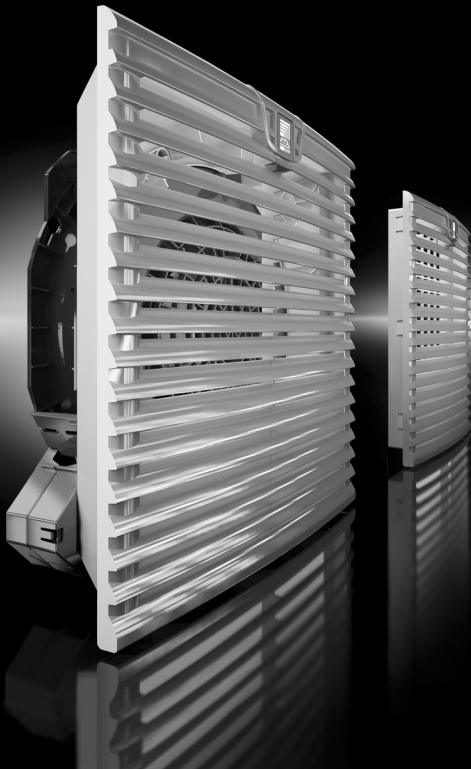


Rittal – The System.

Faster – better – everywhere.

EC fan-and-filter unit



3238.500	3244.500
3239.500	3245.500
3240.500	3245.510
3241.500	3245.600
3243.500	

Assembly and operating instructions

ENCLOSURES

POWER DISTRIBUTION

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IT INFRASTRUCTURE

SOFTWARE & SERVICES

FRIEDHELM LOH GROUP



Preface

EN

Preface

Dear Customer!

Thank you for choosing a EC 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 EC fan-and-filter unit.
- trained specialists who are familiar with operation of the EC 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 EC 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 louvres must always have their opening pointing downwards.
- Use only original spare parts and accessories.
- Do not make any changes to the EC fan-and-filter unit other than those described in these and other applicable instructions.

- The EC 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 EC fan-and-filter unit may vary in appearance from the illustrations contained in these instructions. However, the functions are identical in principle.

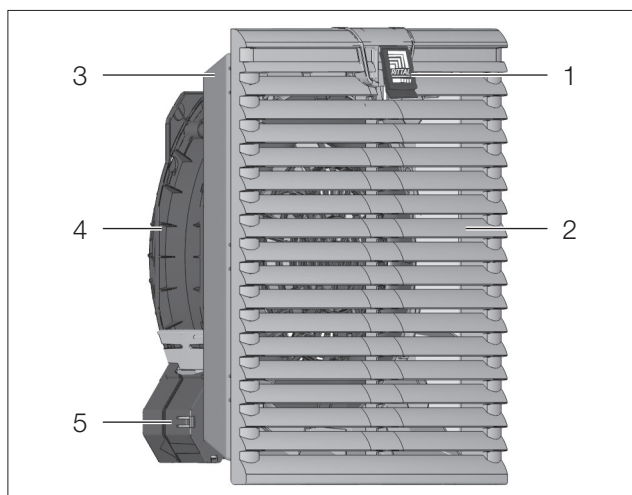


Fig. 1: Product description

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 EC 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 EC 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 an enclosure internal thermostat (Model No. 3110.000), digital temperature display (Model No. 3114.200), temperature-dependent speed control (Model No. 3235.440, 3235.450) and/or hygrostat (Model No. 3118.000).

The Rittal EC fan-and-filter units 3240.500 to 3245.510 as well as 3245.600 possess an integrated control interface (0 – 10 V or PWM input and tacho signal output). These units can be connected either via the Rittal control unit (Model No. 3235.440), the Rittal sensor for speed control (Model No. 3235.450) or else directly via a control system (e.g. PLC) provided by the customer, enabling the speed of the fan to be both controlled and monitored.

The corresponding connection diagram is to be found on page 16 (fig. 13).

3.1.3 Safety equipment

The fan is equipped with thermal winding protection devices for protection against excess current.

3.1.4 Filter mats

The EC fan-and-filter unit/outlet filter is supplied with an installed standard chopped-fibre 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 IP55 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 EC 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	EC fan-and-filter unit
4	Mounting screws (not for 3238.5xx to 3239.5xx)
1	Assembly and operating instructions
1	Drilling template, self-adhesive
1	Standard chopped-fibre 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 EC fan-and-filter unit, must be carefully selected so as to ensure good ventilation.
- The site must be free from excessive dirt and moisture.
- EC 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 EC fan-and-filter unit 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 EC 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 EC 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
3238.xxx	39 mm
3239.xxx	42 mm
3240.xxx	46 mm
3241.xxx	46 mm
3243.xxx	46 mm
3244.xxx	46 mm
3245.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 EC fan-and-filter unit or outlet filter

The EC 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 EC 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 13.



