above +70 °C or below -30 °C.

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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.		
<b>Filter fan RAL 7035</b>		<b>3237.700</b>	<b>3237.710</b>	<b>3237.724</b>
<b>Filter fan RAL 9005</b>		<b>3237.708</b>	<b>3237.718</b>	-
<b>EMC filter fan RAL 7035</b>		<b>3237.800</b>	<b>3237.810</b>	-
<b>Electrical specifications</b>				
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	-		
<b>Air throughputs (further information can be found in the characteristic curves on the Rittal homepage)</b>				
Unimpeded airflow with chopped-fibre filter	m <sup>3</sup> /h	20/25		20
With outlet filter including chopped-fibre filter	m <sup>3</sup> /h	15/18		15
Unimpeded airflow with pleated filter	m <sup>3</sup> /h	-		
With outlet filter including pleated filter	m <sup>3</sup> /h	-		
<b>Other</b>				
Weight (net)	kg	0.4	0.4	0.24
Fan		Axial, shaded pole motor		Axial, DC motor
Fan bearing		Friction 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)		IP 54 with chopped-fibre filter (standard) IP 56 with hose-proof hood		
Protection category (according to NEMA)		NEMA 12 with chopped-fibre filter (standard) NEMA 3, 3R with hose-proof hood		
<b>Outlet filter</b>				
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.		
<b>Filter fan RAL 7035</b>		<b>3238.700</b>	<b>3238.710</b>	<b>3238.724</b>
<b>Filter fan RAL 9005</b>		<b>3238.708</b>	<b>3238.718</b>	<b>-</b>
<b>EMC filter fan RAL 7035</b>		<b>3238.800</b>	<b>3238.810</b>	<b>3238.824</b>
<b>Electrical specifications</b>				
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	-		
<b>Air throughputs (further information can be found in the characteristic curves on the Rittal homepage)</b>				
Unimpeded airflow with chopped-fibre filter	m³/h	53/64		53
With outlet filter including chopped-fibre filter	m³/h	40/46		40
Unimpeded airflow with pleated filter	m³/h	63/72		63
With outlet filter including pleated filter	m³/h	49/55		49
<b>Other</b>				
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)		IP 54 with pleated filter (standard) IP 54 with chopped-fibre filter IP 55 with pleated filter and absorber mat IP 56 with hose-proof hood		
Protection category (according to NEMA)		NEMA 12 with pleated filter (standard) or chopped-fibre filter NEMA 3, 3R, 4, 4X with hose-proof hood		
<b>Outlet filter</b>				
RAL 7035		3238.300		
RAL 9005		3238.308		
EMC RAL 7035		3238.400		

Tab. 4: Technical specifications

Technical modifications reserved.

	Unit	Model No.		
<b>Filter fan RAL 7035</b>		<b>3239.700</b>	<b>3239.710</b>	<b>3239.724</b>
<b>Filter fan RAL 9005</b>		<b>3239.708</b>	<b>3239.718</b>	<b>-</b>
<b>EMC filter fan RAL 7035</b>		<b>3239.800</b>	<b>3239.810</b>	<b>3239.824</b>
<b>Electrical specifications</b>				
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	-		
<b>Air throughputs (further information can be found in the characteristic curves on the Rittal homepage)</b>				
Unimpeded airflow with chopped-fibre filter	m³/h	100/115		100
With outlet filter including chopped-fibre filter	m³/h	75/86		75
Unimpeded airflow with pleated filter	m³/h	110/125		110
With outlet filter including pleated filter	m³/h	92/104		92
<b>Other</b>				
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)		IP 54 with pleated filter (standard) IP 54 with chopped-fibre filter IP 55 with pleated filter and absorber mat IP 56 with hose-proof hood		
Protection category (according to NEMA)		NEMA 12 with pleated filter (standard) or chopped-fibre filter NEMA 3, 3R, 4, 4X with hose-proof hood		
<b>Outlet filter</b>				
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.		
<b>Filter fan RAL 7035</b>		<b>3240.700</b>	<b>3240.710</b>	<b>3240.724</b>
<b>Filter fan RAL 9005</b>		<b>3240.708</b>	<b>3240.718</b>	-
<b>EMC filter fan RAL 7035</b>		<b>3240.800</b>	<b>3240.810</b>	-
<b>Electrical specifications</b>				
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	-		
<b>Air throughputs (further information can be found in the characteristic curves on the Rittal homepage)</b>				
Unimpeded airflow with chopped-fibre filter	m <sup>3</sup> /h	175/157		175
With outlet filter including chopped-fibre filter	m <sup>3</sup> /h	130/112		130
Unimpeded airflow with pleated filter	m <sup>3</sup> /h	218/191		218
With outlet filter including pleated filter	m <sup>3</sup> /h	191/161		191
<b>Other</b>				
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)		IP 54 with pleated filter (standard) IP 54 with chopped-fibre filter IP 55 with pleated filter and absorber mat IP 56 with hose-proof hood		
Protection category (according to NEMA)		NEMA 12 with pleated filter (standard) or chopped-fibre filter NEMA 3, 3R, 4, 4X with hose-proof hood		
<b>Outlet filter</b>				
RAL 7035		3240.300		
RAL 9005		3240.308		
EMC RAL 7035		3240.400		

Tab. 6: Technical specifications

Technical modifications reserved.

