

Rittal – TopTherm Filter Fans



ENCLOSURES

POWER DISTRIBUTION

CLIMATE CONTROL

IT INFRASTRUCTURE

SOFTWARE & SERVICES



FRIEDHELM LOH GROUP

**More pressure.
Higher air flow rates.**



Installation without tools

- Snap-in mounting for easy installation
- Simple reversal of the air flow direction by turning the fan module
- Flexible positioning of the power connection
- Spring clamp terminals for electrical connection without tools
- Louvered grille latch for fast filter mat replacement without tools

Efficient technology

- Air throughput from 12 - 424 cfm (20 to 700 m³/h)
- New diagonal fan technology for greater pressure stability and constant air flow when installed, even with a contaminated filter mat
- Reduced installation depth
- Flow-optimized air routing
- Extended service life of filter mats and thus longer maintenance intervals
- UL Type 12 (IP 54) out of the box
- All fan models available with EMC shielding

Air routing

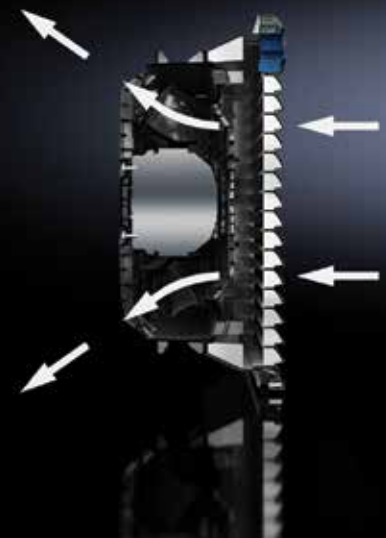
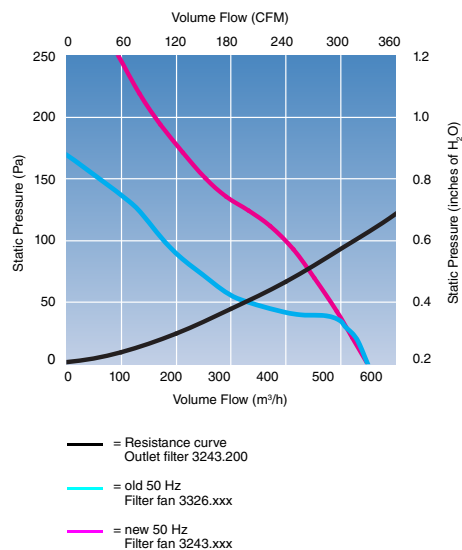
- Intelligent combination of radial and axial fan technology for most fan models
- Air flow spreads diagonally from the fan, promoting even air distribution throughout the enclosure

Additional environmental protection

- Hose-proof hoods prevent the entry of water
- Ratings of up to UL Type 4X are achieved with addition of hood



Performance chart —
new vs. old filter fan design



Filter Fan



Configuration:

Filter fan unit ready for installation, including filter mats, self adhesive mounting template and instructions.

Protection Ratings:

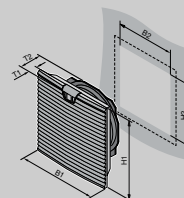
NEMA 12/IP 54 standard
IP 55 with additional fine filter mat
NEMA 3R/4/4X/IP 56 with hose-proof hood

Property Rights:

German Registered Design
No. M 93 04 846

Certifications:

CE - 3527009
UL/cUL - E76083



B = Width
T = Depth

Air Displacement: 12 - 39 cfm (20 - 66 m³/h)

