

Rittal – The System.

Faster – better – everywhere.

Fan-and-filter unit



3237.xxx

3238.xxx

3239.xxx

3240.xxx

3241.xxx

3243.xxx

3244.xxx

3245.xxx

Assembly and operating instructions

ENCLOSURES

POWER DISTRIBUTION

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SOFTWARE & SERVICES

FRIEDHELM LOH GROUP



Preface

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Preface

Dear Customer!

Thank you for choosing a fan-and-filter unit 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 fan-and-filter unit.
- trained specialists who are familiar with operation of the fan-and-filter unit.

1.1 Other applicable documents

The assembly and operating instructions available as paper documents for the unit types described here are included 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 Retention of documents

These instructions and all associated documents constitute 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



Danger!
Immediate danger to life and limb!



Caution!
Potential threat to the product and its environment.



Note:
Useful information and special features.

- The bullet point indicates an action to be performed.

2 Safety instructions

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

- Assembly, installation and servicing may only be performed by properly trained specialists.
- 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.
- The louvres must always have their opening pointing downwards.
- Use only original spare parts and accessories.

- Do not make any changes to the fan-and-filter unit other than those described in these and other applicable instructions.
- The fan-and-filter unit must only be connected to the mains with the system de-energised. Connect the pre-fuse specified on the rating plate.
- Changes to the direction of airflow must only be carried out with the system de-energised.
- Changes to the positioning of the mains connection must only be carried out with the system de-energised.
- Never insert your fingers into the rotating fan blade.
- Electrical connection and any repairs may only be carried out by authorised specialist personnel.

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.

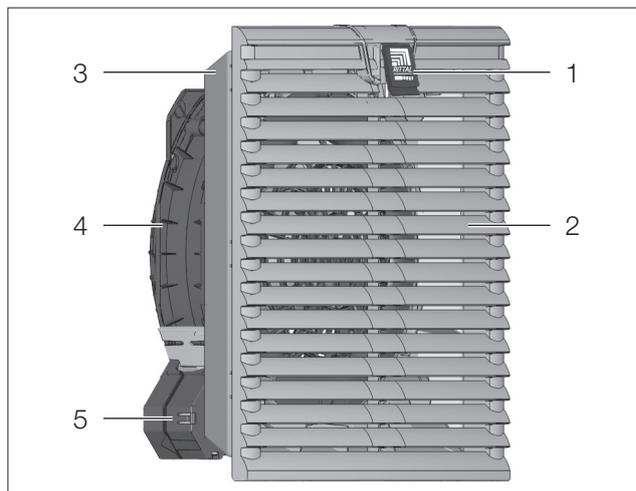


Fig. 1: Product description

Key

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

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

Rittal fan-and-filter units may be controlled more efficiently using a thermostat (Model No. 3110.000), digital temperature display (Model No. 3114.200), temperature-dependent speed control (Model No. 3120.200, 3235.440, 3235.450) and/or hygrostat (Model No. 3118.000).



Note:

The control unit 3120.200 can only be used with single-phase AC units. The control units 3235.440 and 3235.450 can only be used with fan-and-filter units with integrated control interface.

(EC fan-and-filter units with air throughput above 180 m³/h. Model No. 3240.500, 3241.500, 3243.500, 3244.500, 3245.500 and 3245.508).

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. 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 standard fleece filter mat. The filter must be checked regularly in accordance with the level of dust exposure and replaced as necessary. To increase the protection category and for presence of dust with a grain size of <10 µm, we recommend the use of IP 55 pleated filters.



Note:

The air throughput volume will be reduced. 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 3237.1xx to 3239.1xx)
1	Assembly and operating instructions
1	Drilling template, self-adhesive
1	Standard fleece filter mat 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.
- 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 (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 fan-and-filter units are bayed vertically, a minimum separation should be observed.

Assembly and connections

EN

– 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). The corresponding minimum distances between the fan and component must be observed in order to ensure unhindered air circulation.

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. 10 and fig. 11, page 15.



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

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

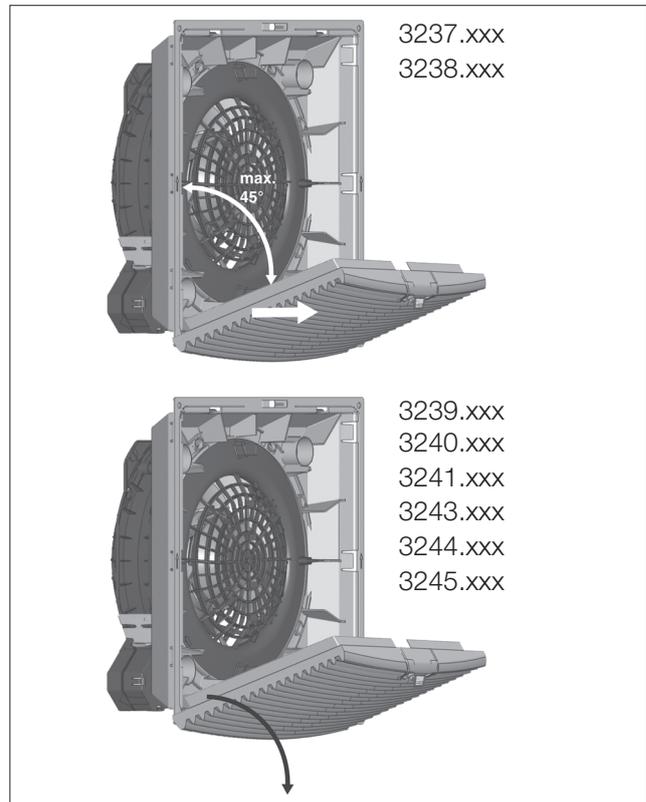


Fig. 2: Release the louvred grille

- 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:
 - IP 55 by using a pleated filter or a hose-proof hood.
 - IP 56 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.

