Everyone talks about the future, but Rittal helps shape it – and that includes the field of climate control. Development work focuses on the holistic **protection of process control with the minimum possible energy consumption.** Modern cooling units with favourable operating ratios and **high tech recooling systems** open up brand new perspectives for energy-saving, efficient cooling of electronic components and machines. This is crucial to the availability and reliability of production systems and IT technology.
For this reason, Rittal collaborates closely with you to develop customised climate control concepts.

RITTAL®

System Climate Control

Cooling units — from page 630

Recooling systems — from page 654

Heat exchangers — from page 684

Fan-and-filter units — from page 689

Climate control tailored to enclosures — from page 696

Heaters — from page 708

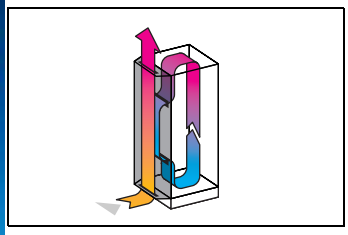
Accessories for System Climate Control — from page 710

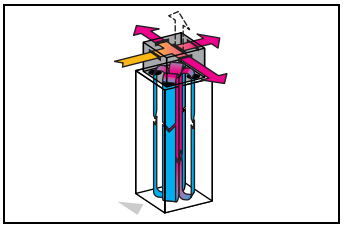
Liquid cooling — from page 726

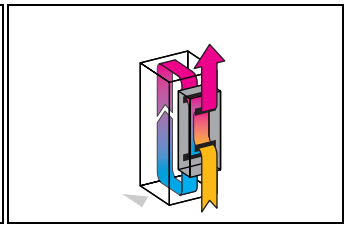
Features

Rittal System Climate Control offers holistic process protection. This includes the cooling of sensitive electronics in enclosures and cases for industrial process control, as well as server and network technology, regardless of the respective ambient conditions. But these are not isolated solutions – with Rittal, everything is interconnected. Perfectly linked and controlled cooling technology with eco-friendly, energy-efficient equipment.

Selection criteria







Modular climate control door concept
The unity of enclosure and cooling components achieves particularly effective cooling. Assembly time is eliminated. The investment costs for the complete unit offer exceptionally good value for money.

Roof-mounted cooling units
Requirement-oriented routing of cooling air in the internal circuit is possible, with up to four cold air outlet openings and the optional use of ducts. In the external circuit, the heated air is expelled to the rear, left and right, and optionally upwards. This facilitates bayed installation, and siting close to the wall.

Wall-mounted cooling units
Depending on the space and design requirements, internal mounting, partial internal mounting and external mounting are all possible. Thanks to large distances between the air intake and outlet openings, effective cold air throughput of the enclosure is achieved.

Intelligent control

The two controller variants for operational reliability offer a comprehensive range of functions.
Essential control electronics are well protected and cooled in the inner circuit.

Both variants have the following properties:
- Three voltage options: 115 V, 230 V, 400/460 V 3~
- Integral start-up delay and door limit switch function
- Icing protection function
- Monitoring of all motors
- Phase monitoring for three-phase units

Basic controller:
- Visualisation of the operating status via LED display
- Switching hysteresis: 5 K
- Floating fault signal contact in case of overtemperature
- Setpoint setting may be made externally via potentiometer

Comfort controller:
- Switching hysteresis: 2 – 10 K preset to 5 K
- System alarm, individually configurable for 2 floating fault signal contacts
- Visualisation of the current enclosure internal temperature and all system messages on the display
- Storage of all system states in the log file
- Optional extension card for integration into superordinate remote monitoring systems e. g. with CMC

Benefits:

- Useful cooling output from 225 W to 4000 W
- Extensive control and monitoring features, even with the basic version
- Three-phase cooling units support multiple voltages as standard
- Uniform, output-related, cross-system mounting cut-outs, to match TopTherm air/air and air/water heat exchangers
- Targeted, individual air routing
- No assembly work and low investment costs, thanks to the complete solution consisting of an enclosure and integral cooling unit[1)]
- May be integrated directly into TS 8 bayed enclosure suites[1)]

Important:

- Use a base/plinth of at least 100 mm height to ensure uninhibited air entry[1)]
- Avoid overloading the roof plate by using stays (see TS 8 system accessories)
- Air inlet and outlet openings in the internal and external circuit must not be obstructed.

1) Only for modular climate control door concept.

Features

Energy-efficient and resource-conserving

For those who place their trust in Rittal, value-added comes as standard. What is more, Rittal is a global trendsetter in the field of climate control.

A host of pioneering concepts bear witness to this fact: Rittal TopTherm cooling units are **equipped as standard with innovative RiNano-coating and**

integral electronic condensate evaporation.

RITTAL TOP THERM PLUS

Roof-mounted cooling units

Flexible output
Only 3 mounting cut-outs for 6 different output categories.

Targeted air routing in the enclosure
The heated air is centrally extracted. Targeted air occurs via optional channels in the four corners, depending on requirements.

Electronic condensate evaporation as standard
Condensate is effectively evaporated.

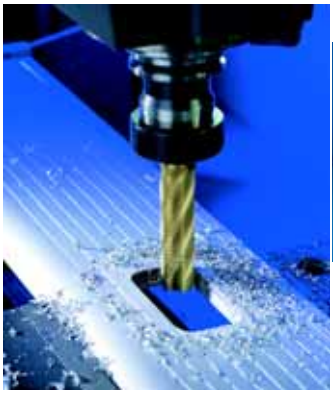
RITTAL TOP THERM PLUS

Wall-mounted cooling units

Wall-mounted cooling units – practical and stylish
Whether external, internal or partial internal mounting, optimum use is made of the available space.

Effective air routing inside the enclosure
Thanks to the large distance between air inlet and outlet in the internal circuit, optimum through-flow of the enclosure is ensured, thereby avoiding air short-circuits.

Electronic condensate evaporation as standard
Condensate is effectively evaporated.



Cooling units for special applications

Wall-mounted cooling units for machine tools with high acceleration rates and increased sensitivity to vibration.

Explosion-proof wall-mounted cooing units for Zone 22 (dust).

Roof-mounted cooling units – specifically for office applications with a considerably lower noise level.

Modular climate control concept

Features

Less is more! With only six cooling modules and eight door modules, we are now able to provide you with a virtually infinite variety of applications. The best cooling technology, complete and ready for use – without having to make mounting cut-outs. The existing sheet steel doors can simply be changed for the section doors with the cooling modules. These can also be exchanged or upgraded during operation.

RITTAL TOP THERM PLUS

New modular climate control concept

Modularity
Your individual climate control solution can be produced from the section door and the climate control module in just a few steps.

Infinite possibilities
Seamless baying and perfect integration. The TS base/plinth is required for operation.

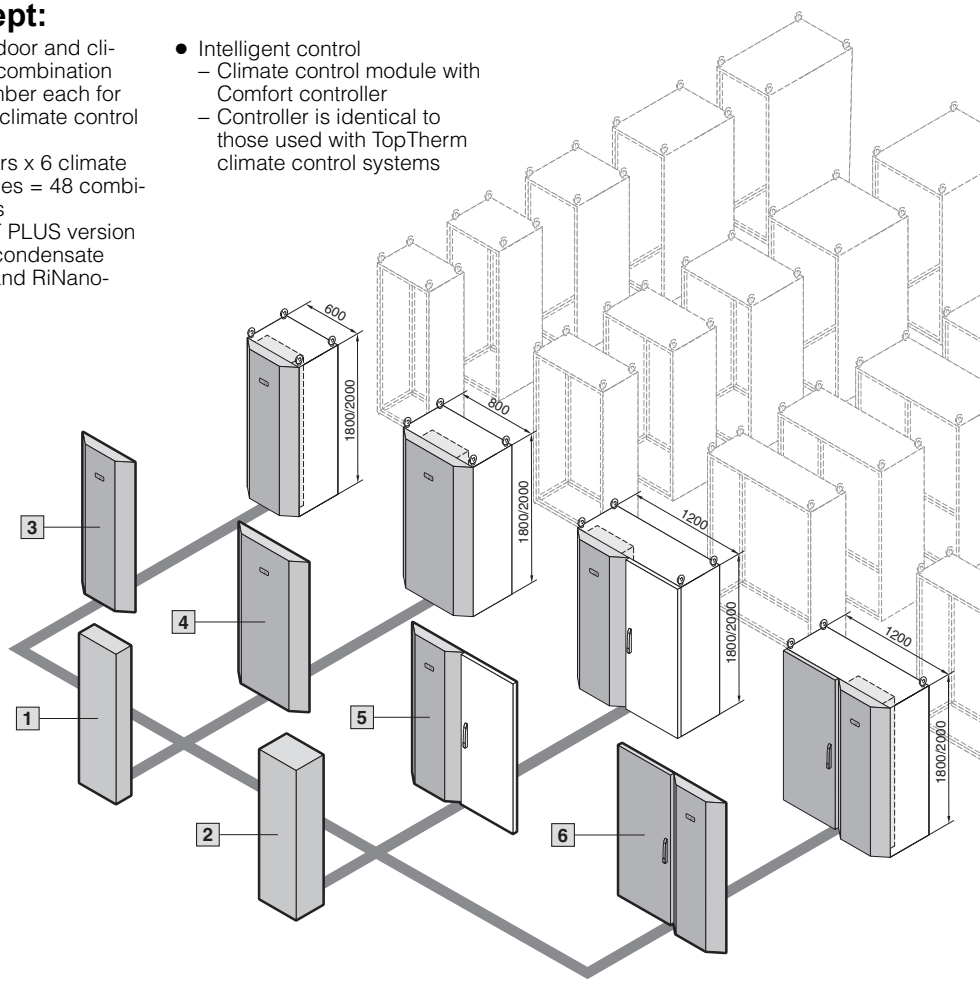
Comfort controller
Optimum function and control monitoring.