	Unit	Model No.		
<b>Filter fan RAL 7035</b>		<b>3241.700</b>	<b>3241.710</b>	<b>3241.724</b>
<b>Filter fan RAL 9005</b>		<b>3241.708</b>	<b>3241.718</b>	-
<b>EMC filter fan RAL 7035</b>		<b>3241.800</b>	<b>3241.810</b>	-
<b>Electrical specifications</b>				
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	-		
<b>Air throughputs (further information can be found in the characteristic curves on the Rittal homepage)</b>				
Unimpeded airflow with chopped-fibre filter	m³/h	225/245		225
With outlet filter including chopped-fibre filter	m³/h	173/187		173
Unimpeded airflow with pleated filter	m³/h	272/280		272
With outlet filter including pleated filter	m³/h	242/246		242
<b>Other</b>				
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)		IP 54 with pleated filter (standard) IP 54 with chopped-fibre filter IP 55 with pleated filter and absorber mat IP 56 with hose-proof hood		
Protection category (according to NEMA)		NEMA 12 with pleated filter (standard) or chopped-fibre filter NEMA 3, 3R, 4, 4X with hose-proof hood		
<b>Outlet filter</b>				
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.	
<b>Filter fan RAL 7035</b>		<b>3243.700</b>	<b>3243.710</b>
<b>Filter fan RAL 9005</b>		<b>3243.708</b>	<b>3243.718</b>
<b>EMC filter fan RAL 7035</b>		<b>3243.800</b>	<b>3243.810</b>
<b>Electrical specifications</b>			
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	-	
<b>Air throughputs (further information can be found in the characteristic curves on the Rittal homepage)</b>			
Unimpeded airflow with chopped-fibre filter	m <sup>3</sup> /h	540/590	
With outlet filter including chopped-fibre filter	m <sup>3</sup> /h	444/498	
Unimpeded airflow with pleated filter	m <sup>3</sup> /h	625/716	
With outlet filter including pleated filter	m <sup>3</sup> /h	565/645	
<b>Other</b>			
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)		IP 54 with pleated filter (standard) IP 54 with chopped-fibre filter IP 55 with pleated filter and absorber mat IP 56 with hose-proof hood	
Protection category (according to NEMA)		NEMA 12 with pleated filter (standard) or chopped-fibre filter NEMA 3, 3R, 4, 4X with hose-proof hood	
<b>Outlet filter</b>			
RAL 7035		3243.300	
RAL 9005		3243.308	
EMC RAL 7035		3243.400	

Tab. 8: Technical specifications

Technical modifications reserved.

	Unit	Model No.			
<b>Filter fan RAL 7035</b>		<b>3244.700</b>	<b>3244.710</b>	<b>3244.740</b>	
<b>Filter fan RAL 9005</b>		<b>3244.708</b>	<b>3244.718</b>	-	
<b>EMC filter fan RAL 7035</b>		<b>3244.800</b>	<b>3244.810</b>	-	
<b>Electrical specifications</b>					
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
<b>Air throughputs (further information can be found in the characteristic curves on the Rittal homepage)</b>					
Unimpeded airflow with chopped-fibre filter	m³/h	700/770			
With outlet filter including chopped-fibre filter	m³/h	537/587			
Unimpeded airflow with pleated filter	m³/h	867/910			
With outlet filter including pleated filter	m³/h	720/745			
<b>Other</b>					
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)		IP 54 with pleated filter (standard) IP 54 with chopped-fibre filter IP 55 with pleated filter and absorber mat IP 56 with hose-proof hood			
Protection category (according to NEMA)		NEMA 12 with pleated filter (standard) or chopped-fibre filter NEMA 3, 3R, 4, 4X with hose-proof hood			
<b>Outlet filter</b>					
RAL 7035		3243.300			
RAL 9005		3243.308			
EMC RAL 7035		3243.400			

Tab. 9: Technical specifications

Technical modifications reserved.