4.4 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.

- Remove the red cover from the electrical connection.

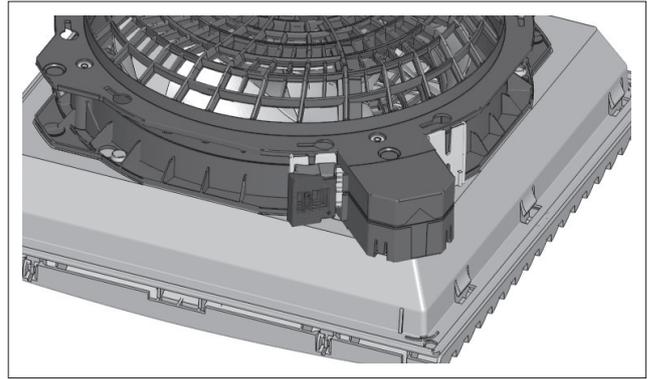


Fig. 3: Access the electrical connection

- 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).

- Re-attach the electrical connection



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. To this end, press down on the release button of the bayonet connection at the rear of the fan. Units 3238.xxx to 3239.xxx are released by pulling out the clip (see fig. 4) of the bayonet connection.

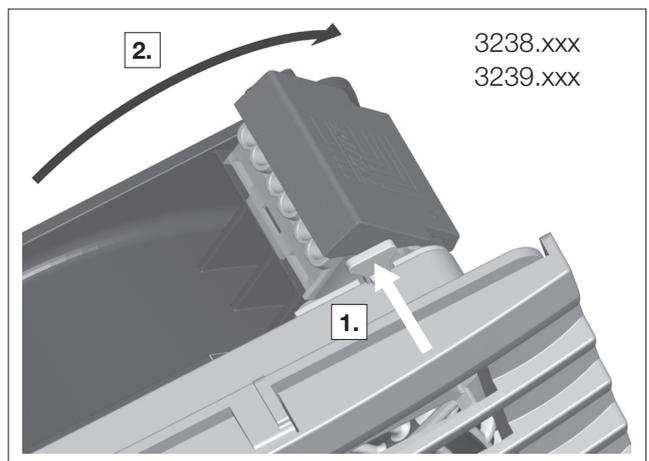


Fig. 4: Release the bayonet connection

Units 3240.xxx, 3241.xxx, 3243.xxx to 3245.xxx are released by pressing the release button of the bayonet

connection (see fig. 5), located on the opposite corner from the connection terminal.

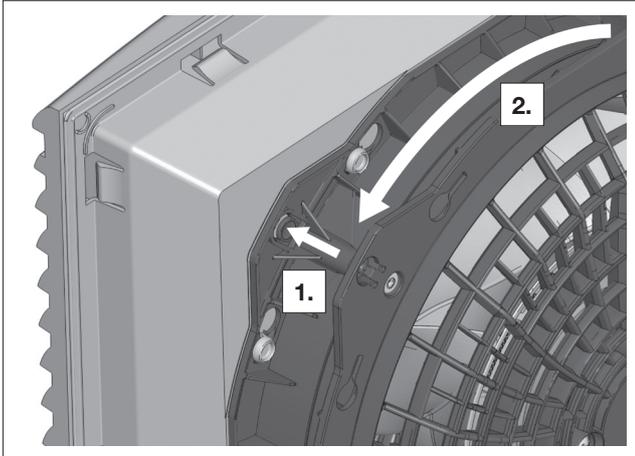


Fig. 5: Release the bayonet connection

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. Simply release the fan housing and rotate it through 180°. To release, please follow the same procedure as described under section 5.2 "Rotating the voltage connection", page 7.

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

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 standard fleece filter mat for the pre-filtering of dry coarse dust and lint in the ambient air.

To increase the protection category and for presence of dust with a grain size $<10 \mu\text{m}$, we recommend the use of pleated filters (see section 13 "Accessories").

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 fleece filter mat supplied for the fan-and-filter unit must be removed and disposed of when a pleated filter is used.



Risk of injury!

Only change the filter mat while the fan rotor is stationary.

Never insert your fingers into the fan rotor.

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

7.1 Replacing the fleece filter

- First press the catch of the louvred grill (Rittal logo) up slightly with one finger (see fig. 6).
- Once it is released, the louvred grille can be dropped open by approx. 70° or 90°.
- Remove the dirty fleece filter mat and place the new fleece filter mat in the filter housing.
- When installing, ensure that the roughened side with the Rittal logo points inside.
- Now push the louvred grille back onto the enclosure until it snaps audibly into position.