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 EC 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 EC 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.

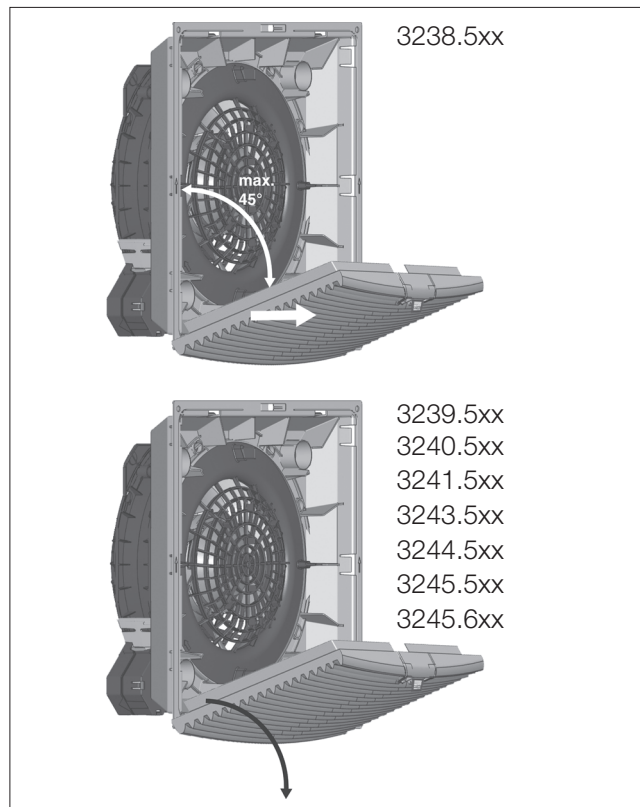


Fig. 2: Release the louvred grille

- 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:
 - IP55 by using a pleated filter or a hose-proof hood.
 - 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 EC 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 regula-

tions 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!
- Install the pre-fuse cited on the rating plate (circuit-breaker or slow fuse) to protect the cable and fan from short circuits. If several fans are operated on a single fuse, observe the total connected load.
- The direction of airflow and the direction of rotation are each marked on the motor housing with an arrow.

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.

4.4.4 Electromagnetic compatibility (EMC)

In order to comply with EMC Directive 61000-6-3 (Emission standard for residential, commercial and light-industrial environments) it may be necessary, depending on the application, to take the following interference suppression measures:

- Fan type 3245.500 – install an upstream 2 mH, 2.5 A interference suppression choke.

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.

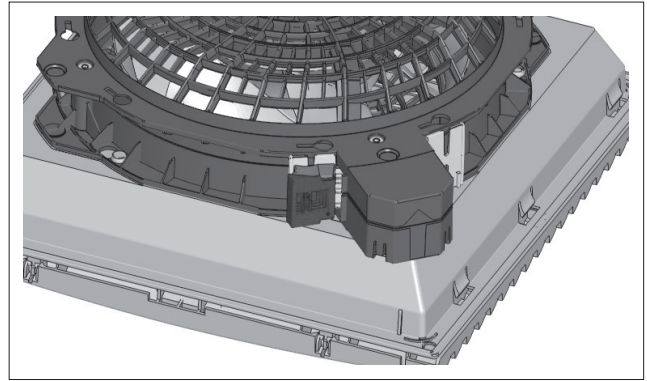


Fig. 3: Access the electrical connection

- Insert the connection cable of the mains supply 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

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 3238.5xx to 3239.xxx are released by pulling out the clip (see fig. 4) of the bayonet connection.

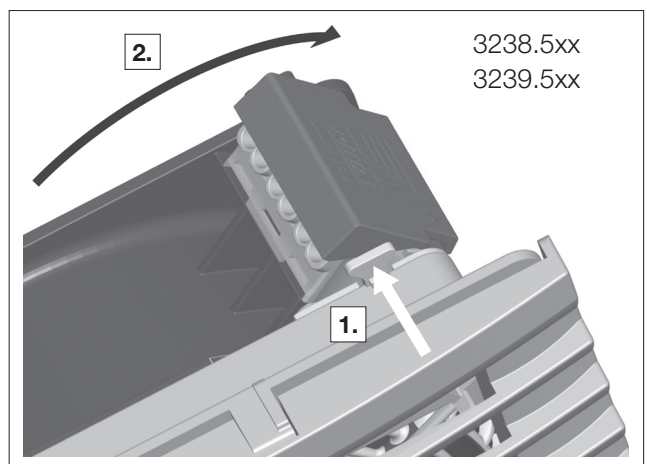


Fig. 4: Release the bayonet connection

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.