# Cut-out/drilling dimensions

EN

## 11 Cut-out/drilling dimensions

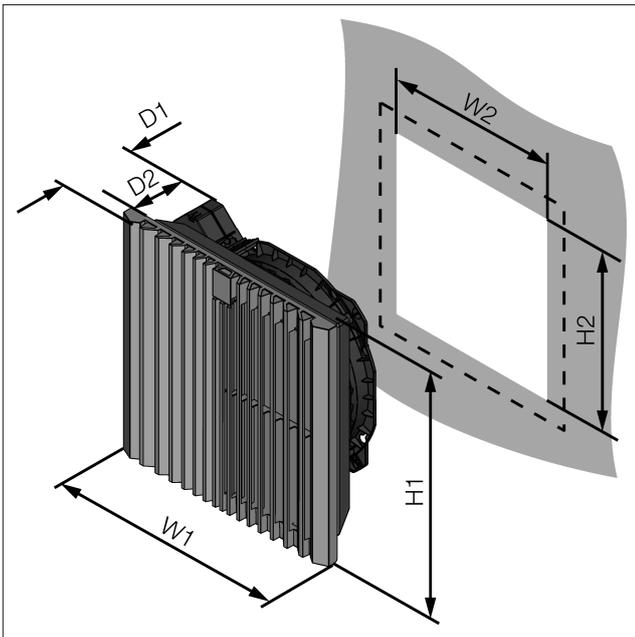


Fig. 25: Cut-out dimensions

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

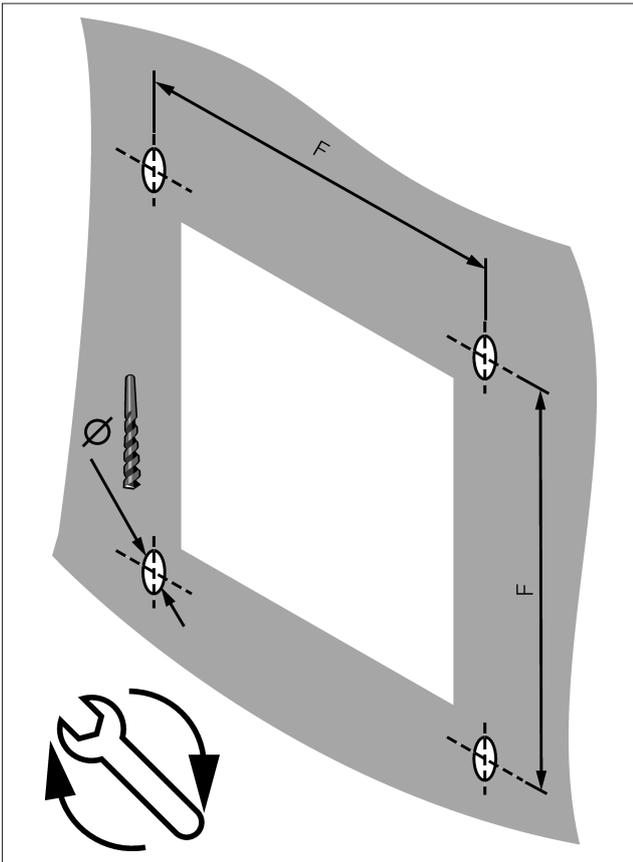


Fig. 26: Drilling pattern



**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

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 filter fan and the inside of the enclosure as shown in the following illustration.

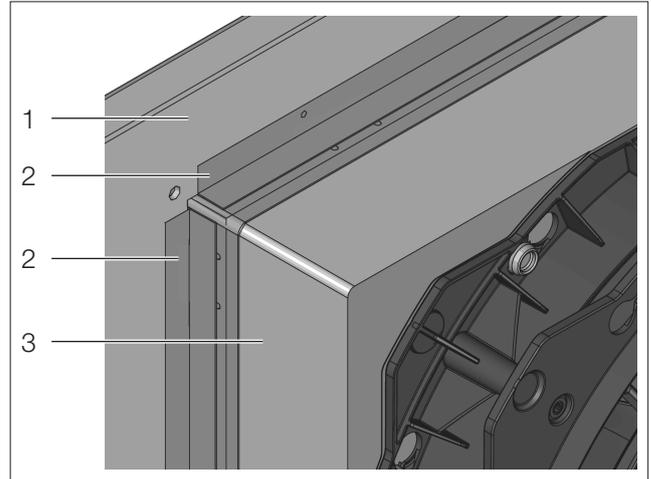


Fig. 27: EMC contact foils

**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).

## 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 filter fan

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 filter fan

### IP 54 pleated filter for filter fan

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: IP 54 pleated filter for filter fan

### IP 55 pleated filter for filter fan

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: IP 55 pleated filter for filter fan

**Blanking cover for filter fan / outlet filter**

To fit Model No.	IP protection category in accordance with IEC 60529	Packs of	Model No.
3237.xxx	IP 54	2 pc(s).	3237.021
3238.xxx	IP 54	2 pc(s).	3238.020
3239.xxx	IP 54	2 pc(s).	3239.020
3240.xxx/3241.xxx	IP 54	2 pc(s).	3240.020
3243.xxx/3244.xxx	IP 54	2 pc(s).	3243.020