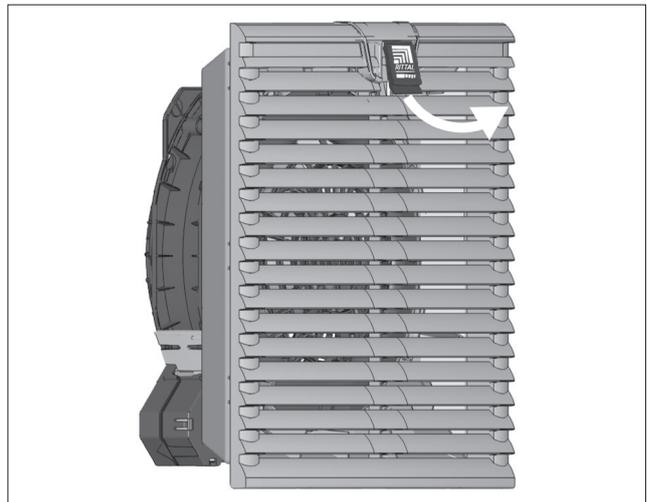


Fig. 6: Release the louvred grille



Note:

If it becomes necessary to change the direction of the airflow (see section 5.3 "Changing the direction of airflow", page 8), the installation is reversed accordingly.

7.2 Replacing the pleated filter

- First press the catch of the louvred grille (Rittal logo) up slightly with one finger (see fig. 6).
- Once it is released, the louvred grille can be dropped open by approx. 70° or 90°.
- Remove the standard fleece filter contained in the scope of supply; it is not required.
- Place the pleated filter in the louvred grille. The "Top" logo indicates the insertion direction (see fig. 7)

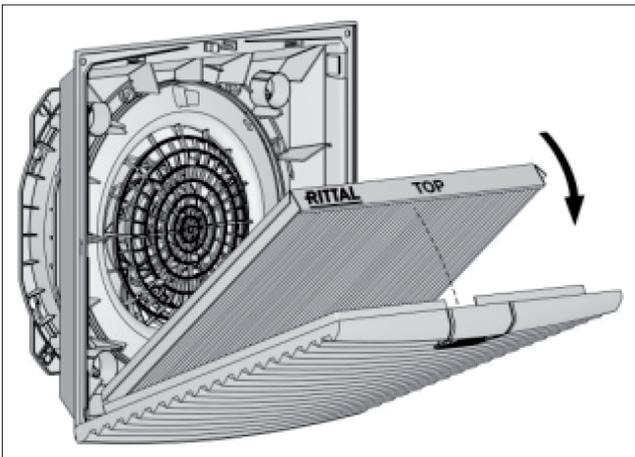


Fig. 7: Installing the IP 54 pleated filter

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

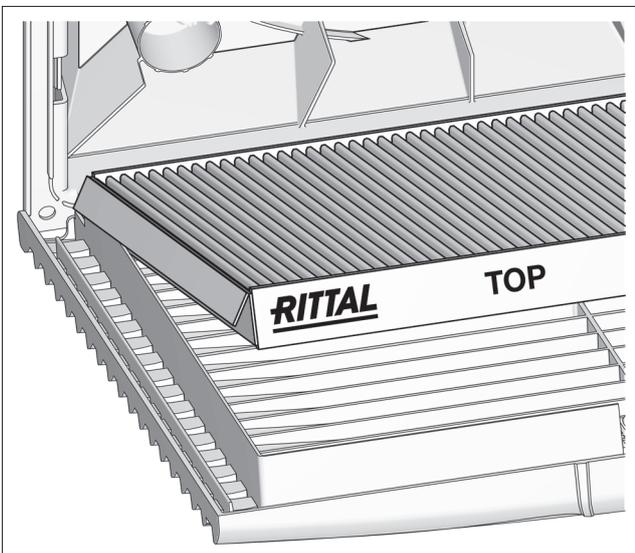


Fig. 8: Positioning of the side tabs

- For IP 55 only: place the IP 55 absorbent fleece supplied with the pleated filters on the previously placed pleated filter (see fig. 9). The installation direction of the absorber is not critical.

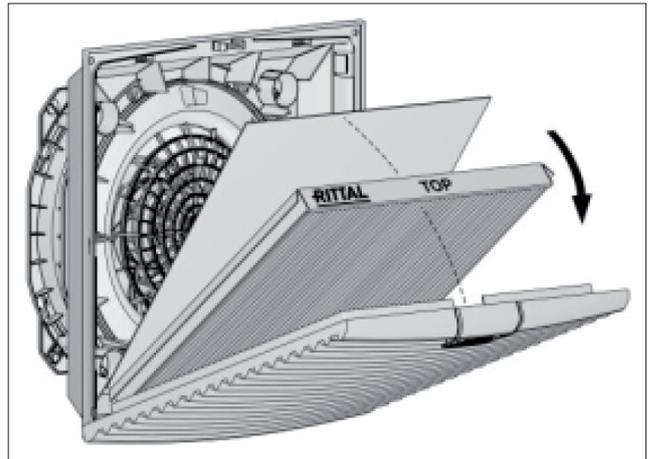


Fig. 9: Installing the IP 55 pleated filter

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

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 3245.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.