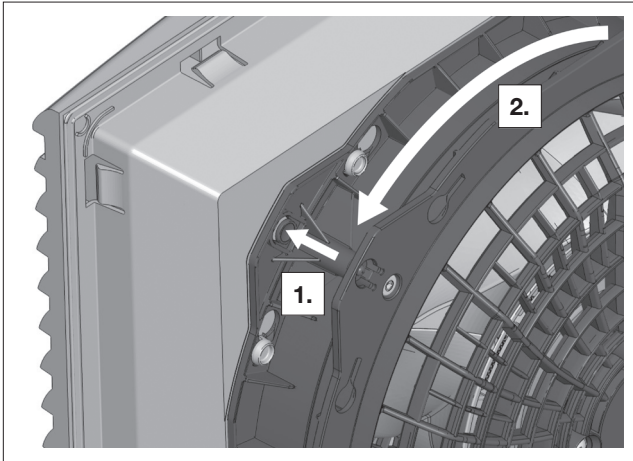


Fig. 5: Release the bayonet connection

5.3 Installing the control line

To permit control of the EC fan-and-filter units via an external control unit (e.g. 3235.440 or 3235.450), the units 3240.5xx to 3245.5xx possess a separate terminal for connection of a control line.

- To this end, release and remove the jumper between the "+10 V" and "0 – 10 V/PWM" connections. For this purpose, use a screwdriver with a 3.5 x 0.5 mm blade.
- Use the screwdriver to open the terminal and insert the connection cable of the control line in accordance with the connection diagram on page 16 (line cross-section 0.8 – 1.5 mm², fine wire).
- Remove the screwdriver.



Note:
For operation without control line, the jumper must be left in the connection clamp. The unit is then operated at maximum speed (see fig. 15).

5.4 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

- Once all the assembly and installation work is complete, switch on the power supply to the EC fan-and-filter unit.

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



Note:
EC fan-and-filter units start running with a delay of approx. 15 sec.

7 Installing and changing the filter

The fan-and-filter unit and outlet filter are supplied as standard with a standard chopped-fibre 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 <math>< 10 \mu\text{m}</math>, 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 throughout and operating approvals.
The chopped-fibre 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 chopped-fibre 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 dirty chopped-fibre filter mat and place the new chopped-fibre 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.

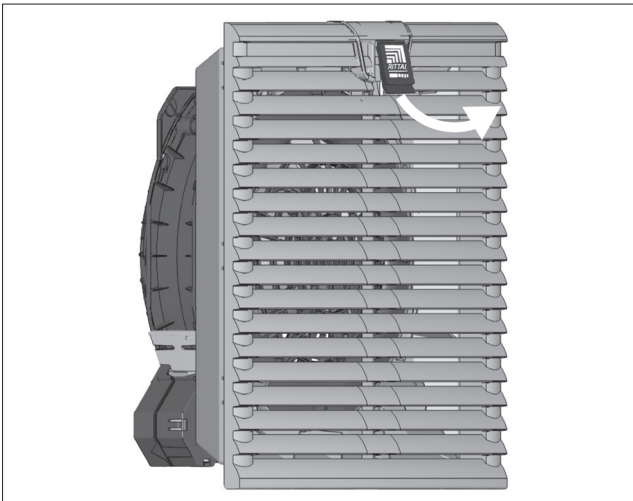


Fig. 6: Release the louvred grille



Note:

If it becomes necessary to change the direction of the airflow (see section 5.4 "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 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 standard chopped-fibre 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)