Your benefits:

- Modular design – for individual size, cooling power and voltage combinations
- Simple, fast mounting
- Service-friendly (front rack-mounted filter and removable cover)
- Quick delivery

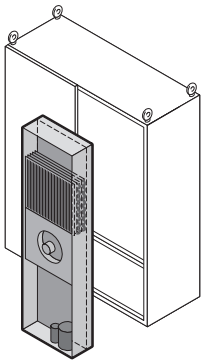
Our concept:

- TS 8 section door and climate control combination
- One item number each for the door and climate control module
- 8 section doors x 6 climate control modules = 48 combination options
- Standard RTT PLUS version with integral condensate evaporation and RiNano-coating
- Intelligent control
  – Climate control module with Comfort controller
  – Controller is identical to those used with TopTherm climate control systems



1 Climate control module, 1500 W useful cooling output
2 Climate control module, 2500 W useful cooling output
3 Section doors for installing climate control modules in 600 mm wide enclosures
4 Section doors for installing climate control modules in 800 mm wide enclosures
5 Section doors for installing climate control modules in 1200 mm wide enclosures; climate control module fitted on the left
6 Section doors for installing climate control modules in 1200 mm wide enclosures; climate control module fitted on the right, including lockable door on the left

Cooling module, useful cooling output 1500/2500 W



Supply includes:
Cooling module prepared for installation in section door, with RiNano coating and integrated condensation evaporation.

Also required:

Section door, fits TS 8 enclosures, 600, 800, 1200 mm widths and 1800, 2000 mm widths, see page 634.

Base/plinth, 100 or 200 mm high,
see page 893.

Detailed drawing,
see page 1276.

Performance diagrams,
available on the Internet.

New modular climate control concept

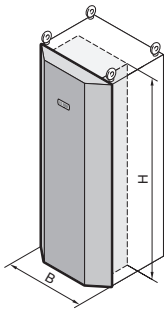
Model No. SK with Comfort controller		3307.700	3307.710	3307.740	3310.700	3310.710	3310.740
Rated operating voltage V, Hz		230, 1~, 50/60	115, 1~, 50/60	400, 3~, 50/ 460, 3~, 60	230, 1~, 50/60	115, 1~, 50/60	400, 3~, 50/ 460, 3~, 60
Useful cooling output $\dot{Q}_K$ to DIN 3168	**L 35 L 35**	**1500 W/1550 W**			**2500 W/2720 W**		**2500 W/2700 W**
	L 35 L 50	**950 W/1000 W**			**1620 W/1730 W**		**1900 W/1950 W**
Rated current max.		4.7 A/6.3 A	9.4 A/12.6 A	2.6 A/2.8 A	7.8 A/8.8 A	14.8 A/16.7 A	3.2 A/3.5 A
Start-up current		22.0 A/24.0 A	36.0 A/39.0 A	8.5 A/9.2 A	22.0 A/24.0 A	36.0 A/39.0 A	12.4 A/13.5 A
Pre-fuse gG		16.0 A/16.0 A	16.0 A/16.0 A	6.3 – 10.0 A[1]	16.0 A/16.0 A	20.0 A/20.0 A	6.3 – 10.0 A[1]
Power consumption P_{el} as per DIN 3168	L 35 L 35	910 W/1100 W	940 W/1130 W	850 W/910 W	1410 W/1620 W	1460 W/1670 W	1380 W/1580 W
	L 35 L 50	1100 W/1250 W	1140 W/1280 W	920 W/980 W	1580 W/1950 W	1630 W/2000 W	1620 W/1920 W
Refrigeration factor $\varepsilon = \dot{Q}_K/P_{el}$	L 35 L 35	1.6	1.6	1.7	1.7		1.8
Refrigerant		R134a, 700 g			R134a, 900 g		
Permissible operating pressure p. max.		28 bar					
Temperature and setting range		+20°C to +55°C					
Protection category to EN 60 529/09.2000	External circuit	IP 34					
	Internal circuit	IP 54					
Duty cycle		100 %					
Type of connection		Plug-in terminal strip					
Weight[2]		72 kg	72 kg	75 kg	74 kg	74 kg	76 kg
Colour		RAL 7035					
Air throughput of fans	External circuit	1100 m³/h			1100 m³/h		
	Internal circuit	520 m³/h			1100 m³/h		
Temperature control		Comfort controller (factory setting +35°C)					

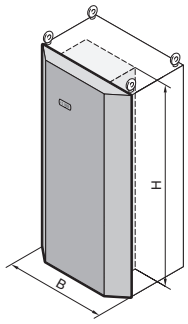
Accessories	Packs of		Page
Door-operated switch	1	4127.000	1030
Filter media	1	see accessories section door	634
SK bus system for Comfort controller	1	3124.100	717
RiDiag II including cables for Comfort controller	1	3159.100	1154
Interface card for Comfort controller	1	3124.200	716

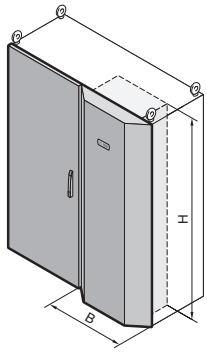
Special voltages available on request. We reserve the right to make technical modifications.
[1] Motor circuit-breaker
[2] Includes section door weight

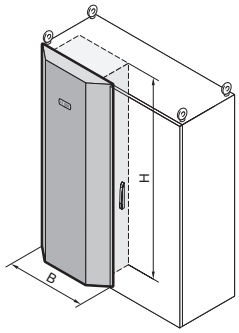
Accessories Page 710 **TS 8 enclosures** From page 142 **Configuration software** Page 1154

Section doors for installing cooling modules









Colour:
RAL 7035

Supply includes:
Section door unit without pre-fitted cooling module, including TS 8 hinges, door opening angle approx. 110°.

Note for 1200 mm wide TS 8 enclosures:
With the device positioned on the “right”, one pack consists of a section door for installing in the right-hand half of the enclosure plus a special lockable door for the left-hand half.

With the device positioned on the “left”, one pack consists of a section door for installing in the left-hand half of the enclosure. The existing lockable door on the right may be used.

Also required:

Cooling module,
see page 633.

Base/plinth, 100 or 200 mm high,
see page 893.

Detailed drawing,
see page 1276.

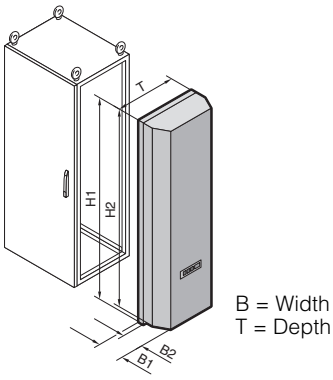
New modular climate control concept

Model No. SK for 1800 mm high TS enclosures		**3300.040**	**3300.060**	**3300.080**	**3300.110**
Model No. SK for 2000 mm high TS enclosures		**3300.050**	**3300.070**	**3300.090**	**3300.120**
Dimensions to fit TS enclosures	Width (B) mm	600	800	1200 (unit positioned on the left)	1200 (unit positioned on the right)
Accessories	Packs of				
Filter media	1	3284.210	3284.210	3284.210	3284.210

All SK 3307.700/.710/.740 or 3310.700/.710/.740 cooling module models, see page 633, can be integrated in the section doors mentioned above.

Accessories Page 710 **TS 8 enclosures** From page 142 **Configuration software** Page 1155

Panels, for installing on 600 mm deep TS 8 enclosures, useful cooling output 1100/1400 W



B = Width
T = Depth

Supply includes:
Climate control side panel with pre-fitted cooling module.

Also required:
Base/plinth, 100 or 200 mm high,
see page 893.

Optionally available:
Microcontroller control with
- digital temperature indicator,
- floating contact for collective fault signal,
- connection for door operated switch for start-up delay.

Automatic condensate evaporation.

Approvals,
see page 72.

Performance diagrams,
available on the Internet.

Model No. SK		**3331.116**	**3331.316**	**3331.140**[1)]	**3331.340**[1)]	**3331.216**[1)]	**3331.416**	**3331.240**[1)]	**3331.440**[1)]
Rated operating voltage V, Hz		230, 50/60		400, 2~, 50/60		230, 50/60		400, 2~, 50/60	
Dimensions	B1	171	171	171	171	171	171	171	171
	B2	157	157	157	157	157	157	157	157
	H1	1797	1997	1797	1997	1797	1997	1797	1997
	H2	1782.5	1982.5	1782.5	1982.5	1782.5	1982.5	1782.5	1982.5
	T	562	562	562	562	562	562	562	562
Dimensions to fit TS enclosures mm	H	1800	2000	1800	2000	1800	2000	1800	2000
	T	600	600	600	600	600	600	600	600
Useful cooling output $\dot{Q}_K$ to DIN 3168	**L 35 L 35**	**1100 W/1200 W**				**1400 W/1450 W**			
	L 35 L 50	**730 W/830 W**				**1010 W/1060 W**			

Rated current max.		4.0 A/4.6 A	2.3 A/2.7 A	4.0 A/4.6 A	2.3 A/2.7 A
Start-up current		11.0 A/12.0 A	6.4 A/6.9 A	11.0 A/12.0 A	6.4 A/6.9 A
Pre-fuse T		6.0 A/6.0 A		6.0 A/6.0 A	
Power consumption P_{el} as per DIN 3168	L 35 L 35	670 W/850 W	690 W/870 W	710 W/910 W	725 W/930 W
	L 35 L 50	800 W/1000 W	820 W/1020 W	810 W/1030 W	830 W/1050 W
Refrigeration factor $\varepsilon = \dot{Q}_K/P_{el}$	L 35 L 35	1.6		2.0	1.9
Refrigerant		R134a, 825 g		R134a, 875 g	
Permissible operating pressure p. max.		25 bar		24 bar	
Temperature and setting range		+20°C to +50°C			
Protection category to EN 60 529/09.2000	External circuit	IP 34			
	Internal circuit	IP 54			
Duty cycle		100 %			
Type of connection		Terminal strip			
Weight		58 kg	62 kg	58 kg	62 kg
Colour		RAL 7035			
Air throughput of fans	External circuit	550 m^3/h			
	Internal circuit	275 m^3/h			
Temperature control		Internal thermostat (factory setting +35°C)			

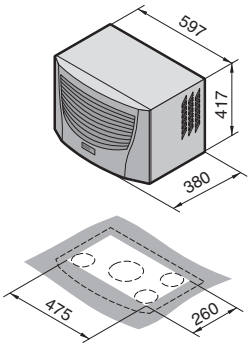
Accessories	Packs of		Page
Metal filters	1	3289.200	724
Door-operated switch	1	4127.000	1030
Temperature indicator	1	3114.100	714
Air diverter	1	3213.300	713

[1)] Delivery times available on request.
Special voltages available on request. Technical modifications reserved.