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



Caution!
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		3237.100	3237.110	3237.124	3238.100	3238.110	3238.124
Fan-and-filter unit RAL 9005		3237.108	3237.118	–	3238.108	3238.118	–
EMC fan-and-filter unit RAL 7035		3237.600	–	–	3238.600	–	–
Rated operating voltage	V Hz	230, 1~, 50/60	115, 1~, 50/60	24 (DC)	230, 1~, 50/60	115, 1~, 50/60	24 (DC)
Rated current max.	A	0.085/0.07	0.16/0.13	0.1	0.1/0.09	0.21/0.18	0.24
Power consumption	W	12/10	11/9	3	15/14	17/15	5.7
Pre-fuse T	A	2					
Dimensions							
Width (B1) x height (H1)	mm	116.5 x 116.5			148.5 x 148.5		
Required mounting cut-out (B2 x H2)	mm	92 x 92			124 x 124		
Depth (T1)	mm	16					
Max. installation depth (T2)	mm	43			58.5		
Air throughput, unimpeded airflow with standard fleece filter mat	m ³ /h	20/25		20	52/63		52
Air throughput, unimpeded airflow with pleated filter	m ³ /h	–		–	63/70		63
Air throughput with outlet filter, including standard fleece filter mat	m ³ /h	1 x 3237.20x: 15/18			1 x 3238.20x: 36/42		
		2 x 3237.20x: 16/20			2 x 3238.20x: 46/54		
Air throughput with outlet filter including pleated filter	m ³ /h	–			1 x 3238.20x: 43/50		
		–			2 x 3238.20x: 54/62		
Outlet filter RAL 7035		3237.200			3238.200		
Outlet filter RAL 9005		3237.208			3238.208		
EMC outlet filter RAL 7035		3237.060			3238.060		
Fan		Axial, shaded pole motor		Axial DC motor	Axial, shaded pole motor		Axial, DC motor
Noise pressure level	dB (A)	38/43		38	46/49		46
Operating temperature	°C	-15...+55					
Storage temperature	°C	-30...+70					
Protection category (to IEC 60 529)		IP 54 standard IP 56 with hose-proof hood			IP 54 standard IP 55 with pleated filter IP 56 with hose-proof hood		

Tab. 3: Technical specifications

Technical modifications reserved.

Technical specifications

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	Unit	Model No.		
Fan-and-filter unit RAL 7035		3239.100	3239.110	3239.124
Fan-and-filter unit RAL 9005		3239.108	3239.118	–
EMC fan-and-filter unit RAL 7035		3237.600	–	–
Rated operating voltage	V Hz	230, 1~, 50/60	115, 1~, 50/60	24 (DC)
Rated current max.	A	0.1/0.09	0.21/0.18	0.23
Power consumption	W	15/14	17/15	5,7
Pre-fuse T	A	2		
Dimensions				
Width (B1) x height (H1)	mm	204 x 204		
Required mounting cut-out (B2 x H2)	mm	177 x 177		
Depth (T1)	mm	24		
Max. installation depth (T2)	mm	90		
Air throughput, unimpeded airflow with standard fleece filter mat	m ³ /h	100/115		100
Air throughput, unimpeded airflow with pleated filter	m ³ /h	110/125		110
Air throughput with outlet filter, including standard fleece filter mat	m ³ /h	1 x 3239.20x: 74/87		
		2 x 3239.20x: 84/98		
Air throughput with outlet filter including pleated filter	m ³ /h	1 x 3239.20x: 89/100		
		2 x 3239.20x: 98/112		
Outlet filter RAL 7035		3239.200		
Outlet filter RAL 9005		3239.208		
EMC outlet filter RAL 7035		3239.060		
Fan		Axial, shaded pole motor		Axial, DC motor
Noise pressure level	dB (A)	46/49		46
Operating temperature	°C	-15...+55		
Storage temperature	°C	-30...+70		
Protection category (to IEC 60 529)		IP 54 standard IP 55 with pleated filter IP 56 with hose-proof hood		

Tab. 4: Technical specifications

Technical modifications reserved.

	Unit	Model No.					
Fan-and-filter unit RAL 7035		3240.100	3240.110	3240.124	3241.100	3241.110	3241.124
Fan-and-filter unit RAL 9005		3240.108	3240.118	–	3241.108	3241.118	–
EMC fan-and-filter unit RAL 7035		3240.600	–	–	3241.600	–	–
Rated operating voltage	V Hz	230, 1~, 50/60	115, 1~, 50/60	24 (DC)	230, 1~, 50/60	115, 1~, 50/60	24 (DC)
Rated current max.	A	0.21/0.19	0.42/0.38	0.43	0.26/0.24	0.52/0.48	0.78
Power consumption	W	35/34		11	40/42		19
Pre-fuse T	A	2	4	2	4	2	
Dimensions							
Width (B1) x height (H1)	mm	255 x 255					
Required mounting cut-out (B2 x H2)	mm	224 x 224					
Depth (T1)	mm	25					
Max. installation depth (T2)	mm	107					
Air throughput, unimpeded airflow with standard fleece filter mat	m ³ /h	175/155		175	225/245		225
Air throughput, unimpeded airflow with pleated filter	m ³ /h	218/188		218	272/272		272
Air throughput with outlet filter, including standard fleece filter mat	m ³ /h	1 x 3240.20x: 130/110			1 x 3240.20x: 171/182		
		2 x 3240.20x: 159/135			2 x 3240.20x: 200/217		
Air throughput with outlet filter including pleated filter	m ³ /h	1 x 3240.20x: 188/157			1 x 3240.20x: 237/228		
		2 x 3240.20x: 207/177			2 x 3240.20x: 261/257		
Outlet filter RAL 7035		3240.200					
Outlet filter RAL 9005		3240.208					
EMC outlet filter RAL 7035		3240.060					
Fan		Diagonal, selfstarting shaded pole motor		Diagonal, DC motor	Diagonal, selfstarting shaded pole motor		Diagonal, DC motor
Noise pressure level	dB (A)	51/46		51	54/56		54
Operating temperature	°C	-30...+55					
Storage temperature	°C	-30...+70					
Protection category (to IEC 60 529)		IP 54 standard IP 55 with pleated filter IP 56 with hose-proof hood					

Tab. 5: Technical specifications

Technical modifications reserved.