Part No. (Filter Fan and Filter Unit)	3237.100	3237.110	3237.124	3238.100	3238.110	3238.124
Part No. (Filter Fan and Filter Unit - EMC)	3237.600	-	-	3238.600	-	-
Rated operating voltage V, Hz	230, 50/60	115, 50/60	24 (DC)	230, 50/60	115, 50/60	24 (DC)
Dimensions inches (mm)	B1/H1	5 x 5 (116.5 x 116.5)		6 x 6 (148.5 x 148.5)		
	B2/H2	4 x 4 (92 x 92)		5 x 5 (124 x 124)		
	T1	1 (16)		1 (16)		
Max. installation depth mm	T2	2 (43)		2 (58.5)		
Air throughput, unimpeded air flow	12/15 cfm (20/25 m ³ /h)		12 cfm (20 m ³ /h)	32/39 cfm (55/66 m ³ /h)		32 cfm (55 m ³ /h)
Air throughput with outlet filter including standard filter mat cfm	1 x 3237.200: 9/11 cfm (15/18 m ³ /h)			1 x 3238.200: 25/29 cfm (43/50 m ³ /h) 2 x 3238.200: 27/33 cfm (46/56 m ³ /h)		
Fan motor	Self-starting shaded pole motor		DC motor	Self-starting shaded pole motor		DC motor
Rated current	0.065 A/0.052 A	0.12 A/0.1 A	0.125 A	0.12 A/0.11 A	0.24 A/0.22 A	0.23 A
Power consumption	11 W/9 W		3 W	19 W/18 W		5.5 W
Pre-fuse	2 A					
Noise level	38/43 dB (A)		38 dB (A)	46/49 dB (A)		46 dB (A)
Operating temperature range F° (C°)	5 to 131° F (-15 to +55° C)					
Storage temperature range F° (C°)	-22 to 158° F (-30 to +70° C)					
Color	RAL 7035					
Part No. outlet filter	3237.200			3238.200		
Part No. outlet filter - EMC	3237.060			3238.060		

Accessories	PU		
Filter mats	5	3321.700	3322.700
Filter mats - EMC	5	3237.066	3238.066
Fine filter mats	5	-	3238.055
Hose-proof hood - 304 stainless steel	1	3237.080 ¹⁾	3238.080 ²⁾
Hose-proof hood - RAL 7035	1	3237.085 ¹⁾	3238.085 ³⁾
Blanking cover	1	3237.020	3238.020
Thermostat	1	3110.000	
Digital temperature display	1	3114.200	
Hygrostat	1	3118.000	
Speed control	1	3120.200	

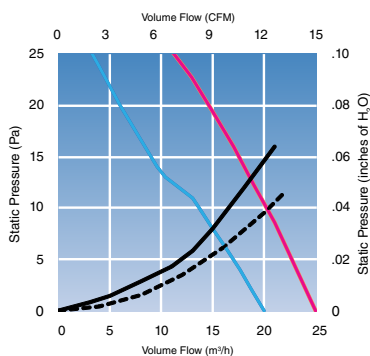
Special voltages and colors available on request. We reserve the right to make technical modifications. ¹⁾UL type 3R ²⁾UL type 4X ³⁾UL type 3R/4

Air Displacement: 62 - 71 cfm (105 - 120 m³/h)

Part No. (Filter Fan and Filter Unit)	3239.100		3239.110		3239.124	
Part No. (Filter Fan and Filter Unit - EMC)	3239.600		-		-	
Rated operating voltage V, Hz	230, 50/60		115, 50/60		24 (DC)	
Dimensions inches (mm)	B1/H1	8 x 8 (204 x 204)				
	B2/H2	7 x 7 (177 x 177)				
	T1	1 (24)				
Max. installation depth inches (mm)	T2	3.5 (90)				
Air throughput, unimpeded air flow	62/71 cfm (105/120 m ³ /h)				62 cfm (105 m ³ /h)	
Air throughput with outlet filter including standard filter mat	1 x 3239.200: 51/59 cfm (87/100 m ³ /h) 2 x 3239.200: 55/64 cfm (93/108 m ³ /h) 1 x 3240.200: 58/65 cfm (98/111 m ³ /h)					
Diagonal fan	Self-starting shaded pole motor				DC motor	
Rated current	0.12 A/0.11 A		0.24 A/0.22 A		0.23 A	
Power consumption	19 W/18 W				5.5 W	
Pre-fuse	2 A					
Noise level	46/49 dB (A)				46 dB (A)	
Operating temperature range F° (C°)	-5 to 131° F (-15 to +55° C)					
Storage temperature range F° (C°)	-22 to 158° F (-30 to +70° C)					
Color	RAL 7035					
Part No. outlet filter	3239.200					
Accessories	PU					
Filter mats	5		3171.100			
Filter mats – EMC	5		3239.066			
Fine filter mats	5		3181.100			
Hose-proof hood - 304 stainless steel	1		3239.080 ¹⁾			
Hose-proof hood - RAL 7035	1		3239.085 ²⁾			
Blanking cover	1		3239.020			
Thermostat	1		3110.000			
Digital temperature display	1		3114.200			
Hygrostat	1		3118.000			
Speed control	1		3120.200			