Accessories Page 710 **TS 8 enclosures** From page 142 **Configuration software** Page 1155

Roof-mounted cooling units

Useful cooling output 500/750 W



Property rights:
German registered design no. 402 02 324
German registered design no. 402 02 325

Supply includes:
Nano-coated condenser and integral electronic condensate evaporation.
Fully wired ready for connection, including drilling template and assembly parts.

Accessories:
Roof plate for TS 8 with mounting cut-out,
see page 718.

Approvals,
see page 73.

Detailed drawing,
see page 1277.

Performance diagrams,
available on the Internet.

RITTAL TOP THERM PLUS

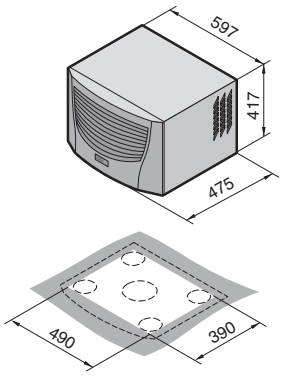
Model No. SK with Basic controller, RAL 7035		**3382.100**	**3382.110**	**3359.100**	**3359.110**	**3359.140**
Model No. SK with Comfort controller, RAL 7035		**3382.500**	**3382.510**	**3359.500**	**3359.510**	**3359.540**
Model No. SK with Basic controller, stainless steel[1)]		**3382.200**	**3382.210**	**3359.200**	**3359.210**	**3359.240**
Model No. SK with Comfort controller, stainless steel[1)]		**3382.600**	**3382.610**	**3359.600**	**3359.610**	**3359.640**
Rated operating voltage V, Hz		230, 1~, 50/60	115, 1~, 50/60	230, 1~, 50/60	115, 1~, 50/60	400, 2~, 50/60
Dimensions in mm	WHD	597 x 417 x 380				
Useful cooling output $\dot{Q}_K$ to DIN 3168	**L 35 L 35**	**500 W/510 W**		**750 W/810 W**		
	L 35 L 50	**270 W/370 W**		**545 W/590 W**		
Rated current max.		3.3 A/3.5 A	6.7 A/7.2 A	3.6 A/4.5 A	7.2 A/9.0 A	2.1 A/2.6 A
Start-up current		9.2 A/10.2 A	18.4 A/18.4 A	10.0 A/10.7 A	20.0 A/21.4 A	5.8 A/6.2 A
Pre-fuse T		10.0 A	10.0 A	10.0 A	16.0 A	6.3 A – 10.0 A[2)]
Power consumption P_{el} to DIN 3168	L 35 L 35	500 W/550 W	510 W/560 W	550 W/660 W	560 W/675 W	
	L 35 L 50	550 W/590 W	560 W/610 W	630 W/740 W	640 W/750 W	
Refrigeration factor $\varepsilon = \dot{Q}_K/P_{el}$	L 35 L 35	1.0		1.4		
Refrigerant		R134a, 250 g		R134a, 300 g		
Permissible operating pressure p. max.		25 bar				
Temperature and setting range		+20°C to +55°C				
Protection category to EN 60 529/09.2000	External circuit	IP 34				
	Internal circuit	IP 54				
Duty cycle		100 %				
Type of connection		Plug-in terminal strip				
Weight		30 kg	35 kg	32 kg	37 kg	
Air throughput of fans (unimpeded air flow)	External circuit	910 m^3/h				
	Internal circuit	440 m^3/h				
Temperature control		Basic or Comfort controller (factory setting +35°C)				

Accessories	Packs of		Page
Filter mats	3	3286.500	723
Metal filters	1	3286.510	724
Quick-change frame	1	3286.700	719
Door-operated switch	1	4127.000	1030
SK bus system for Comfort controller	1	3124.100	717
RiDiag II including cables for Comfort controller	1	3159.100	1154
Interface card for Comfort controller	1	3124.200	716
Air ducting system	1	3286.870	711
Cover stoppers for interior air outlet	2	3286.780	712
Condensate hose	1	3301.612	720

[1)] Delivery times available on request. [2)] Transformer protection switch.
Special voltages available on request. We reserve the right to make technical modifications.

Accessories Page 710

Useful cooling output 1000 W



Property rights:
German registered design no. 402 02 324
German registered design no. 402 02 325

Supply includes:
Nano-coated condenser and integral electronic condensate evaporation.
Fully wired ready for connection, including drilling template and assembly parts.

Accessories:
Roof plate for TS 8 with mounting cut-out, see page 718.

Approvals,
see page 73.

Detailed drawing,
see page 1277.

Performance diagrams,
available on the Internet.

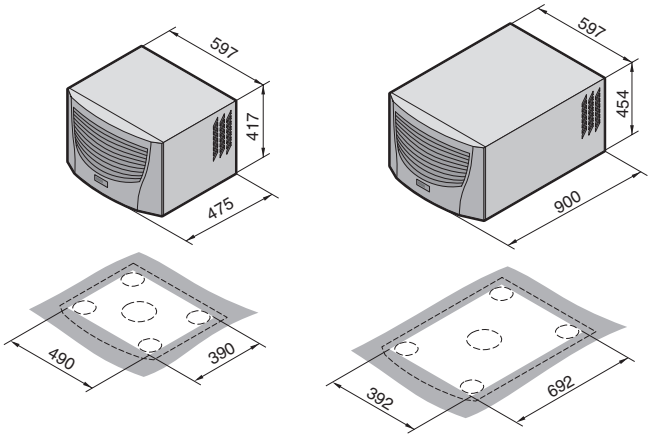
Model No. SK with Basic controller, RAL 7035		**3383.100**	**3383.110**	**3383.140**
Model No. SK with Comfort controller, RAL 7035		**3383.500**	**3383.510**	**3383.540**
Model No. SK with Basic controller, stainless steel[1)]		**3383.200**	**3383.210**	**3383.240**
Model No. SK with Comfort controller, stainless steel[1)]		**3383.600**	**3383.610**	**3383.640**
Rated operating voltage V, Hz		230, 1~, 50/60	115, 1~, 50/60	400, 2~, 50/60
Dimensions in mm	WHD	597 x 417 x 475		
Useful cooling output $\dot{Q}_K$ to DIN 3168	**L 35 L 35** **L 35 L 50**	**1000 W/1080 W** **760 W/820 W**		
Rated current max.		4.9 A/5.1 A	9.5 A/10.0 A	2.8 A/2.8 A
Start-up current		15.5 A/15.5 A	25.3 A/24.3 A	8.0 A/8.8 A
Pre-fuse T		10.0 A	16.0 A	6.3 A – 10.0 A[2)]
Power consumption P_{el} to DIN 3168	L 35 L 35 L 35 L 50	690 W/790 W 800 W/890 W	720 W/800 W 810 W/900 W	
Refrigeration factor $\varepsilon = \dot{Q}_K/P_{el}$	L 35 L 35	1.4		
Refrigerant		R134a, 500 g		
Permissible operating pressure p. max.		25 bar		
Temperature and setting range		+20°C to +55°C		
Protection category to EN 60 529/09.2000	External circuit	IP 34		
	Internal circuit	IP 54		
Duty cycle		100 %		
Type of connection		Plug-in terminal strip		
Weight		40 kg	46 kg	46 kg
Air throughput of fans	External circuit	1760 m^3/h		
	Internal circuit	440 m^3/h		
Temperature control		Basic or Comfort controller (factory setting +35°C)		

Accessories	Packs of		Page
Filter mats	3	3286.500	723
Metal filters	1	3286.510	724
Quick-change frame	1	3286.800	719
Door-operated switch	1	4127.000	1030
SK bus system for Comfort controller	1	3124.100	717
RiDiag II including cables for Comfort controller	1	3159.100	1154
Interface card for Comfort controller	1	3124.200	716
Air ducting system	1	3286.870	711
Cover stoppers for interior air outlet	2	3286.880	712
Condensate hose	1	3301.612	720

[1)] Delivery times available on request. [2)] Transformer protection switch.
Special voltages available on request. We reserve the right to make technical modifications.

Accessories Page 710

Useful cooling output 1100 W/3000 W



Especially for office applications. Low noise level (considerably quieter than cooling units for industrial applications).

Supply includes:
Nano-coated condenser and integral electronic condensate evaporation. Fully wired ready for connection, including drilling template and assembly parts.

Property rights:
(Not with SK 3301.800)
German registered design no. 402 02 324
German registered design no. 402 02 325

Accessories:

Roof plate for TS 8 with mounting cut-out,
see page 718.

Approvals,
see page 73.

Detailed drawing,
see page 1277.

Performance diagrams,
available on the Internet.

RITTAL TOP THERM PLUS

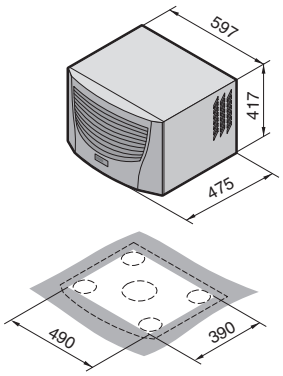
Model No. SK with Comfort controller		**3273.500**	**3273.515[1)]**	**3301.800**
Rated operating voltage V, Hz		230, 1~, 50/60	115, 1~, 50/60	230, 1~, 50
Dimensions in mm	WHD	597 x 417 x 475		515 x 400 x 990/597 x 454 x 900
Useful cooling output $\dot{Q}_K$ to DIN 3168	**L 35 L 35** **L 35 L 50**	**1100 W/1200 W** **850 W/870 W**		**3100 W/3200 W** **2400 W/2550 W**
Rated current max.		5.2 A/5.4 A	11.0 A/11.5 A	9.7 A
Start-up current		15.5 A/16.5 A	32.0 A/35.0 A	19.0 A
Pre-fuse T gG		10.0 A	20.0 A	Motor circuit breaker 10.0 A/10.0 A
Power consumption P_{el} to DIN 3168	L 35 L 35 L 35 L 50	890 W/910 W 960 W/1100 W	920 W/940 W 990 W/1140 W	1200 W/1500 W 1400 W/1750 W
Refrigeration factor $\varepsilon = \dot{Q}_K/P_{el}$	L 35 L 35	1.2		3.1
Refrigerant		R134a, 700 g		R134a, 1200 g
Permissible operating pressure p. max.		25 bar		
Temperature and setting range		+20°C to +55°C		
Protection category to EN 60 529/09.2000	External circuit	IP 34		
	Internal circuit	IP 54[2)]		
Duty cycle		100 %		
Type of connection		Plug-in terminal strip		
Weight		42 kg	47 kg	72 kg
Colour		RAL 7035		
Air throughput of fans	External circuit	1760 m³/h		2000 m³/h
	Internal circuit	440 m³/h		1420 m³/h
Temperature control		Basic or Comfort controller (factory setting +35°C)		

Accessories	Packs of			Page
Filter mats	3	3286.500	3286.600	723
Metal filters	1	3286.510	3286.610	724
Door-operated switch	1	4127.000		1030
SK bus system for Comfort controller	1	3124.100		717
RiDiag II including cables for Comfort controller	1	3159.100		1154
Interface card for Comfort controller	1	3124.200		716
Air ducting system	1	3286.870	3286.970	711
Cover stoppers for interior air outlet	2	3286.880	3286.980	712
Condensate hose	1	3301.612		720

[1)] Delivery times on request. [2)] In order to avoid increased condensation, we recommend enclosures with a protection category of at least IP 54.
Special voltages available on request. We reserve the right to make technical modifications.