Technical specifications

EN

	Unit	Model No.							
Fan-and-filter unit RAL 7035		3243.100	3243.110	3244.100	3244.110	3244.140	3245.500	3245.510	
Fan-and-filter unit RAL 9005		3243.108	3243.118	3244.108	3244.118	–	3245.508	3245.518	
EMC fan-and-filter unit RAL 7035		3243.600	–	3244.600	–	–	3245.600	–	
Rated operating voltage	V Hz	230, 1~, 50/60	115, 1~, 50/60	230, 1~, 50/60	115, 1~, 50/60	400, 3~, 50/60 460, 3~, 60	200...240 1~, 50/60	100...130 1~, 50/60	
Rated current max.	A	0.37/0.39	0.78/0.8	0.43/0.6	0.9/1.25	0.17/0.21	1.33	2.1	
Power consumption	W	70/87	75/90	95/135	100/145	93/140	165	165	
Pre-fuse T	A	4	6	4	6	Motor circuit breaker	4	6	
Dimensions									
Width (B1) x height (H1)	mm	323 x 323							
Required mounting cut-out (B2 x H2)	mm	292 x 292							
Depth (T1)	mm	25							
Max. installation depth (T2)	mm	118.5		130.5			130.5		
Air throughput, unimpeded airflow with standard fleece filter mat	m³/h	540/590		700/770			890		
Air throughput, unimpeded airflow with pleated filter	m³/h	625/716		855/905			1125		
Air throughput with outlet filter, including standard fleece filter mat	m³/h	1 x 3243.20x: 405/460		1 x 3243.20x: 485/520			1 x 3243.20x: 630		
		2 x 3243.20x: 475/520		2 x 3243.20x: 570/630			2 x 3243.20x: 770		
Air throughput with outlet filter including pleated filter	m³/h	1 x 3243.20x: 550/630		1 x 3243.20x: 700/730			1 x 3243.20x: 930		
		2 x 3243.20x: 600/683		2 x 3243.20x: 800/840			2 x 3243.20x: 1060		
Outlet filter RAL 7035		3243.200							
Outlet filter RAL 9005		3243.208							
EMC outlet filter RAL 7035		3243.060							
Fan		Diagonal, capacitor motor				Diagonal, rotary current motor	Diagonal, EC motor		
Noise pressure level	dB (A)	59/61		65/66		67/70	72		
Operating temperature	°C	-30...+55							
Storage temperature	°C	-30...+70							
Protection category (to IEC 60 529)		IP 54 standard IP 55 with pleated filter IP 56 with hose-proof hood					IP 51 standard IP 52 with pleated filter IP 56 with hose-proof hood		

Tab. 6: Technical specifications

Technical modifications reserved.