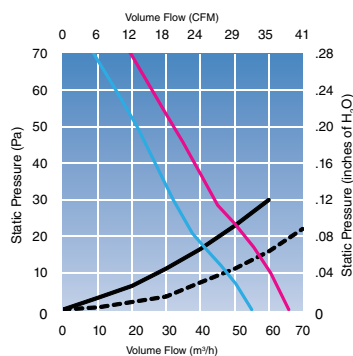
Special voltages and colors available on request. We reserve the right to make technical modifications. ¹⁾ UL type 4X ²⁾ UL type 3R/4

Performance chart 3237.xxx



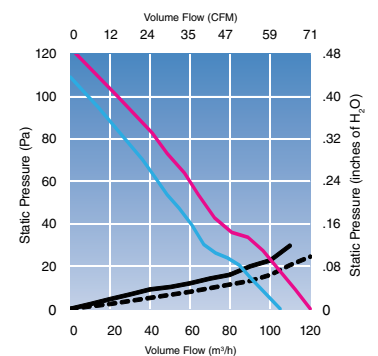
- Performance Curve 1 x 3237.200
- - - Performance Curve 2 x 3237.200
- 3237.xxx 50 Hz
- 3237.xxx 60 Hz

Performance chart 3238.xxx



- Performance Curve 1 x 3238.200
- - - Performance Curve 2 x 3238.200
- 3238.xxx 50 Hz
- 3238.xxx 60 Hz

Performance chart 3239.xxx



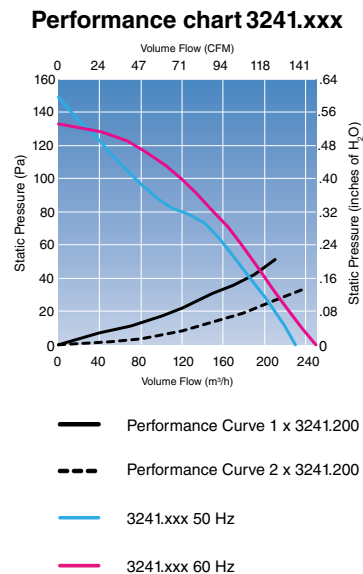
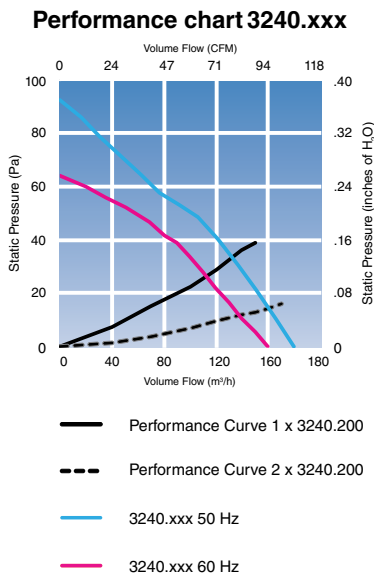
- Performance Curve 1 x 3239.200
- - - Performance Curve 2 x 3239.200
- 3239.xxx 50 Hz
- 3239.xxx 60 Hz

Filter Fan

Air Displacement: 106 - 147 cfm (180 - 250 m³/h)