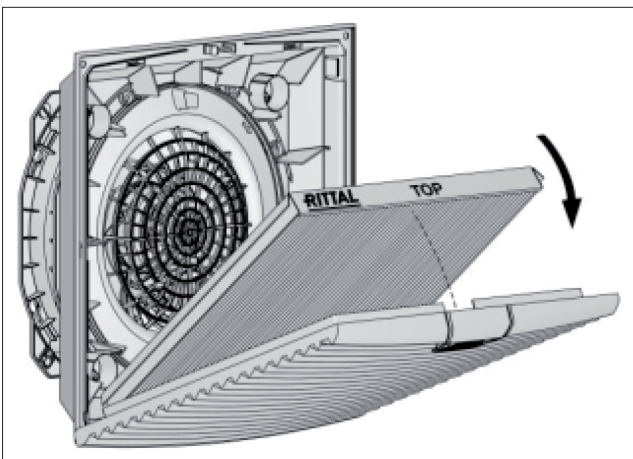


Fig. 7: Installing the IP54 pleated filter

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

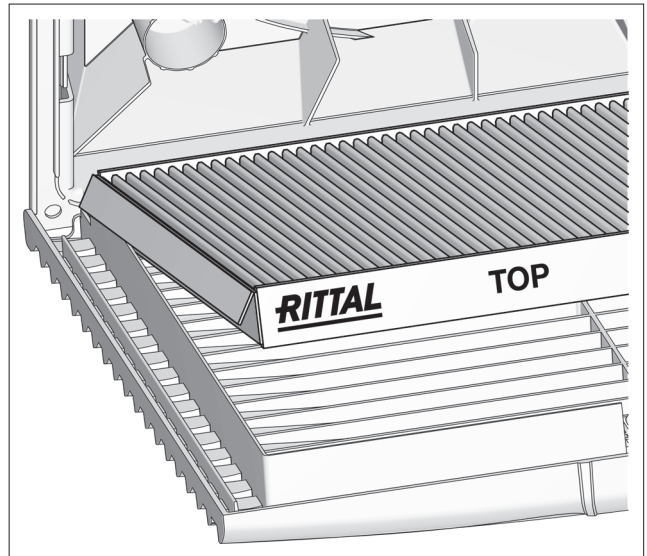


Fig. 8: Positioning of the side tabs

- For IP55 only: place the IP55 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.

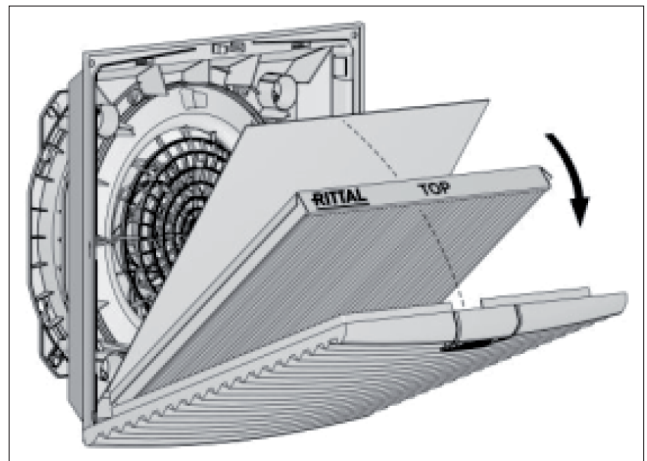


Fig. 9: Installing the IP55 pleated filter

- 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 ball bearing, and is protected against humidity and dust, and equipped with a temperature monitor.

The life expectancy is at least 60,000 operating hours (L10, 40 °C). The EC fan-and-filter unit is thus largely maintenance free.

Storage and disposal

EN

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 EC fan-and-filter unit must not be stored at temperatures above +70 °C or below -25 °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		3238.500	3239.500	3240.500	3241.500	3243.500
Rated operating voltage	V Hz	200 - 240, 1~, 50/60	200 - 240, 1~, 50/60	200 - 240, 1~, 50/60	200 - 240, 1~, 50/60	200 - 240, 1~, 50/60
Rated current max.	A	0.05	0.05	0.12	0.17	0.5
Power consumption (active power)	W	6	6	11	16	51
Pre-fuse T	A	6	6	6	6	6
Dimensions						
Width (B1) x height (H1)	mm	148.5 x 148.5	204 x 204	255 x 255	255 x 255	323 x 323
Required mounting cut-out (B2 x H2)	mm	124 x 124	177 x 177	224 x 224	224 x 224	292 x 292
Depth (T1)	mm	16	24	25	25	25
Max. installation depth (T2)	mm	58.5	90	107	107	118.5
Air throughput, unimpeded airflow with standard chopped-fibre filter mat	m ³ /h	52	100	175	225	540
Air throughput, unimpeded airflow with pleated filter	m ³ /h	63	110	218	272	625
Air throughput with outlet filter, including standard chopped-fibre filter mat	m ³ /h	1 x 3238.200: 36	1 x 3239.200: 74	1 x 3240.200: 130	1 x 3240.200: 171	1 x 3243.200: 405
		2 x 3238.200: 46	2 x 3239.200: 84	2 x 3240.200: 159	2 x 3240.200: 200	2 x 3243.200: 475
Air throughput with outlet filter including pleated filter	m ³ /h	1 x 3238.200: 43	1 x 3239.200: 89	1 x 3240.200: 188	1 x 3240.200: 237	1 x 3243.200: 550
		2 x 3238.200: 54	2 x 3239.200: 98	2 x 3240.200: 207	2 x 3240.200: 261	2 x 3243.200: 600
Control interface (0 – 10 V/PWM input and tachometer signal output)		–	–	■	■	■
Fan		Diagonal/EC motor				
Noise pressure level	dB (A)	49	53	47	52	63
Operating temperature	°C	-20...+55	-20...+55	-25...+55	-25...+55	-25...+55
Storage temperature	°C	-30...+70	-30...+70	-25...+70	-25...+70	-25...+70
Protection category (to IEC 60 529)		IP54 standard IP54 with pleated filter IP56 with hose-proof hood	IP54 standard IP55 with pleated filter IP56 with hose-proof hood			