11 Cut-out/drilling dimensions

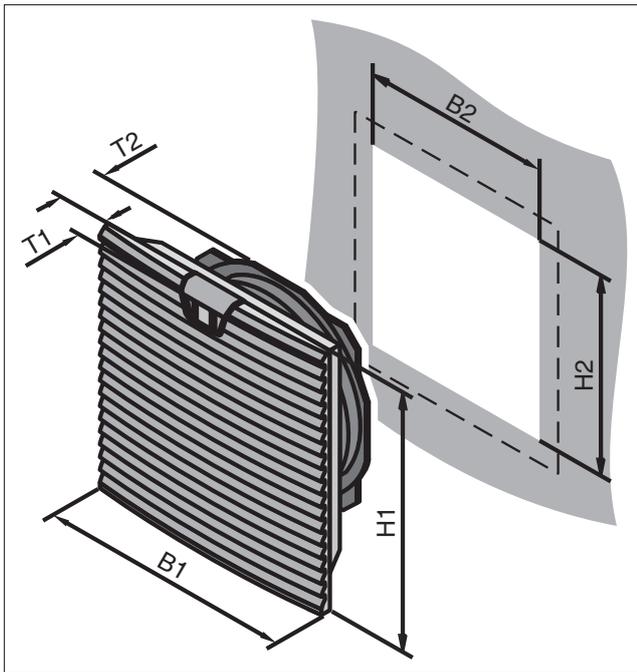


Fig. 10: Cut-out dimensions

B = width; T = Depth

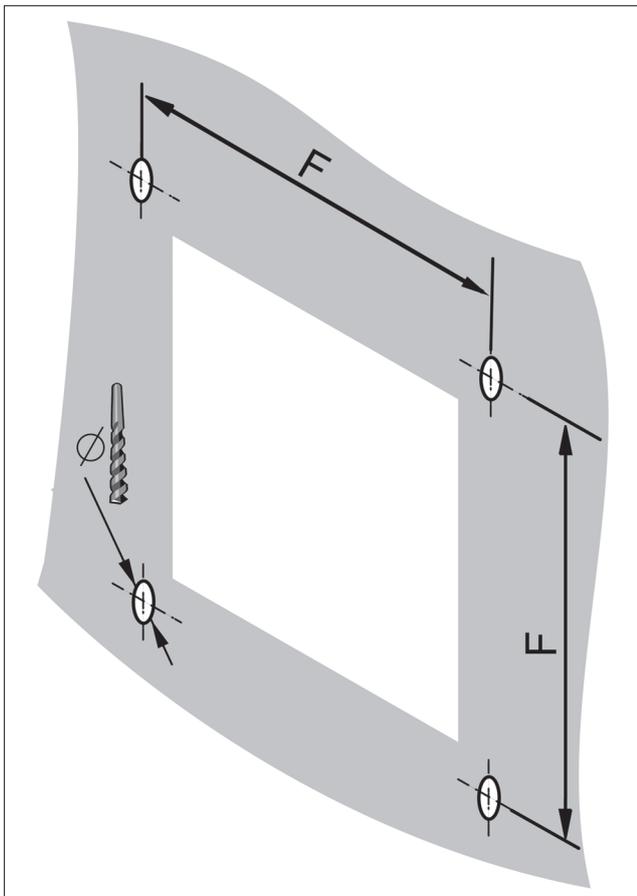


Fig. 11: Drilling pattern



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.	B2 x H2 mm	T2 mm
3237.xxx	92 x 92	43
3238.xxx	124 x 124	58.5
3239.xxx	177 x 177	90
3240.xxx	224 x 224	107
3241.xxx	224 x 224	107
3243.xxx	292 x 292	118.5
3244.xxx	292 x 292	130.5
3245.xxx	292 x 292	130.5

Tab. 7: Cut-out dimensions

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. 8: 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 all-round between the fan-and-filter unit and the inside of the enclosure as shown in the following illustration.

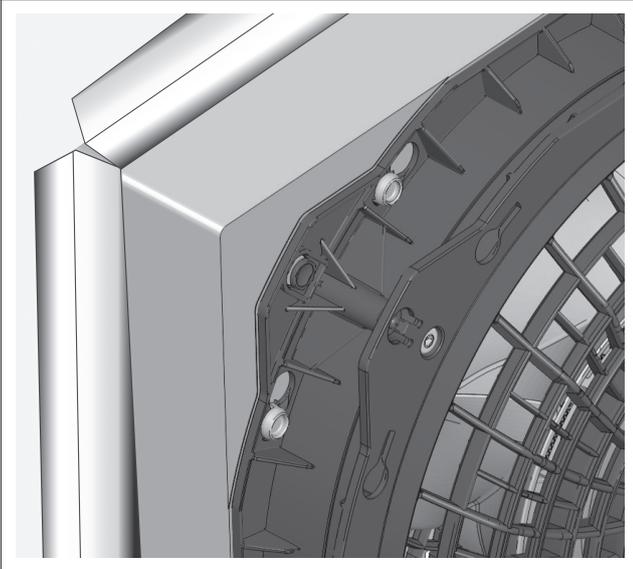


Fig. 12: EMC contact foils



Note:
EMC protection can only be guaranteed when using original Rittal EMC filter media (Model Nos. 3237.066, 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).	3237.066
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/3245.xxx	G3	ISO coarse 50%	5 pc(s).	3243.066

Tab. 9: EMC filter mat

Fleece 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).	3321.700
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/3245.xxx	G3	ISO coarse 50%	5 pc(s).	3173.100

Tab. 10: Fleece filter mat for fan-and-filter unit

IP 54 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

To fit Model No.	Filter class in accordance with DIN EN 779	In accordance with ISO 16890	Packs of	Model No.
3240.xxx/3241.xxx	G4	ISO coarse 70%	5 pc(s).	3172.120
3243.xxx/3244.xxx/3245.xxx	G4	ISO coarse 70%	5 pc(s).	3173.120

Tab. 11: IP 54 pleated filter for fan-and-filter unit

IP 55 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.
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/3245.xxx	G4	ISO ePM10 55%	5 pc(s).	3183.125

Tab. 12: IP 55 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	IP 54	2 pc(s).	3237.020
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/3245.xxx	IP 54	2 pc(s).	3243.020

Tab. 13: 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
3242.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
3245.xxx	350 x 480 x 160	NEMA 1, NEMA 12, NEMA 3, NEMA 3R	1 pc(s).	3245.080