Part No. (Filter Fan and Filter Unit)	3240.100	3240.110	3240.124	3241.100	3241.110	3241.124
Part No. (Filter Fan and Filter Unit - EMC)	3240.600	–	–	3241.600	–	–
Rated operating voltage V, Hz	230, 50/60	115, 50/60	24 (DC)	230, 50/60	115, 50/60	24 (DC)
Dimensions inches (mm)	10 x 10 (255 x 255)					
	9 x 9 (224 x 224)					
	.98 (25)					
Max. installation depth inches (mm)	4.21 (107)					
Air throughput, unimpeded air flow	106/94 cfm (180/160 m ³ /h)		106 cfm (180 m ³ /h)	135/147 cfm (230/250 m ³ /h)		135 cfm (230 m ³ /h)
Air throughput with outlet filter including standard filter mat	1 x 3240.200: 81/71 cfm (138/121 m ³ /h) 2 x 3240.200: 97/82 cfm (165/140 m ³ /h) 1 x 3243.200: 97/82 cfm (165/140 m ³ /h)			1 x 3240.200: 108/120 cfm (183/205 m ³ /h) 2 x 3240.200: 119/135 cfm (203/230 m ³ /h) 1 x 3243.200: 119/135 cfm (203/230 m ³ /h)		
Diagonal fan	Self-starting shaded pole motor		DC motor	Self-starting shaded pole motor		DC motor
Rated current	0.21 A/0.19 A	0.42 A/0.38 A	0.43 A	0.26 A/0.24 A	0.52 A/0.48 A	0.78 A
Power consumption	35 W/34 W		11 W	40 W/42 W		19 W
Pre-fuse	2 A	4 A	2 A	4 A		2 A
Noise level	51/46 dB (A)		51 dB (A)	54/56 dB (A)		54 dB (A)
Operating temperature range F° (C°)	-22 to 131° F (-30 to +55° C)					
Storage temperature range F° (C°)	-22 to 158° F (-30 to +70° C)					
Color	RAL 7035					
Part No. outlet filter	3240.200					
Accessories	PU					
Filter mats	5		3172.100			
Filter mats – EMC	5		3240.066			
Fine filter mats	5		3182.100			
Hose-proof hood - 304 stainless steel	1		3240.080 ¹⁾			
Hose-proof hood - RAL 7035	1		3240.085 ²⁾			
Blanking cover	1		3240.020			
Thermostat	1		3110.000			
Digital temperature display	1		3114.200			
Hygrostat	1		3118.000			
Speed control	1		3120.200			

Special voltages and colors available on request. We reserve the right to make technical modifications. ¹⁾ UL type 4X ²⁾ UL type 3R/4



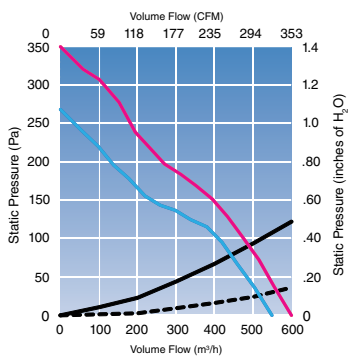
Air Displacement: 323 - 453 cfm (550 - 770 m³/h)

Part No. (Filter Fan and Filter Unit)	3243.100	3243.110	3244.100	3244.110	3244.140
Part No. (Filter Fan and Filter Unit - EMC)	3243.600	–	3244.600	–	–
Rated operating voltage V, Hz	230, 50/60	115, 50/60	230, 50/60	115, 50/60	400/460, 3~, 50/60
Dimensions inches (mm)	B1/H1	13 x 13 (323 x 323)			
	B2/H2	12 x 12 (292 x 292)			
	T1	1 (25)			
Max. installation depth inches (mm)	T2	4½ (118.5)	5 (130.5)		
Air throughput, unimpeded air flow	323/353 cfm (550/600 m ³ /h)		412/424 cfm (700/770 m ³ /h)		
Air throughput with outlet filter including standard filter mat	1 x 3243.200: 259/289 cfm (440/490 m ³ /h) 2 x S243.200: 300/330 cfm (510/560 m ³ /h)		1 x 3243.200: 320/359 cfm (544/610 m ³ /h) 2 x 3243.200: 371/406 cfm (630/690 m ³ /h)		
Diagonal fan	1~ capacitor motor				Rotary current motor
Rated current	0.37 A/0.39 A	0.78 A/0.80 A	0.43 A/0.6 A	0.9 A/1.25 A	0.17 A/0.21 A
Power consumption	70 W/87 W	75 W/90 W	95 W/135 W	100 W/145 W	93 W/140 W
Pre-fuse	4 A	6 A	4 A	6 A	Motor circuit-breaker
Noise level	59/61 dB (A)		65/66 dB (A)		
Operating temperature range	-22 to 131° F (-30 to +55° C)				
Storage temperature range	-22 to 158° F (-30 to +70° C)				
Color	RAL 7035				
Part No. outlet filter	3243.200				
Part No. outlet filter – EMC	3243.060	–	3243.060	–	–

Accessories	PU	
Filter mats	5	3173.100
Filter mats – EMC	5	3243.066
Fine filter mats	5	3183.100
Hose-proof hood - 304 stainless steel	1	3243.080 ¹⁾
Hose-proof hood - RAL 7035	1	3243.085 ²⁾
Blanking cover	1	3243.020
Thermostat	1	3110.000
Digital temperature display	1	3114.200
Hygrostat	1	3118.000
Speed control	1	3120.200