Tab. 3: Technical specifications

Technical modifications reserved.

Technical specifications

EN

Fan-and-filter unit RAL 7035	Unit	Model No.			
		3244.500	3245.500	3245.510	3245.600*
Rated operating voltage	V Hz	200 - 240, 1~, 50/60	200 - 240, 1~, 50/60	100 - 130, 1~, 50/60	200 - 240, 1~, 50/60
Rated current max.	A	0.7	1.33	2.1	1.33
Rated operating voltage (active power)	W	80	165	165	165
Pre-fuse T	A	6	4	6	4
Dimensions					
Width (B1) x height (H1)	mm	323 x 323	323 x 323	323 x 323	323 x 323
Required mounting cut- out (B2 x H2)	mm	292 x 292	292 x 292	292 x 292	292 x 292
Depth (T1)	mm	25	25	25	25
Max. installation depth (T2)	mm	130.5	130.5	130.5	130.5
Air throughput, unimped- ed airflow with standard chopped-fibre filter mat	m ³ /h	700	890	890	890
Air throughput, unimped- ed airflow with pleated filter	m ³ /h	855	1125	1125	1125
Air throughput with outlet filter, including standard chopped-fibre filter mat	m ³ /h	1 x 3243.200: 485	1 x 3243.200: 630	1 x 3243.200: 630	1 x 3243.200: 630
		2 x 3243.200: 570	2 x 3243.200: 770	2 x 3243.200: 770	2 x 3243.200: 770
Air throughput with outlet filter including pleated filter	m ³ /h	1 x 3243.200: 700	1 x 3243.200: 930	1 x 3243.200: 930	1 x 3243.200: 930
		2 x 3243.200: 800	2 x 3243.200: 1060	2 x 3243.200: 1060	2 x 3243.200: 1060
Control interface (0 – 10 V/PWM input and tacho signal output)		■	■	■	■
Fan		Diagonal/EC motor			
Noise pressure level	dB (A)	64	72	72	72
Operating temperature	°C	-25...+55	-25...+55	-25...+55	-25...+55
Storage temperature	°C	-25...+70	-25...+70	-25...+70	-25...+70
Protection category (to IEC 60 529)		IP54 standard IP55 with pleated filter IP56 with hose- proof hood	IP51 standard IP52 with pleated filter IP56 with hose-proof hood		

Tab. 4: Technical specifications

Technical modifications reserved.