Accessories Page 710

Useful cooling output 1500/2000 W



Property rights:
German registered design no. 402 02 324
German registered design no. 402 02 325

Supply includes:
Nano-coated condenser and integral electronic condensate evaporation. Fully wired ready for connection, including drilling template and assembly parts.

Accessories:
Roof plate for TS 8 with mounting cut-out, see page 718.

Approvals,
see page 73.

Detailed drawing,
see page 1277.

Performance diagrams,
available on the Internet.

Model No. SK with Basic controller, RAL 7035		**3384.100**	**3384.110**	**3384.140**	**3385.100**	**3385.110**	**3385.140**
Model No. SK with Comfort controller, RAL 7035		**3384.500**	**3384.510**	**3384.540**	**3385.500**	**3385.510**	**3385.540**
Model No. SK with Basic controller, stainless steel[1)]		**3384.200**	**3384.210**	**3384.240**	**3385.200**	**3385.210**	**3385.240**
Model No. SK with Comfort controller, stainless steel[1)]		**3384.600**	**3384.610**	**3384.640**	**3385.600**	**3385.610**	**3385.640**
Rated operating voltage V, Hz		230, 1~, 50/60	115, 1~, 50/60	400, 2~, 50/60	230, 1~, 50/60	115, 1~, 50/60	400, 2~, 50/60
Dimensions in mm	WHD	597 x 417 x 475			597 x 417 x 475		
Useful cooling output $\dot{Q}_K$ to DIN 3168	**L 35 L 35** **L 35 L 50**	**1500 W/1520 W** **1100 W/1210 W**			**2000 W/2130 W** **1570 W/1670 W**		
Rated current max.		6.3 A/7.4 A	13.7 A/15.3 A	3.8 A/4.4 A	6.3 A/7.2 A	14.2 A/15.4 A	3.7 A/4.2 A
Start-up current		16.6 A/17.1 A	30.7 A/29.1 A	9.8 A/9.6 A	16.8 A/18.4 A	36.0 A/32.0 A	10.0 A/12.0 A
Pre-fuse T		10.0 A	20.0 A	6.3 A – 10.0 A[2)]	10.0 A	20.0 A	6.3 A – 10.0 A[2)]
Power consumption P_{el} to DIN 3168	L 35 L 35 L 35 L 50	955 W/1070 W 1090 W/1230 W	990 W/1090 W 1140 W/1290 W		1140 W/1310 W 1240 W/1450 W	1190 W/1390 W 1300 W/1520 W	
Refrigeration factor $\varepsilon = \dot{Q}_K/P_{el}$	L 35 L 35	1.6	1.5		1.8	1.7	
Refrigerant		R134a, 500 g			R134a, 950 g		
Permissible operating pressure p. max.		25 bar					
Temperature and setting range		+20°C to +55°C					
Protection category to EN 60 529/09.2000	External circuit	IP 34					
	Internal circuit	IP 54					
Duty cycle		100 %					
Type of connection		Plug-in terminal strip					
Weight		41 kg	47 kg	47 kg	42 kg	48 kg	48 kg
Air throughput of fans	External circuit	1760 m³/h			1820 m³/h		
	Internal circuit	470 m³/h					
Temperature control		Basic or Comfort controller (factory setting +35°C)					

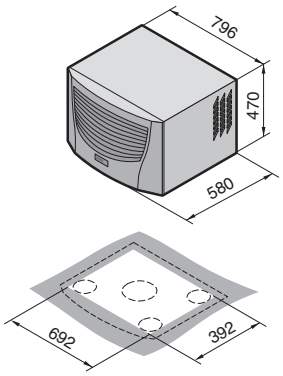
Accessories	Packs of		Page
Filter mats	3	3286.500	723
Metal filters	1	3286.510	724
Quick-change frame	1	3286.800	719
Door-operated switch	1	4127.000	1030
SK bus system for Comfort controller	1	3124.100	717
RiDiag II including cables for Comfort controller	1	3159.100	1154
Interface card for Comfort controller	1	3124.200	716
Air ducting system	1	3286.870	711
Cover stoppers for interior air outlet	2	3286.880	712
Condensate hose	1	3301.612	720

[1)] Delivery times available on request. [2)] Transformer protection switch.
Special voltages available on request. We reserve the right to make technical modifications.

Accessories Page 710

Roof-mounted cooling units

Useful cooling output 3000/4000 W



Property rights:
German registered design no. 402 02 324
German registered design no. 402 02 325

Supply includes:
Nano-coated condenser and integral electronic condensate evaporation.
Fully wired ready for connection, including drilling template, eyebolt and assembly parts.

Accessories:
Roof plate for TS 8 with mounting cut-out, see page 718.

Approvals,
see page 73.

Detailed drawing,
see page 1277.

Performance diagrams,
available on the Internet.

RITTAL TOP THERM PLUS

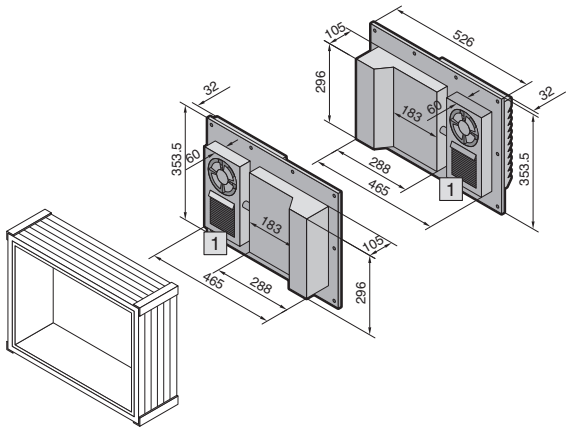
Model No. SK with Basic controller, RAL 7035		**3386.140**	**3387.140**
Model No. SK with Comfort controller, RAL 7035		**3386.540**	**3387.540**
Model No. SK with Basic controller, stainless steel[1)]		**3386.240**	**3387.240**
Model No. SK with Comfort controller, stainless steel[1)]		**3386.640**	**3387.640**
Rated operating voltage V, Hz		400, 3~, 50/460, 3~, 60	400, 3~, 50/460, 3~, 60
Dimensions in mm	WHD	796 x 470 x 580	796 x 470 x 580
Useful cooling output $\dot{Q}_K$ to DIN 3168	**L 35 L 35** **L 35 L 50**	**3000 W/3300 W** **2200 W/2500 W**	**4000 W/4200 W** **3250 W/3490 W**
Rated current max.		3.4 A/3.4 A	3.9 A/3.9 A
Start-up current		8.0 A/9.0 A	17.0 A/19.0 A
Pre-fuse T		Motor circuit breaker 6.3 A – 10.0 A	
Power consumption P_{el} to DIN 3168	L 35 L 35 L 35 L 50	1320 W/1630 W 1570 W/1910 W	1760 W/2200 W 2010 W/2480 W
Refrigeration factor $\varepsilon = \dot{Q}_K/P_{el}$	L 35 L 35	2.3	
Refrigerant		R134a, 1600 g	R134a, 1800 g
Permissible operating pressure p. max.		25 bar	
Temperature and setting range		+20°C to +55°C	
Protection category to EN 60 529/09.2000	External circuit	IP 34	
	Internal circuit	IP 54	
Duty cycle		100 %	
Type of connection		Plug-in terminal strip	
Weight		70 kg	77 kg
Air throughput of fans	External circuit	3450 m³/h	3870 m³/h
	Internal circuit	1280 m³/h	1420 m³/h
Temperature control		Basic or Comfort controller (factory setting +35°C)	

Accessories	Packs of		Page
Filter mats	3	3286.600	723
Metal filters	1	3286.610	724
Quick-change frame	1	3286.900	719
Door-operated switch	1	4127.000	1030
SK bus system for Comfort controller	1	3124.100	717
RiDiag II including cables for Comfort controller	1	3159.100	1154
Interface card for Comfort controller	1	3124.200	716
Air ducting system	1	3286.970	711
Cover stoppers for interior air outlet	2	3286.980	712
Condensate hose	1	3301.612	720

[1)] Delivery times available on request.
Special voltages available on request. We reserve the right to make technical modifications.

Accessories Page 710

VIP small cooling units, useful cooling output 225 W



The new VIP SK small cooling units were developed especially for cooling the VIP 6000 command panel. In addition, VIP small cooling units also offer a space-saving, economical solution for the climate control of small enclosures where small heat loads are generated by the system.

Supply includes:
Fully wired ready for connection and pre-mounted on an aluminium rear panel to fit VIP 6000 operating housing 7 U.

Property rights:
German patent no. 198 17 917

1 **Distance from installed equipment at least 60 mm**

Approvals,
see page 74.

Performance diagrams,
available on the Internet.