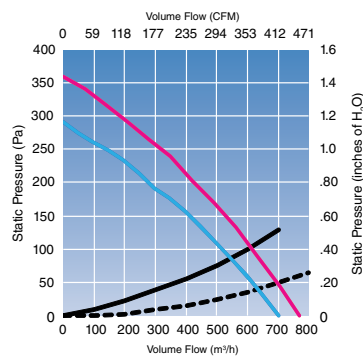
Special voltages and colors available on request. We reserve the right to make technical modifications. ¹⁾ UL type 4X ²⁾ UL type 3R/4

Performance chart 3243.xxx



- Performance Curve 1 x 3243.200
- - - Performance Curve 2 x 3243.200
- 3243.xxx 50 Hz
- 3243.xxx 60 Hz

Performance chart 3244.xxx



- Performance Curve 1 x 3244.200
- - - Performance Curve 2 x 3244.200
- 3244.xxx 50 Hz
- 3244.xxx 60 Hz

Accessories



Hose-proof hoods

For filter fan units/outlet filters

When the hose-proof hood is mounted above the filter fan unit or outlet filter a rating of IP 56 (UL 4X) to EN 60 529/10.91 is achieved. Particularly suitable for use in the food industry.

Material:

Stainless steel
Painted steel RAL 7035 (light gray)
Gasket: silicone, compliant with FDA 21 CFR 177.2600

Protection Ratings:

In conjunction with the filter fan units/outlet filters, UL Type 3R, 4 or 4X is met.
UL and cUL recognized

UL file: E76083

For	Dimensions inches (mm)	Part No. Stainless	Part No. RAL 7035
3237...	9 x 6 x 2 (230 x 150 x 40)	3237.080¹⁾	3237.085¹⁾
3238...	10 x 7 x 2 (245 x 176 x 55)	3238.080⁹⁾	3238.085²⁾
3239...	13 x 9 x 2 (33 x 233 x 55)	3239.080⁹⁾	3239.085²⁾
3240, 3241...	15 x 11 x 3 (390 x 282 x 85)	3240.080⁹⁾	3240.085²⁾
3243, 3244...	19 x 14 x 4 (480 x 350 x 110)	3243.080⁹⁾	3243.085²⁾

¹⁾UL Type 3R

²⁾UL Type 3R/4

⁹⁾UL Type 4X



Outlet filters

For ventilation by convection, an outlet filter can be installed in the upper and lower sections of the modular enclosure.

Material:

ABS, material resistance to UL 94-V0

Color:

RAL 7035 (light gray)

Note:

EMC version must use EMC spare filter mat for replacement to ensure EMC shielding

Dimensions inches (mm)	Part No. RAL 7035	Part No. EMC
5 x 1 (116 x 16)	3237.200	3237.060
6 x 1 (148 x 16)	3238.200	3238.060
8 x 1 (204 x 24)	3239.200	3239.060
10 x 1 (255 x 25)	3240.200	3240.060
13 x 1 (323 x 25)	3243.200	3243.060

Special colors on request

Protection Ratings:

UL, cUL recognized

UL file: E76084

Configuration:

Outlet filter including standard filter mat.



Replacement filter mats

For filter fans

Made of random filter non-woven polyester. Temperature resistant up to 212° F (100° C), self-extinguishing, Class F1 according to DIN 53 538. Provides reliable filtration of almost all types of dust down to 10 micron grain size.

Material:

Synthetic fiber.

For filter fan units	H x W x D inches (mm)	PU	Part No.
3321 and 3237...	4 x 4 x 0.4 (89 x 89 x 10)	5	3321.700
3322 and 3238...	5 x 5 x 0.5 (120 x 120 x 12)	5	3322.700
3323 and 3239...	7 x 7 x 0.7 (173 x 173 x 17)	5	3171.100
3324, 3325, 3240 and 3241...	9 x 9 x 0.7 (221 x 221 x 17)	5	3172.100
3326 and 3243...	11 x 11 x 0.7 (289 x 289 x 17)	5	3173.100
3327 and 3244...	11 x 11 x 0.4 (289 x 289 x 10)	5	3327.700

Accessories

Fine filter mats

For filter fans

Used for extremely fine dust with particle sizes below 10 microns. Made of random filter non-woven polyester. Temperature resistant up to 212° F (100° C), self-extinguishing, Class F1 according to DIN 53 438. Anticipate higher air resistance when fine filter mats are used.