Tab. 16: Blanking cover for filter fan / 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

## 14 Connection diagrams

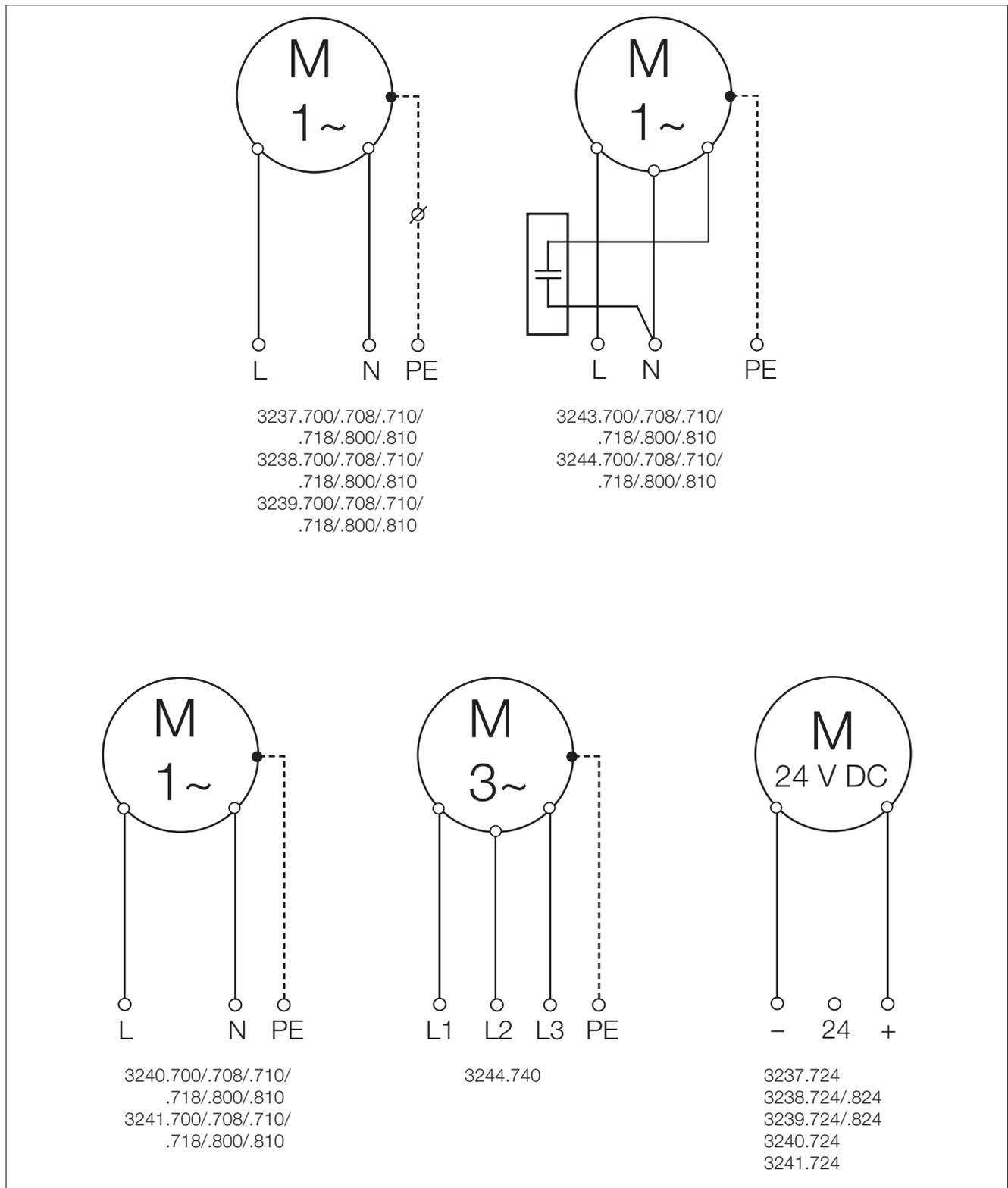


Fig. 28: Connection diagrams

## 15 Declaration of conformity

### Vereinfachte EU-Konformitätserklärung / Simplified EU Declaration of Conformity



Wir / We

**Rittal GmbH & Co. KG, Auf dem Stützelberg, 35745 Herborn**

erklären hiermit, dass die Produkte / hereby declare that the products

Serienbezeichnung / Serial name:

**Filterlüfter  
Filter fan**

Handelsbezeichnung / Commercial part no.:

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

(Artikel gemäß dieser Anleitung / Types referenced in this manual)

folgender Richtlinien entsprechen / conform to the following Directive:

**2006/42/EG Machinery Directive**

Weitere Richtlinien / Additional Directives:

**2011/65/EU Hazardous Substances Directive (RoHS)**

**2014/30/EU EMC Directive**

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