Model No. SK		**3201.100**	**3202.100**
Condenser version		Left	Right
Rated operating voltage V, Hz		230, 50/60	
Dimensions in mm	W H D	526 353.5 105	
Useful cooling output $\dot{Q}_K$ to DIN 3168	**L 35 L 35** **L 35 L 45**	**225 W/270 W** **160 W/200 W**	

Rated current max.		1.5 A/1.5 A
Start-up current		1.9 A/2.0 A
Pre-fuse T		4.0 A/4.0 A
Power consumption P_{el} to DIN 3168	L 35 L 35 L 35 L 45	285 W/300 W 315 W/325 W
Refrigeration factor $\varepsilon = \dot{Q}_K/P_{el}$	L 35 L 35	0.8/0.9
Refrigerant		R134a, 170 g
Permissible operating pressure p. max.		27 bar
Temperature and setting range		+20°C to +45°C
Protection category to EN 60 529/09.2000	External circuit	IP 24
	Internal circuit	IP 54
Duty cycle		100 %
Type of connection		Terminal strip
Weight		10.5 kg
Colour		Rear panel aluminium, vent grille RAL 7035
Air throughput of fans	External circuit	235 m^3/h / 270 m^3/h
	Internal circuit	160 m^3/h / 180 m^3/h
Temperature control		Electronic control (factory setting +35°C)

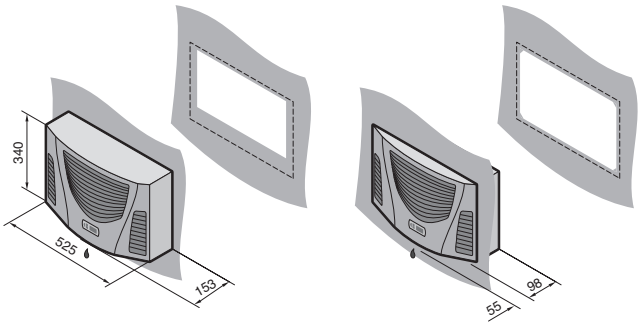
Accessories	Packs of		Page
Temperature indicator	1	3114.100	714
Condensate hose	1	3301.608	720

Special voltages available on request. We reserve the right to make technical modifications.

Accessories Page 710 **Configuration software** Page 1155

Wall-mounted cooling units

Mini in horizontal format, useful cooling output 300 W



Mini cooling units in horizontal format, ideal for cooling small enclosures and operating housings with optimum space utilisation.

Supply includes:
Nano-coated condenser. Fully wired ready for connection, including drilling template and assembly parts.

Approvals,
see page 74.

Detailed drawing,
see page 1278.

Performance diagrams,
available on the Internet.

RITTAL TOP THERM PLUS

Model No. SK		**3302.300**	**3302.310**
Rated operating voltage V, Hz		230, 1~, 50/60	115, 1~, 60
Dimensions in mm	W H D	525 340 153	
Useful cooling output $\dot{Q}_K$ to DIN 3168	**L 35 L 35** **L 35 L 50**	**300 W/320 W** **150 W/160 W**	**300 W** **150 W**

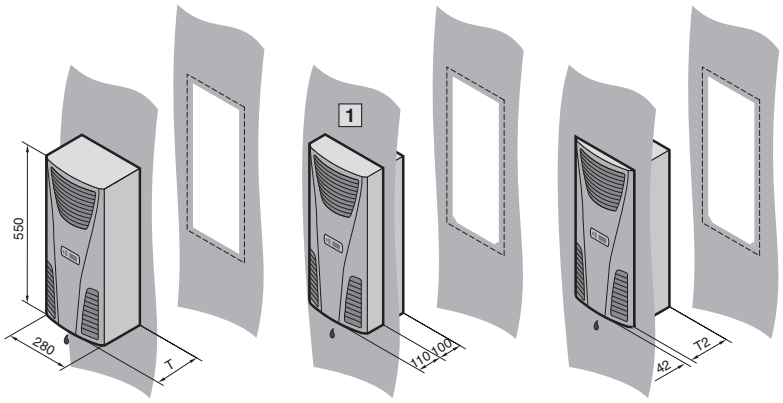
Rated current max.		1.6 A/1.7 A	4.0 A
Start-up current		4.3 A/5.3 A	12.0 A
Pre-fuse T		10.0 A	10.0 A
Power consumption P_{el} to DIN 3168	L 35 L 35 L 35 L 50	285 W/300 W 320 W/340 W	290 W 340 W
Refrigeration factor $\varepsilon = \dot{Q}_K/P_{el}$	L 35 L 35	1.1	
Refrigerant		R134a, 100 g	R134a, 95 g
Permissible operating pressure p. max.		25 bar	
Temperature and setting range		+20°C to +55°C	
Protection category to EN 60 529/09.2000	External circuit	IP 34	
	Internal circuit	IP 54	
Duty cycle		100 %	
Type of connection		Plug-in terminal strip	
Weight		13 kg	
Colour		RAL 7035	
Air throughput of fans	External circuit	345 m^3/h	
	Internal circuit	310 m^3/h	
Temperature control		Basic controller	

Accessories	Packs of		Page
Temperature indicator	1	3114.100	714
Condensate hose	1	3301.608	720
Filter mats	3	3286.110	723
Metal filters	1	3286.120	724

Special voltages available on request. We reserve the right to make technical modifications.

Accessories Page 710 **Configuration software** Page 1155

Useful cooling output 300/500 W



B = Width
T = Depth

Supply includes:
Nano-coated condenser. Fully wired ready for connection, including drilling template and assembly parts.

1 Partial internal mounting possible with 3303.XXX only.

Approvals,
see page 75.

Detailed drawing,
see page 1278.

Performance diagrams,
available on the Internet.

Property rights:
German registered design
no. 402 02 324 and
no. 402 02 325
Japanese registered design
no. 1 187 896
Indian registered design
no. 189 953
US design patent no. D 488,480
IR reg. design no. DM/061 967
with validity for FR, IT, ES

RITTAL TOP THERM PLUS

Model No. SK with Basic controller, RAL 7035		**3302.100**	**3302.110**	**3303.100**	**3303.110**
Model No. SK with Comfort controller, RAL 7035		**–**	**–**	**3303.500**	**3303.510**
Model No. SK with Basic controller, stainless steel[1)]		**3302.200**	**3302.210**	**3303.200**	**3303.210**
Model No. SK with Comfort controller, stainless steel[1)]		**–**	**–**	**3303.600**	**3303.610**
Rated operating voltage V, Hz		230, 1~, 50/60	115, 1~, 60	230, 1~, 50/60	115, 1~, 60
Dimensions in mm	B H T T2	280 550 140 98		280 550 210 164	
Useful cooling output $\dot{Q}_K$ to DIN 3168	**L 35 L 35** **L 35 L 50**	**300 W/320 W** **150 W/170 W**	**300 W** **150 W**	**500 W/610 W** **280 W/350 W**	**500 W** **280 W**
Rated current max.		1.6 A/1.7 A	3.3 A	2.6 A/2.6 A	5.7 A
Start-up current		3.0 A/3.4 A	8.0 A	5.1 A/6.4 A	11.5 A
Pre-fuse T		10.0 A	10.0 A	10.0 A	10.0 A
Power consumption P_{el} to DIN 3168	L 35 L 35 L 35 L 50	245 W/255 W 255 W/275 W	290 W 340 W	360 W/380 W 420 W/390 W	470 W 500 W
Refrigeration factor $\varepsilon = \dot{Q}_K/P_{el}$	L 35 L 35	1.2		1.4	
Refrigerant		R134a, 100 g		R134a, 170 g	
Permissible operating pressure p. max.		25 bar		28 bar	
Temperature and setting range		+20°C to +55°C			
Protection category to EN 60 529/09.2000	External circuit	IP 34			
	Internal circuit	IP 54			
Duty cycle		100 %			
Type of connection		Plug-in terminal strip			
Weight		13 kg		17 kg	
Air throughput of fans	External circuit	310 m³/h		345 m³/h	
	Internal circuit	345 m³/h		310 m³/h	
Temperature control		Basic or Comfort controller (factory setting +35°C)			

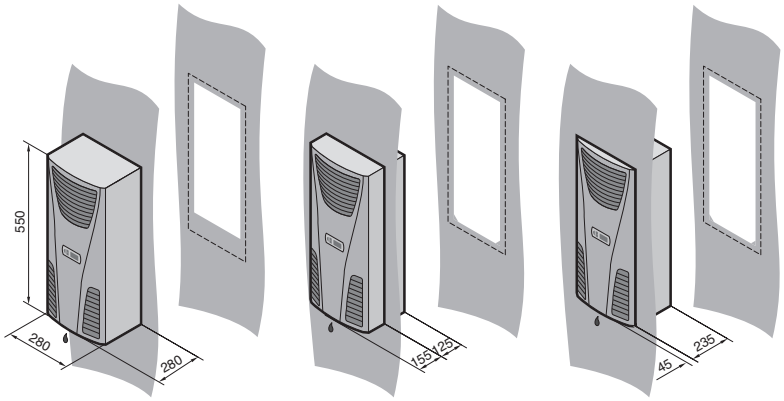
Accessories	Packs of			Page
Filter mats	3	3286.300		723
Metal filters	1	3286.310		724
Door-operated switch	1	4127.000		1030
SK bus system for Comfort controller	1	–	3124.100	717
RiDiag II including cables for Comfort controller	1	–	3159.100	1154
Interface card for Comfort controller	1	–	3124.200	716
Condensate hose	1	3301.608	3301.610	720

[1)] Delivery times available on request.
Special voltages available on request. We reserve the right to make technical modifications.

Accessories Page 710 **Configuration software** Page 1155

Wall-mounted cooling units

Useful cooling output 750 W



Supply includes:
Nano-coated condenser. Fully wired ready for connection, including drilling template and assembly parts.

Approvals,
see page 75.

Detailed drawing,
see page 1278.

Performance diagrams,
available on the Internet.