Tab. 14: Hose-proof hoods

14 Connection diagrams

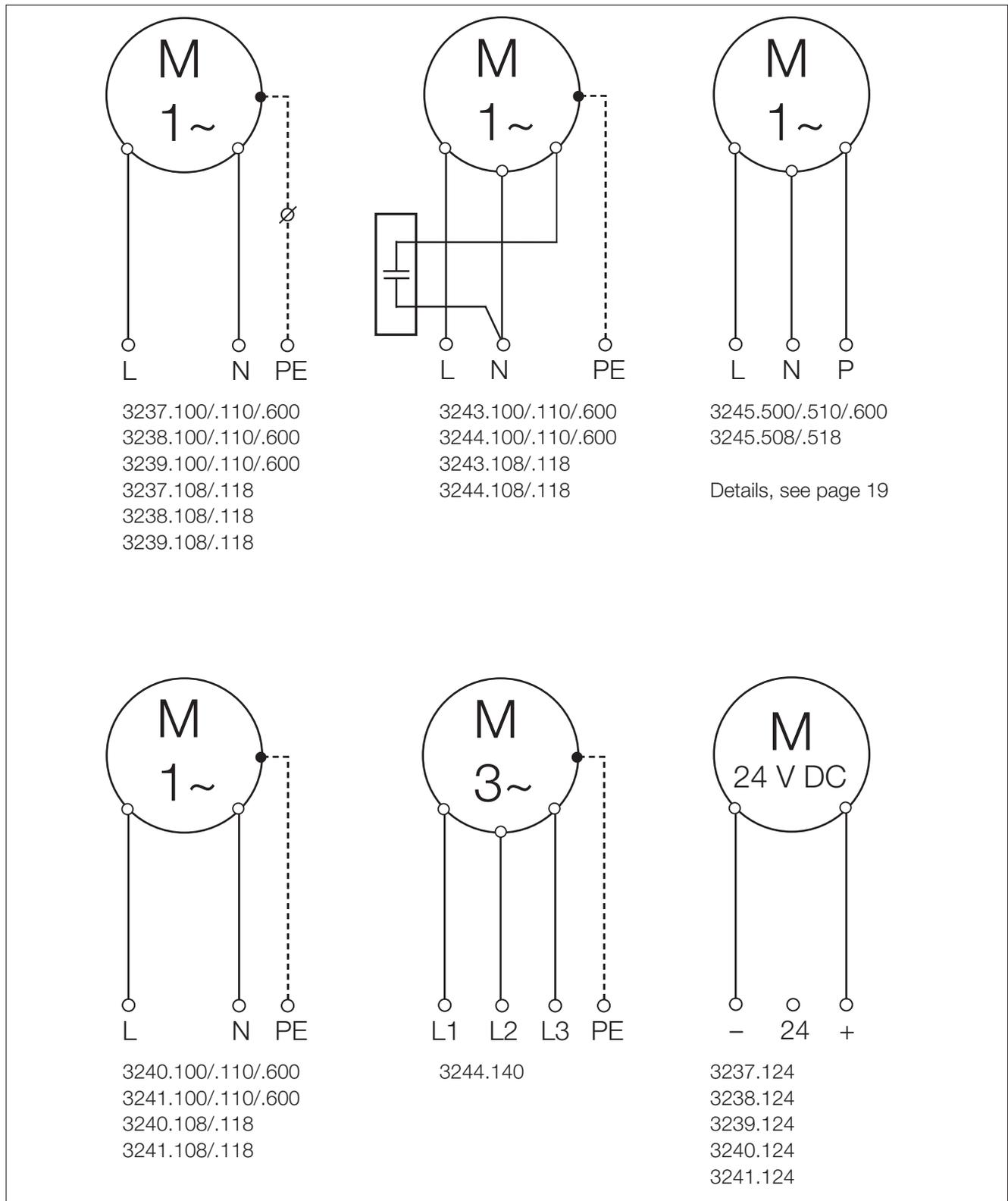


Fig. 13: Connection diagrams

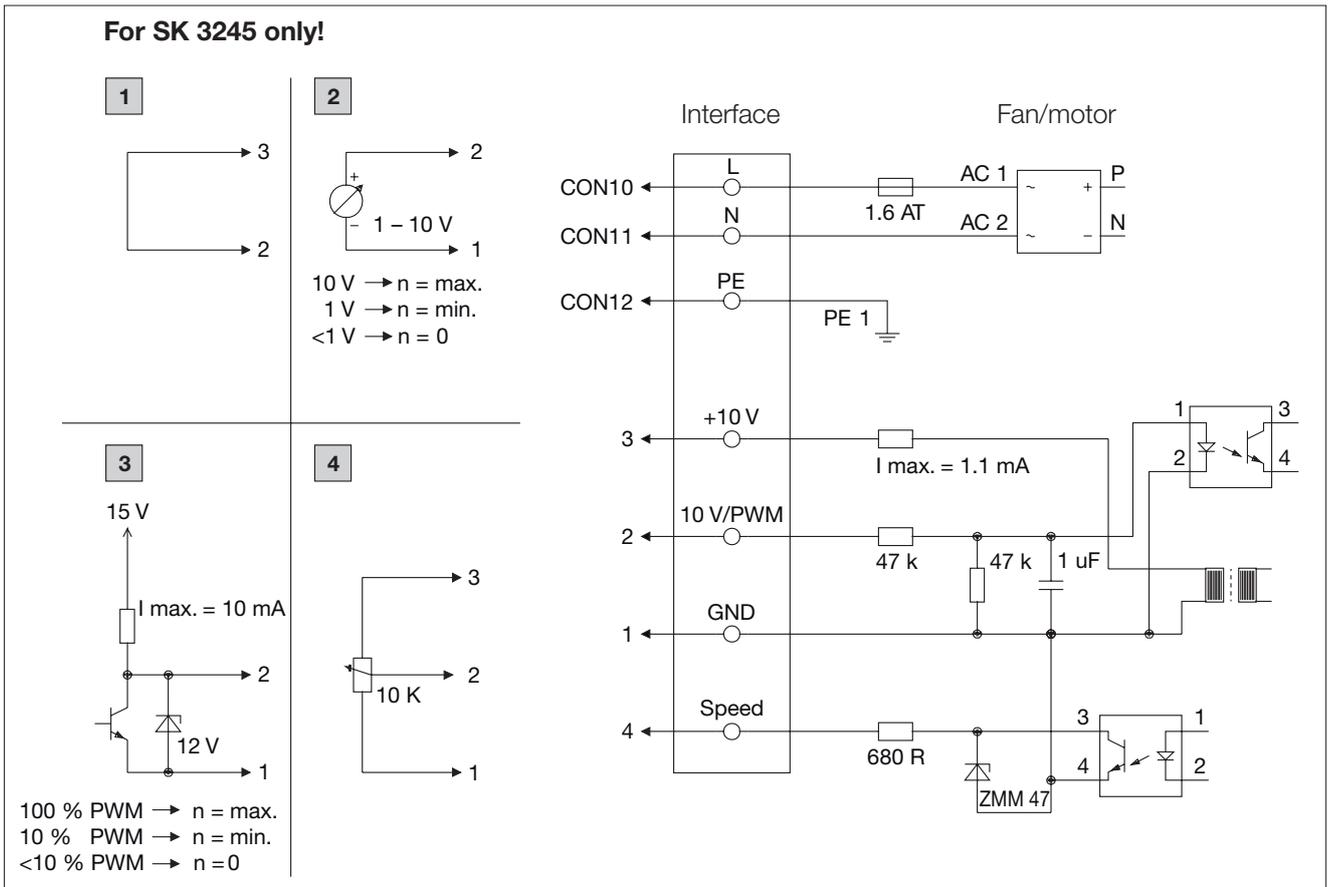


Fig. 14: Connection diagram 3245

- 1** Max. speed (as delivered)
- 2** Adjustable speed
- 3** Adjustable speed via PWM 1 – 10 kHz
- 4** Adjustable speed via potentiometer

No.	Connection	Function/Assignment
CON10	L	Power supply 200...240 V AC, 50...60 Hz
CON11	N	Neutral conductor
CON12	PE	PE conductor
1	GND	GND connection of the control interface
2	0...10 V/PWM	Control input 0...10 V or PWM, galvanically isolated, impedance 100 kΩ
3	+10 V	Voltage output 10 V max. 1.1 mA, galvanically isolated, not short circuit-protected
4	Speed	Speed output Open Collector, 1 pulse per revolution, galvanically isolated

Tab. 15: Explanations to fig. 14

15 Declaration of conformity

EU-Konformitätserklärung / EU Declaration of Conformity



Dri2016592de

Hiermit erklären wir,
We

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

dass die Produkte
declare that the products

**Filter-Lüfter
Filter Fans**

**SK 3237.xxx SK 3238.xxx SK 3239.xxx
SK 3240.xxx SK 3241.xxx SK 3243.xxx SK 3244.xxx SK 3245.xxx**

„xxx“ steht für
applies to:

100, 109, 110, 124, 140, 500, 510, 600, 609, 610, 108, 118, 208, 508, 518

E-Schaltplan, Zusammenbauzeichnung und Beschreibung siehe Montageanleitung
Wiring diagram, assembly drawing and specification, see assembly instructions

folgenden Richtlinien entsprechen:
conform to the following Directives:

**2006/42/EG Maschinenrichtlinie – 2006/42/EC Machinery Directive
2014/30/EU EMV-Richtlinie – 2014/30/EU EMC Directive**