Installation note:

Place fine filter mat behind standard filter mat, closer to the fan motor.

For filter fan units/ outlet filters	H x W x D inches (mm)	PU	Part No.
3238...	4.7 x 4.7 x 0.5 (120 x 120 x 12)	5	3238.055
3323 ... /3239	7 x 7 x 0.5 (173 x 173 x 12)	5	3181.100
3240 ... /3241 ... 3324 ... /3325 ...	9 x 9 x 0.5 (221 x 221 x 12)	5	3182.100
3243. ... /3244. ... 3326. ... /3327. ...	11 x 11 x 0.5 (289 x 289 x 12)	5	3183.100

Material:

Synthetic fiber.
Clean air side: closed structure.



Replacement filter mats

For EMC shielded filter fans

Supports the EMC shielding properties of Rittal EMC filter fans. Made of random filter non-woven polyester and additional copper coating. Temperature resistant up to 212° F (100° C), self-extinguishing, Class F1 according to DIN 53 428. Provides reliable filtration for almost all types of dust down to 10 micron grain size.

Material:

Copper-nickel coated synthetic fiber.
Contaminated side: closed structure

For filter fan	Filter class according to DIN EN 779	PU	Part No.
3237.6xx, 3237.060	G2	5	3237.066
3238.6xx, 3238.060	G2	5	3238.066
3239.6xx, 3239.060	G3	5	3239.066
3240.6xx, 3241.6xx, 3240.060	G3	5	3240.066
3243.6xx, 3243.060, 3244.6xx, 3245.6xx	G3	5	3243.066



Blanking cover

If existing mounting cut-outs for fan or outlet filters need to be closed to achieve a higher protection category, the filter mat of the fan or outlet filter can simply be replaced with a blanking cover; welding or other mechanical modification of the enclosure is not necessary.

Material:

Plastic

Protection category:

NEMA 12/IP 54

For filter fan	Part No.
3237. . . .	3237.020
3238. . . .	3238.020
3239. . . .	3239.020
3240. . . . /3241. . . .	3240.020
3243. . . . /3244. . . . 3245. . . .	3243.020



Speed control

Temperature-dependent speed control for Rittal fan and filter units. Dual rated 115/230 V, 50/60 Hz AC for noise reduction and to save energy in part-load operation.

Technical Specifications:

- For mounting on 35 mm support rail to DIN EN 50 022
- Rated operating voltage: 230 V (AC)/115 V (AC)
- Setting range: +68 to +131° F (+20 to +55° C)
- Phase cross-over controller

PU	Part No.
1	3120.200

- Maximum fan output: 300 W
- Dimensions inches (mm): 4.1 x 3.5 x 2.4 (105 x 91 x 60)

Protection Rating:

- UL file: E203342



Accessories



Enclosure thermostat

The enclosure thermostat is particularly suitable to control filter fans but can also be used to signal and monitor the temperature inside an enclosure.

Technical Specifications:

- Bi-metal sensor acts as a temperature-sensitive element with thermal feedback
- Contact: 1 pole, spring loaded switch element
- Permissible contact load:
Category 5 – 3 (heating)
AC 10 (4)¹⁾ A,
DC = 30 W
Category 5 – 4 (cooling)
AC 5 (4)¹⁾ A,
DC = 30 W
¹⁾ = Inductive load at $\cos \varphi = 0.6$
- Setting range 41 to 140° F (+5 to +60° C)
- Weight approximately 4 oz (105 grams)
- Dimensions 3 x 3 x 1" (71 x 71 x 33 mm)
- Switching difference approximately 1 K ± 0.8 K
- A broad voltage spectrum, just one model covers 24 to 230 V.
- Time-saving connection technique using a terminal strip with a screw connection from the outside.

Voltage	Part No.
230/115/60/48/24 V AC	3110.000
60/48/24 V DC	

- Flexible mounting on a vertical or horizontal 1" (35 mm) support rail to EN 50 022, and snap fastening in the TS/ES enclosure section using the supplied adaptor.

Protection Ratings:

UL, cUL recognized, CE, VDE
UL file: E174004



Hygrostat

The hygrostat switches on the fan when a preset relative humidity level in the enclosure is exceeded. This maintains the relative humidity in the enclosure above the dew point and prevents condensation in the cabinet or on components.