Property rights:
German registered design no. 402 02 324 and no. 402 02 325
Japanese registered design no. 1 187 896
Indian registered design no. 189 953
US design patent no. D 488,480
IR reg. design no. DM/061 967
with validity for FR, IT, ES

RITTAL TOP THERM PLUS

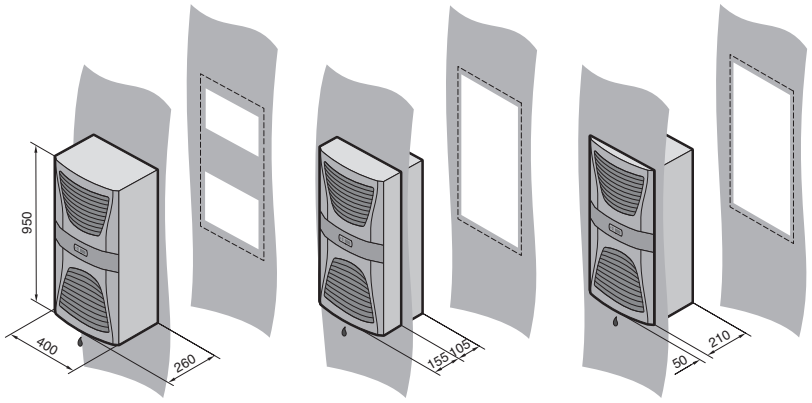
Model No. SK with Basic controller, RAL 7035		**3361.100**	**3361.110**	**3361.140**
Model No. SK with Comfort controller, RAL 7035		**3361.500**	**3361.510**	**3361.540**
Model No. SK with Basic controller, stainless steel[1)]		**3361.200**	**3361.210**	**3361.240**
Model No. SK with Comfort controller, stainless steel[1)]		**3361.600**	**3361.610**	**3361.640**
Rated operating voltage V, Hz		230, 1~, 50/60[3)]	115, 1~, 60[3)]	400[2)], 2~, 50/60[3)]
Dimensions in mm	W H D	280 550 280		
Useful cooling output $\dot{Q}_K$ to DIN 3168	**L 35 L 35** **L 35 L 50**	**750 W/780 W** **510 W/540 W**	**750 W** **500 W**	**750 W/780 W** **510 W/540 W**
Rated current max.		2.3 A/2.4 A	5.3 A	1.2 A/1.4 A
Start-up current		5.6 A/5.6 A	12.0 A	3.1 A/3.3 A
Pre-fuse T		10.0 A	10.0 A	6.3 A – 10.0 A[4)]
Power consumption P_{el} to DIN 3168	L 35 L 35 L 35 L 50	480 W/550 W 530 W/640 W	570 W 670 W	480 W/550 W 530 W/640 W
Refrigeration factor $\varepsilon = \dot{Q}_K/P_{el}$	L 35 L 35	1.5		
Refrigerant		R134a, 280 g	R134a, 260 g	R134a, 280 g
Permissible operating pressure p. max.		28 bar		
Temperature and setting range		+20°C to +55°C		
Protection category to EN 60 529/09.2000	External circuit	IP 34		
	Internal circuit	IP 54		
Duty cycle		100 %		
Type of connection		Plug-in terminal strip		
Weight		22 kg		
Air throughput of fans (unimpeded air flow)	External circuit	480 m^3/h		
	Internal circuit	600 m^3/h		
Temperature control		Basic or Comfort controller (factory setting +35°C)		

Accessories	Packs of		Page
Filter mats	3	3286.300	723
Metal filters	1	3286.310	724
Door-operated switch	1	4127.000	1030
SK bus system for Comfort controller	1	3124.100	717
RiDiag II including cables for Comfort controller	1	3159.100	1154
Interface card for Comfort controller	1	3124.200	716
Condensate hose	1	3301.610	720

[1)] Delivery times on request. [2)] External toroidal core transformer Ø 126 x 65 mm deep for mounting in the enclosure. [3)] T_u max. = 52°C/60 Hz.
[4)] Transformer protection switch.
Special voltages available on request. Technical modifications reserved.

Accessories Page 710 **Configuration software** Page 1155

Useful cooling output 1000/1500 W



Supply includes:
Nano-coated condenser and integral electronic condensate evaporation. Fully wired ready for connection, including drilling template and assembly parts.

Approvals,
see page 75.

Detailed drawing,
see page 1279.

Performance diagrams,
available on the Internet.

Property rights:
German registered design no. 402 02 325
IR reg. design no. DM/062 557 with validity for FR, IT, ES
Indian registered design no. 190 269
Japanese registered design no. 1 187 905

RITTAL TOP THERM PLUS

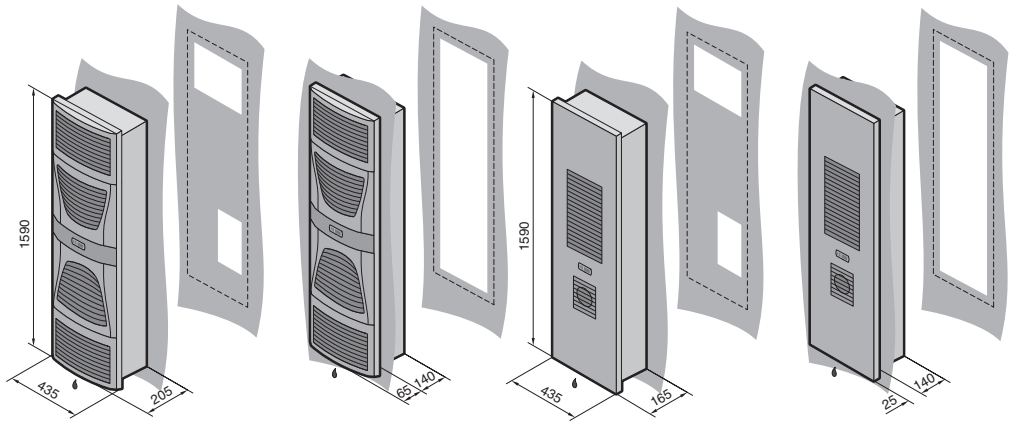
Model No. SK with Basic controller, RAL 7035		**3304.100**	**3304.110**	**3304.140**	**3305.100**	**3305.110**	**3305.140**
Model No. SK with Comfort controller, RAL 7035		**3304.500**	**3304.510**	**3304.540**	**3305.500**	**3305.510**[1]	**3305.540**
Model No. SK with Basic controller, stainless steel[1]		**3304.200**	**3304.210**	**3304.240**	**3305.200**	**3305.210**	**3305.240**
Model No. SK with Comfort controller, stainless steel[1]		**3304.600**	**3304.610**	**3304.640**	**3305.600**	**3305.610**	**3305.640**
Rated operating voltage V, Hz		230, 1~, 50/60	115, 1~, 50/60	400, 3~, 50/ 460, 3~, 60	230, 1~, 50/60	115, 1~, 50/60	400, 3~, 50/ 460, 3~, 60
Dimensions in mm	W H D	400 950 260			400 950 260		
Useful cooling output $\dot{Q}_K$ to DIN 3168	**L 35 L 35** **L 35 L 50**	**1000 W/1060 W** **790 W/840 W**			**1500 W/1510 W** **1230 W/1250 W**		
Rated current max.		5.4 A/5.0 A	10.6 A/11.1 A	2.8 A/2.9 A	6.0 A/6.5 A	12.1 A/13.6 A	2.6 A/2.9 A
Start-up current		12.0 A/14.0 A	26.0 A/28.0 A	11.5 A/12.7 A	22.0 A/24.0 A	42.0 A/46.0 A	12.2 A/11.3 A
Pre-fuse T		10.0 A	16.0 A	6.3 A – 10.0 A[2]	16.0 A	20.0 A	6.3 A – 10.0 A[2]
Power consumption P_{el} to DIN 3168	L 35 L 35 L 35 L 50	825 W/775 W 875 W/835 W	850 W/800 W 900 W/875 W	700 W/675 W 785 W/800 W	975 W/1125 W 1125 W/1285 W	1000 W/1175 W 1165 W/1325 W	925 W/1100 W 1085 W/1275 W
Refrigeration factor $\varepsilon = \dot{Q}_K/P_{el}$	L 35 L 35	1.2		1.4	1.5		1.6
Refrigerant		R134a, 325 g		R134a, 500 g	R134a, 600 g		
Permissible operating pressure p. max.		25 bar					
Temperature and setting range		+20°C to +55°C					
Protection category to EN 60 529/09.2000	External circuit	IP 34					
	Internal circuit	IP 54					
Duty cycle		100 %					
Type of connection		Plug-in terminal strip					
Weight		39 kg	44 kg	40 kg	41 kg	46 kg	42 kg
Air throughput of fans	External circuit	900 m³/h					
	Internal circuit	600 m³/h			800 m³/h		
Temperature control		Basic or Comfort controller (factory setting +35°C)					

Accessories	Packs of		Page
Filter mats	3	3286.400	723
Metal filters	1	3286.410	724
Door-operated switch	1	4127.000	1030
SK bus system for Comfort controller	1	3124.100	717
RiDiag II including cables for Comfort controller	1	3159.100	1154
Interface card for Comfort controller	1	3124.200	716
Condensate hose	1	3301.612	720

[1] Delivery times available on request. [2] Motor circuit-breaker.
Special voltages available on request. We reserve the right to make technical modifications.

Accessories Page 710 **Configuration software** Page 1155

Slimline, useful cooling output 1500 W



- Simple, fast assembly without the need to drill additional holes
- Ideal for restricted mounting locations
- Super-slimline design
- Minimal installation depth and build height.

Supply includes:
Nano-coated condenser and integral electronic condensate evaporation. Fully wired ready for connection, including drilling template and assembly parts.

Approvals,
see page 75.

Detailed drawing,
see page 1280.

Performance diagrams,
available on the Internet.

RITTAL TOP THERM PLUS

Model No. SK with Basic controller, RAL 7035		**3366.100**	**3377.100[1)]**	**3366.110**	**3377.110[1)]**	**3366.140**	**3377.140[1)]**
Model No. SK with Comfort controller, RAL 7035		**3366.500**	**3377.500[1)]**	**3366.510**	**3377.510[1)]**	**3366.540**	**3377.540[1)]**
Model No. SK with Basic controller, stainless steel		**3366.200[1)]**	**3377.200[1)]**	**3366.210[1)]**	**3377.210[1)]**	**3366.240[1)]**	**3377.240[1)]**
Model No. SK with Comfort controller, stainless steel		**3366.600[1)]**	**3377.600[1)]**	**3366.610[1)]**	**3377.610[1)]**	**3366.640[1)]**	**3377.640[1)]**
Rated operating voltage V, Hz		230, 1~, 50/60		115, 1~, 50/60		400, 3~, 50/460, 3~, 60	
Dimensions in mm	W H D	435 1590 205	435 1590 165	435 1590 205	435 1590 165	435 1590 205	435 1590 165
Useful cooling output $\dot{Q}_K$ to DIN 3168	**L 35 L 35** **L 35 L 50**	**1500 W/1500 W** **1050 W/1100 W**				**1500 W/1500 W** **980 W/1080 W**	