* EMC version

11 Cut-out/drilling dimensions

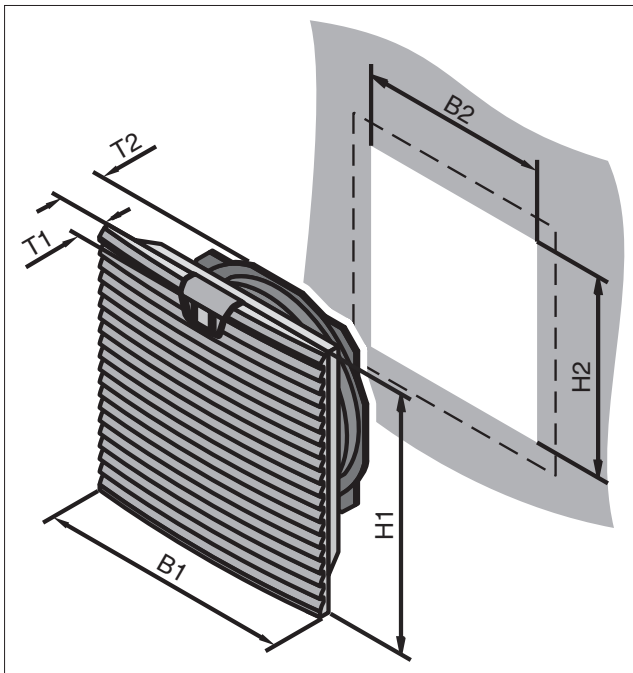


Fig. 10: Cut-out dimensions

B = width, T = depth

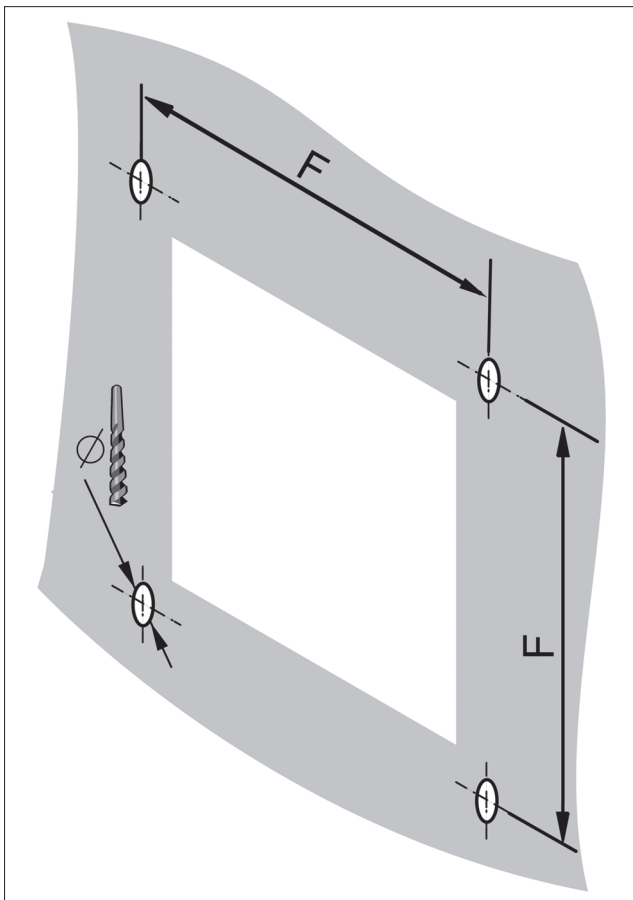


Fig. 11: Drilling pattern



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
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. 5: Cut-out dimensions

Model No.	Ø mm	F mm	Nm
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. 6: Drilling dimensions and tightening torques

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

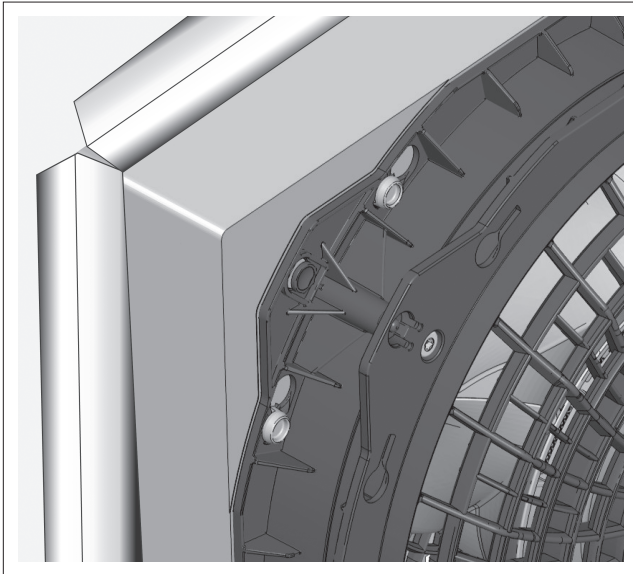


Fig. 12: EMC contact foils



Note:
EMC protection can only be guaranteed when using original Rittal EMC filter media (Model No. 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.
3245.6xx	G3	ISO coarse 50%	5 pc(s).	3243.066

Tab. 7: 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.
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. 8: 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/3245.xxx	G4	ISO coarse 70%	5 pc(s).	3173.120

Tab. 9: 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.
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. 10: 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.
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/3245.xxx	IP54	2 pc(s).	3243.020

Tab. 11: 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.
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
3245.xxx	350 x 480 x 160	NEMA 1, NEMA 12, NEMA 3, NEMA 3R	1 pc(s).	3245.080