Technical Specifications:

- Contact population: Single-pole change-over contact as a quick-break contact
- Permissible contact load:
AC ~ 5 (0.2)¹⁾ A
DC = maximum 20 W
¹⁾ = Inductive load at $\cos \varphi = 0.6$
- Setting range 50 – 100% relative humidity
- Weight approximately 4 oz (100 g)
- Dimensions 3 x 3 x 1" (71 x 71 x 33.5 mm)
- Switching difference approximately 4%
- A broad voltage range, only one model covers 24 to 230 V.
- Time-saving connection technique using a terminal strip with a screw connection from the outside.
- Flexible mounting on a vertical or horizontal 1" (35 mm) support rail to EN 50 022, and snap fastening in the TS/ES enclosure section using the supplied adaptor.

Voltage	Part No.
24 - 230 V (AC/DC)	3118.000

Filter Fan Cross Over

Old vs. New Design – Conversion Made Easy

As with all products, Rittal continuously implements design improvements and new technology. Our entire line of filter fans has been updated to a new design and, because they have been engineered to fit the same cut-outs as our prior fan design, they are easily integrated into your application. The table below makes it easy to transition from the prior design to the new one.



Air throughput unimpeded airflow		12/15 cfm (20/25 m³/h)	32/39 cfm (55/66 m³/h)	62/71 cfm (105/120 m³/h)	106/94 cfm (180/160 m³/h)	135/147 cfm (230/250 m³/h)	323/353 cfm (550/600 m³/h)	412/424 cfm (700/770 m³/h)
Cut-out dimensions inches (mm)		4 x 4 (92 x 92)	5 x 5 (124 x 124)	7 x 7 (177 x 177)	9 x 9 (224 x 224)		12 x 12 (292 x 292)	
24 V	new	3237.124	3238.124	3239.124	3240.124	3241.124	–	–
	old	3321.027	3322.027	3323.027	3324.027	3325.027	–	–
230 V	new	3237.100	3238.100	3239.100	3240.100	3241.100	3243.100	3244.100
	old	3321.107	3322.107	3323.107	3324.107	3325.107	3326.107	3327.107
115 V	new	3237.110	3238.110	3239.110	3240.110	3241.110	3243.110	3244.110
	old	3321.117	3322.117	3323.117	3324.117	3325.117	3326.117	3327.117
400 V/460 V	new	–	–	–	–	–	–	3244.140
	old	–	–	–	–	–	–	3327.147
EMC fan and filter unit, 230 V	new	3237.600	3238.600	3239.600	3240.600	3241.600	3243.600	3244.600
	old	3321.607	3322.607	3323.607	3324.607	3325.607	3326.607	3327.607
Outlet filter	new	3237.200	3238.200	3239.200	3240.200		3243.200	
	old	3321.207	3322.207	3323.207	3325.207		3326.207	
EMC outlet filter	new	3237.060	3238.060	3239.060	3240.060		3243.060	
	old	3321.267	3322.267	3323.267	3325.267		3326.267	
Hose-proof hood - carbon	new	3337.085	3238.085	3239.085	3240.085		3243.085	
	old	3321.835	3322.835	3323.835	3324.835		3326.835	
Hose-proof hood - stainless	new	3237.080	3238.080	3239.080	3240.080		3243.080	
	old	3321.800	3322.800	3323.800	3324.800		3326.800	
Blanking cover	new	3237.020	3238.020	3239.020	3240.020		3243.020	
	old	–	–	–	–	–	–	–
Standard filter mat (IP 54)	new	3321.700	3322.700	3171.100	3172.100		3173.100	
	old	3321.700	3322.700	3171.100	3172.100		3173.100	3327.700
EMC filter mat	new	3237.066	3238.066	3239.066	3240.066		3243.066	
	old	–	–	–	–		–	
Fine filter mat (IP 55)	new	–	3238.055	3181.100	3182.100		3183.100	
	old	–	–	3181.100	3182.100		3183.100	

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Rittal Corporation

1 Rittal Place • Urbana Ohio 43078 • USA
Woodfield Corporate Center • 425 North Martingale Road, Suite 400 • Schaumburg Illinois 60173 • USA
Phone: 937-399-0500 • Fax: 800-477-4003 • Toll-free: 800-477-4000
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