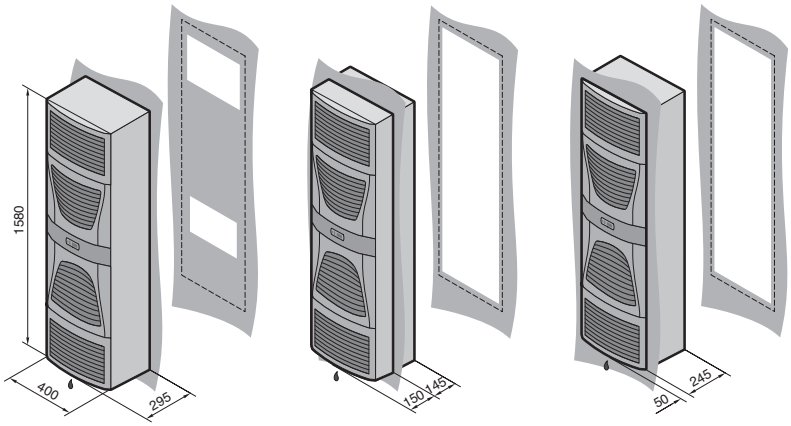
Rated current max.		7.1 A/7.3 A	14.3 A/14.7 A	3.0 A/3.1 A
Start-up current		22.0 A/24.0 A	43.0 A/47.0 A	8.0 A/8.8 A
Pre-fuse T		10.0 A	20.0 A	6.3 A – 10.0 A[2)]
Power consumption P_{el} to DIN 3168	L 35 L 35 L 35 L 50	1045 W/1175 W 1220 W/1335 W	1075 W/1200 W 1265 W/1375 W	1090 W/1240 W 1260 W/1430 W
Refrigeration factor $\varepsilon = \dot{Q}_K/P_{el}$	L 35 L 35	1.4		1.3
Refrigerant		R134a, 700 g		
Permissible operating pressure p. max.		28 bar		
Temperature and setting range		+20°C to +55°C		
Protection category to EN 60 529/09.2000	External circuit	IP 34		
	Internal circuit	IP 54		
Duty cycle		100 %		
Type of connection		Plug-in terminal strip		
Weight		45 kg	50 kg	46 kg
Air throughput of fans (unimpeded air flow)	External circuit	910 m³/h		
	Internal circuit	860 m³/h		
Temperature control		Basic or Comfort controller (factory setting +35°C)		

Accessories	Packs of							Page
Filter mats	3	3286.400	3253.010	3286.400	3253.010	3286.400	3253.010	723
Metal filters	1	3286.410	3253.220	3286.410	3253.220	3286.410	3253.220	724
Trim frame for external device mounting	1	3377.000						719
Door-operated switch	1	4127.000						1030
SK bus system for Comfort controller	1	3124.100						717
RiDiag II including cables for Comfort controller	1	3159.100						1154
Interface card for Comfort controller	1	3124.200						716
Condensate hose	1	3301.612						720

[1)] Delivery times available on request. [2)] Motor circuit-breaker.
Special voltages available on request. Technical modifications reserved.

Accessories Page 710 **Configuration software** Page 1155

Useful cooling output 2000/2500 W



Supply includes:
Nano-coated condenser and integral electronic condensate evaporation. Fully wired ready for connection, including drilling template, eyebolt and assembly parts.

Also required:
For installation in the door, we recommend the use of the ride-up roller and 180° hinges (TS 8800.710), see page 961, and for use in the side panel we recommend the use of the TS enclosure panel fasteners (TS 8800.071), see page 918.

Approvals,
see page 75.

Detailed drawing,
see page 1279.

Performance diagrams,
available on the Internet.

RITTAL TOP THERM PLUS

Model No. SK with Basic controller, RAL 7035		**3328.100**	**3328.110**	**3328.140**	**3329.100**	**3329.110**	**3329.140**
Model No. SK with Comfort controller, RAL 7035		**3328.500**	**3328.510**	**3328.540**	**3329.500**	**3329.510**	**3329.540**
Model No. SK with Basic controller, stainless steel[1)]		**3328.200**	**3328.210**	**3328.240**	**3329.200**	**3329.210**	**3329.240**
Model No. SK with Comfort controller, stainless steel[1)]		**3328.600**	**3328.610**	**3328.640**	**3329.600**	**3329.610**	**3329.640**
Rated operating voltage V, Hz		230, 1~, 50/60	115, 1~, 50/60	400, 3~, 50/ 460, 3~, 60	230, 1~, 50/60	115, 1~, 50/60	400, 3~, 50/ 460, 3~, 60
Dimensions in mm	W H D	400 1580 295			400 1580 295		
Useful cooling output $\dot{Q}_K$ to DIN 3168	**L 35 L 35** **L 35 L 50**	**2000 W/2350 W** **1450 W/1690 W**			**2500 W/2750 W** **1600 W/1750 W**		**2500 W/2700 W** **1900 W/1950 W**
Rated current max.		7.5 A/9.1 A	14.7 A/17.3 A	2.8 A/3.3 A	8.6 A/10.6 A	17.0 A/22.0 A	3.7 A/3.8 A
Start-up current		22.0 A/26.0 A	36.0 A/39.0 A	6.8 A/7.8 A	21.0 A/21.0 A	44.0 A/42.0 A	6.8 A/7.6 A
Pre-fuse T		16.0 A	25.0 A	6.3 A – 10.0 A[2)]	16.0 A	25.0 A	6.3 A – 10.0 A[2)]
Power consumption P_{el} to DIN 3168	L 35 L 35 L 35 L 50	1025 W/1200 W 1250 W/1350 W	1085 W/1250 W 1300 W/1410 W	1050 W/1275 W 1275 W/1525 W	1450 W/1675 W 1625 W/2000 W	1500 W/1725 W 1675 W/2065 W	1425 W/1625 W 1675 W/1975 W
Refrigeration factor $\varepsilon = \dot{Q}_K/P_{el}$	L 35 L 35	2.0	1.8	1.9	1.7		1.8
Refrigerant		R134a, 950 g					
Permissible operating pressure p. max.		28 bar					
Temperature and setting range		+20°C to +55°C					
Protection category to EN 60 529/09.2000	External circuit	IP 34					
	Internal circuit	IP 54					
Duty cycle		100 %					
Type of connection		Plug-in terminal strip					
Weight		66 kg	73 kg	67 kg	69 kg	76 kg	70 kg
Air throughput of fans	External circuit	640 m³/h			710 m³/h		
	Internal circuit	550 m³/h			640 m³/h		
Temperature control		Basic or Comfort controller (factory setting +35°C)					

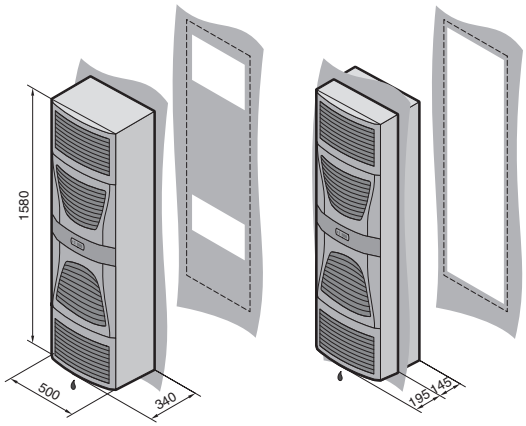
Accessories	Packs of		Page
Filter mats	3	3286.400	723
Metal filters	1	3286.410	724
Door-operated switch	1	4127.000	1030
SK bus system for Comfort controller	1	3124.100	717
RiDiag II including cables for Comfort controller	1	3159.100	1154
Interface card for Comfort controller	1	3124.200	716
Condensate hose	1	3301.612	720

[1)] Delivery times available on request. [2)] Motor circuit-breaker. Special voltages available on request. Technical modifications reserved.

Accessories Page 710 **Configuration software** Page 1155

Wall-mounted cooling units

Useful cooling output 4000 W



RITTAL TOP THERM PLUS

Supply includes:
Nano-coated condenser and integral electronic condensate evaporation. Fully wired ready for connection, including drilling template, eyebolt and assembly parts.

Note:
External mounting and partial internal mounting of the cooling unit are available as standard. Partial internal mounting not possible with:
– 600 mm wide TS enclosures and
– 1200 mm wide TS enclosures in the lockable door.

Also required:
When mounting in the door: Ride-up roller (TS 4538.000), see page 967.
When fitted with 180° hinges (TS 8800.710), see page 961.
When mounting in the side panel: Enclosure panel fasteners (TS 8800.071), see page 918.

Approvals,
see page 75.

Detailed drawing,
see page 1279.

Performance diagrams,
available on the Internet.

Model No. SK with Basic controller, RAL 7035		**3332.140**
Model No. SK with Comfort controller, RAL 7035		**3332.540**
Model No. SK with Basic controller, stainless steel[1)]		**3332.240**
Model No. SK with Comfort controller, stainless steel[1)]		**3332.640**
Rated operating voltage V, Hz		400, 3~, 50/460, 3~, 60
Dimensions in mm	W H D	500 1580 340
Useful cooling output $\dot{Q}_K$ to DIN 3168	**L 35 L 35** **L 35 L 50**	**4000 W/4400 W** **3070 W/3570 W**

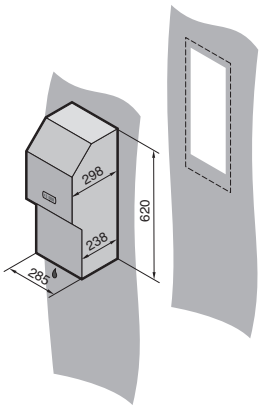
Rated current max.		4.2 A/4.2 A
Start-up current		9.2 A/11.0 A
Pre-fuse T		Motor circuit breaker 6.3 A – 10.0 A
Power consumption P_{el} to DIN 3168	L 35 L 35 L 35 L 50	1850 W/2250 W 2120 W/2590 W
Refrigeration factor $\varepsilon = \dot{Q}_K/P_{el}$	L 35 L 35	2.1
Refrigerant		R134a, 3000 g
Permissible operating pressure p. max.		28 bar
Temperature and setting range		+20°C to +55°C
Protection category to EN 60 529/09.2000	External circuit	IP 34
	Internal circuit	IP 54
Duty cycle		100 %
Type of connection		Plug-in terminal strip
Weight		91 kg
Air throughput of fans	External circuit	2000 m³/h
	Internal circuit	1500 m³/h
Temperature control		Basic or Comfort controller (factory setting +35°C)

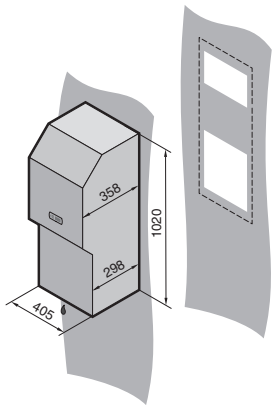
Accessories	Packs of		Page
Filter mats	3	3286.400	723
Metal filters	1	3286.410	724
Door-operated switch	1	4127.000	1030
SK bus system for Comfort controller	1	3124.100	717
RiDiag II including cables for Comfort controller	1	3159.100	1154
Interface card for Comfort controller	1	3124.200	716
Condensate hose	1	3301.612	720

[1)] Delivery times available on request.
Special voltages available on request. Technical modifications reserved.