Tab. 12: Hose-proof hoods

14 Connection diagrams

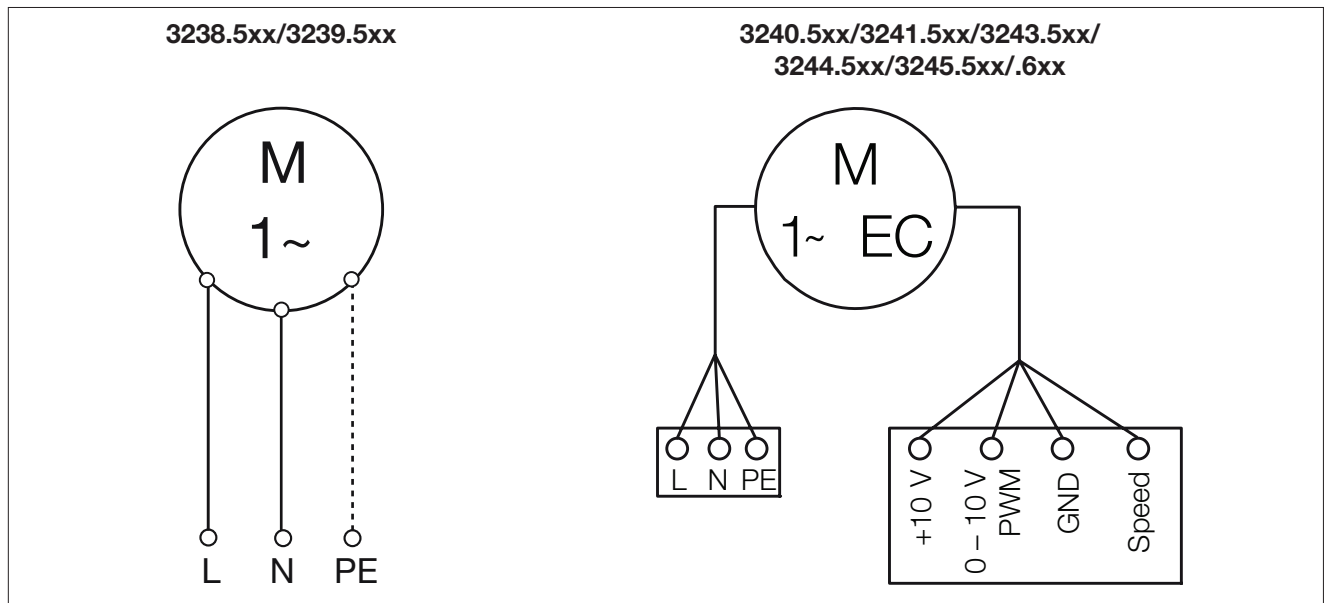


Fig. 13: Connection diagrams

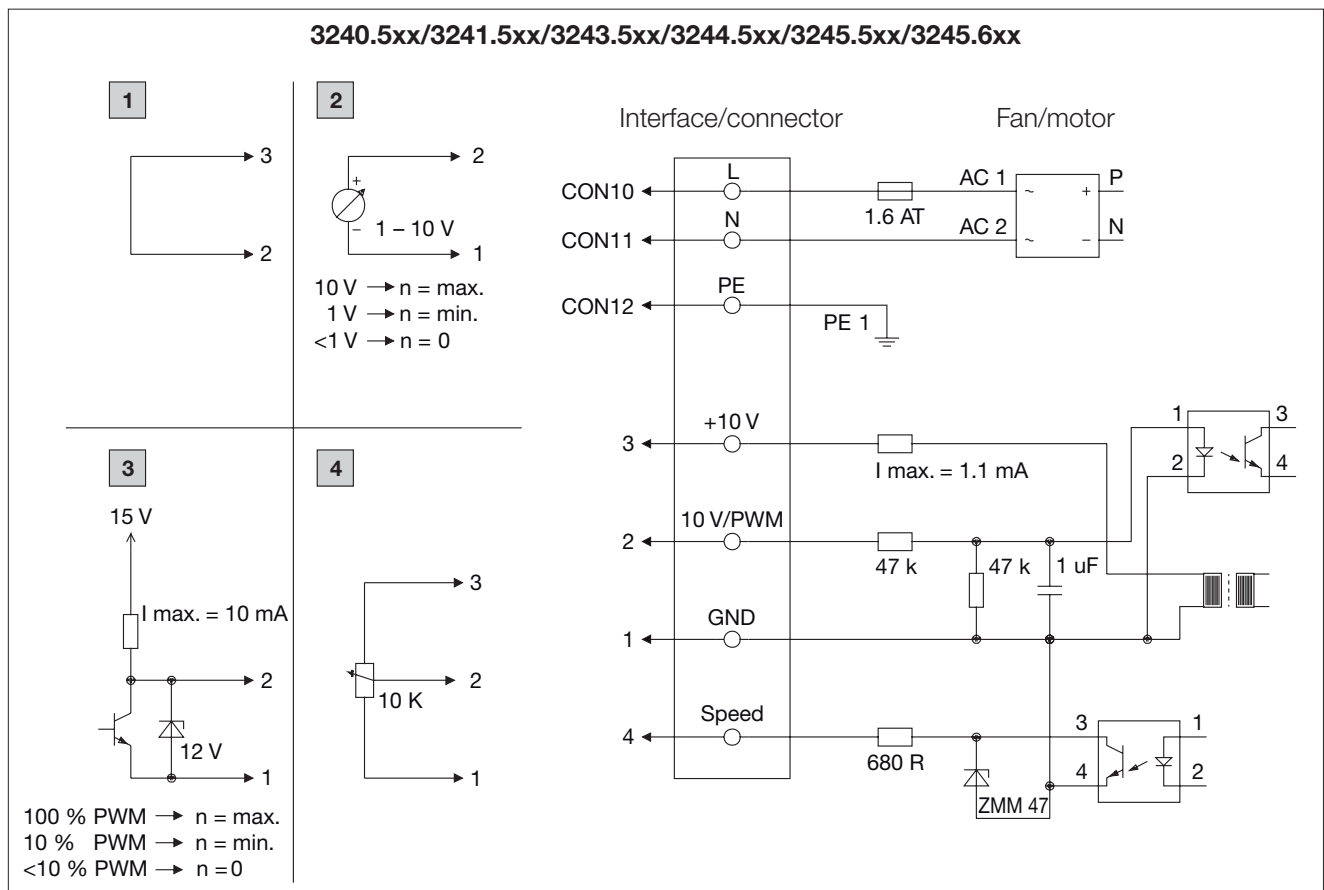


Fig. 14: Connection diagram 3240.5xx/3241.5xx/3243.5xx/3244.5xx/3245.5xx/3245.6xx

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

Connection	Function/Assignment
L	Power supply
N	Neutral conductor
PE	PE conductor
GND	GND connection of the control interface
0...10 V/PWM	Control input 0...10 V or PWM, galvanically isolated, impedance 100 kΩ
+10 V	Voltage output 10 V max. 1.1 mA, galvanically isolated, not short circuit-protected