Angewandte harmonisierte Normen:
Applied harmonised standards

EN ISO 12100
Sicherheit von Maschinen - Allgemeine Gestaltungsleitsätze - Risikobeurteilung und Risikominderung
Safety of machinery - General principles for design - Risk assessment and risk reduction
EN 60335-1, A11
Sicherheit elektrischer Geräte für den Hausgebrauch und ähnliche Zwecke - Teil 1: Allgemeine Anforderungen
Household and similar electrical appliances - Safety - Part 1: General requirements
EN 61000-6-2:2005
Elektromagnetische Verträglichkeit (EMV) - Teil 6-2: Fachgrundnormen - Störfestigkeit für Industriebereiche
Electromagnetic compatibility (EMC) - Part 6-2: Generic standards - Immunity for industrial environments
EN 61000-6-4:2007, A1:2011
Elektromagnetische Verträglichkeit (EMV) - Teil 6-4: Fachgrundnormen; Störaussendung für Industriebereiche
Electromagnetic compatibility (EMC) - Part 6-4: Generic standards; Emission standard for industrial environments

Verantwortlich für Dokumentation
Responsible for documentation

Herborn, 08.06.2020

Frank Himmelhuber, Bereichsleiter FuE
Executive Vice President R&D

Rittal GmbH & Co. KG
Auf dem Stützelberg
35745 Herborn

Bei einer nicht mit uns abgestimmten Änderung der Maschine verliert diese EU-Konformitätserklärung ihre Gültigkeit.
This declaration of EU conformity shall become null and void when the assembly is subjected to any modification that has not met with our approval.



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Notes

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