Speed	Speed output Open Collector, 1 pulse per revolution, galvanically isolated

Tab. 13: Explanations to fig. 14

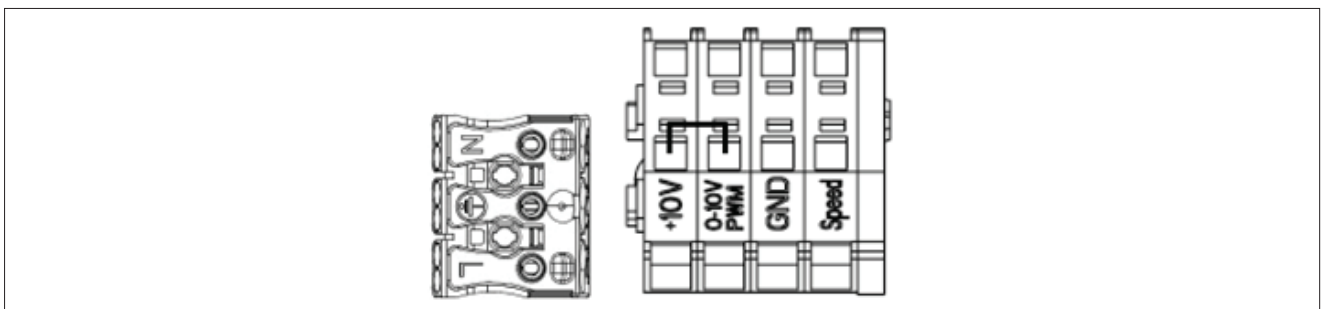


Fig. 15: Connection clamps

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

Rittal GmbH & Co. KG
Auf dem Stützelberg
35745 Herborn

Frank Himmelhuber, Bereichsleiter FuE
Executive Vice President R&D

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.



A large grid of graph paper for taking notes, consisting of 20 columns and 30 rows of small squares.

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