Accessories Page 710 **Configuration software** Page 1155

Design NEMA 4x, useful cooling output 500/1000/1500 W





Supply includes:
Nano-coated condenser and integral electronic condensate evaporation. Fully wired ready for connection, including drilling template and assembly parts.

Approvals,
see page 77.

Detailed drawing,
see page 1280.

Performance diagrams,
available on the Internet.

RITTAL TOP THERM PLUS

Model No. SK with Basic controller[1)]		**3303.104**	**3303.114**	**3304.104**	**3304.114**	**3304.144**	**3305.104**	**3305.114**	**3305.144**
Model No. SK with Comfort controller[1)]		**3303.504**	**3303.514**	**3304.504**	**3304.514**	**3304.544**	**3305.504**	**3305.514**	**3305.544**
Rated operating voltage V, Hz		230, 1~, 50/60	115, 1~, 60	230, 1~, 50/60	115, 1~, 50/60	400, 3~, 50/460, 3~, 60	230, 1~, 50/60	115, 1~, 50/60	400, 3~, 50/460, 3~, 60
Dimensions in mm	W H D	285 620 298		405 1020 358			405 1020 358		
Useful cooling output $\dot{Q}_K$ to DIN 3168	**L 35 L 35** **L 35 L 50**	**500 W/610 W** **280 W/350 W**	**500 W** **280 W**	**1000 W/1060 W** **790 W/840 W**			**1500 W/1510 W** **1230 W/1250 W**		
Rated current max.		2.6/2.6 A	5.7 A	5.4/5.0 A	10.6/11.1 A	2.8/2.9 A	6.0/6.5 A	12.1/13.6 A	2.6/2.9 A
Start-up current		5.1/6.4 A	11.5 A	12.0/14.0 A	26.0/28.0 A	11.5/12.7 A	22.0/24.0 A	42.0/46.0 A	12.2/11.3 A
Pre-fuse T		10.0 A	10.0 A	10.0 A	16.0 A	6.3 A – 10.0 A[2)]	16.0 A	20.0 A	6.3 A – 10.0 A[2)]
Power consumption P_{el} to DIN 3168	L 35 L 35 L 35 L 50	360/380 W 420/390 W	470 W 500 W	825/775 W 875/835 W	850/800 W 900/875 W	700/675 W 785/800 W	975/1125 W 1125/1285 W	1000/1175 W 1165/1325 W	925/1100 W 1085/1275 W
Refrigeration factor $\varepsilon = \dot{Q}_K/P_{el}$	L 35 L 35	1.4				1.7	1.8	1.7	1.9
Refrigerant		R134a, 170 g		R134a, 325 g		R134a, 500 g	R134a, 600 g		
Permissible operating pressure p. max.		28 bar		25 bar			25 bar		
Temperature and setting range		+20°C to +55°C							
Protection rating		NEMA 4x							
Duty cycle		100 %							
Type of connection		Plug-in terminal strip							
Weight		25 kg		49 kg	54 kg	50 kg	51 kg	56 kg	52 kg
Material		Stainless steel 1.4404 (V4A) (AISI 316L)							
Air throughput of fans	External circuit	345 m^3/h		900 m^3/h			900 m^3/h		
	Internal circuit	310 m^3/h		600 m^3/h			800 m^3/h		
Temperature control		Basic or Comfort controller (factory setting +35°C)							

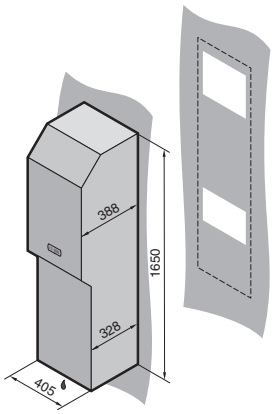
Accessories	Packs of				Page
Door-operated switch	1	4127.000			1030
SK bus system for Comfort controller	1	3124.100	–	3124.100	717
RiDiag II including cables for Comfort controller	1	3159.100			1154
Interface card for Comfort controller	1	3124.200			716
Condensate hose	1	3301.610	3301.612		720

[1)] Delivery times available on request. [2)] Motor circuit-breaker.
Special voltages available on request. We reserve the right to make technical modifications.

Accessories Page 710 **Configuration software** Page 1155

Wall-mounted cooling units

Design NEMA 4x, useful cooling output 2000/2500 W



Supply includes:
Nano-coated condenser and integral electronic condensate evaporation. Fully wired ready for connection, including drilling template and assembly parts.

Approvals,
see page 77.

Detailed drawing,
see page 1281.

Performance diagrams,
available on the Internet.

RITTAL TOP THERM PLUS

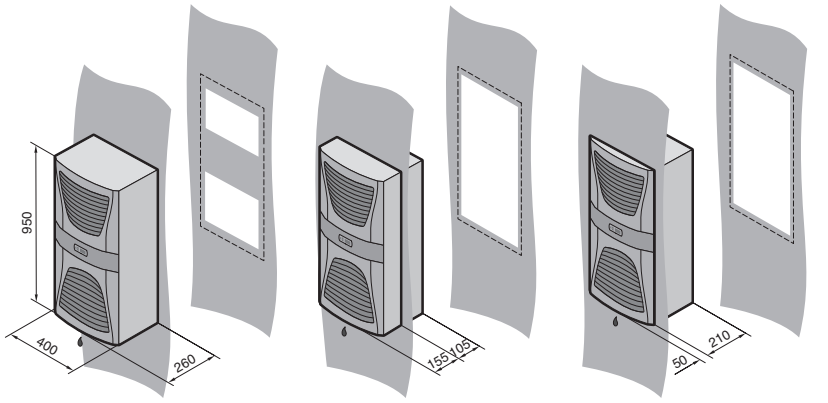
Model No. SK with Basic controller[1)]		**3328.104**	**3328.114**	**3328.144**	**3329.104**	**3329.114**	**3329.144**
Model No. SK with Comfort controller[1)]		**3328.504**	**3328.514**	**3328.544**	**3329.504**	**3329.514**	**3329.544**
Rated operating voltage V, Hz		230, 1~, 50/60	115, 1~, 50/60	400, 3~, 50/ 460, 3~, 60	230, 1~, 50/60	115, 1~, 50/60	400, 3~, 50/ 460, 3~, 60
Dimensions in mm	W H D	405 1650 388					
Useful cooling output $\dot{Q}_K$ to DIN 3168	**L 35 L 35** **L 35 L 50**	**2000 W/2350 W** **1450 W/1690 W**			**2500 W/2750 W** **1600 W/1750 W**		**2500 W/2700 W** **1900 W/1950 W**
Rated current max.		7.5 A/9.1 A	14.7 A/17.3 A	2.8 A/3.3 A	8.6 A/10.6 A	17.0 A/22.0 A	3.7 A/3.8 A
Start-up current		22.0 A/26.0 A	36.0 A/39.0 A	6.8 A/7.8 A	21.0 A/21.0 A	44.0 A/42.0 A	6.8 A/7.6 A
Pre-fuse T		16.0 A	25.0 A	6.3 A – 10.0 A[2)]	16.0 A	25.0 A	6.3 A – 10.0 A[2)]
Power consumption P_{el} to DIN 3168	L 35 L 35 L 35 L 50	1025/1200 W 1250/1350 W	1085/1250 W 1300/1410 W	1050/1275 W 1275/1525 W	1450/1675 W 1625/2000 W	1500/1725 W 1675/2065 W	1425/1625 W 1675/1975 W
Refrigeration factor $\varepsilon = \dot{Q}_K/P_{el}$	L 35 L 35	1.7		2.3	1.9		2.0
Refrigerant		R134a, 900 g					
Permissible operating pressure p. max.		28 bar					
Temperature and setting range		+20°C to +55°C					
Protection rating		NEMA 4x					
Duty cycle		100 %					
Type of connection		Plug-in terminal strip					
Weight		80 kg	87 kg	80 kg	83 kg	90 kg	83 kg
Material		Stainless steel 1.4404 (V4A) (AISI 316L)					
Air throughput of fans	External circuit	640 m³/h			710 m³/h		
	Internal circuit	550 m³/h			640 m³/h		
Temperature control		Basic or Comfort controller (factory setting +35°C)					

Accessories	Packs of		Page
Door-operated switch	1	4127.000	1030
SK bus system for Comfort controller	1	3124.100	717
RiDiag II including cables for Comfort controller	1	3159.100	1154
Interface card for Comfort controller	1	3124.200	716
Condensate hose	1	3301.612	720

[1)] Delivery times available on request. [2)] Motor circuit-breaker.
Special voltages available on request. We reserve the right to make technical modifications.

Accessories Page 710 **Configuration software** Page 1155

for precision machine tools, useful cooling output 1000/1500 W



RITTAL TOP THERM PLUS

These new devices meet the current requirements of precision machine tools. This includes high acceleration values and a massive reduction in weight. The associated increased sensitivity to vibration also places greater demands on supply equipment such as cooling units.

Supply includes:
Nano-coated condenser and integral electronic condensate evaporation. Fully wired ready for connection, including drilling template and assembly parts.

Detailed drawing,
see page 1279.

Performance diagrams,
available on the Internet.

Property rights:
German registered design
no. 402 02 325
IR reg. design no. DM/062 557
with validity for FR, IT, ES
Indian registered design
no. 190 269
Japanese registered design
no. 1 187 905

Model No. SK with Basic controller, RAL 7035[1)]		**3304.142**	**3305.142**
Model No. SK with Comfort controller, RAL 7035[1)]		**3304.542**	**3305.542**
Rated operating voltage V, Hz		400, 3~, 50/ 460, 3~, 60	400, 3~, 50/ 460, 3~, 60
Dimensions in mm	W H D	400 950 260	400 950 260
Useful cooling output $\dot{Q}_K$ to DIN 3168	**L 35 L 35** **L 35 L 50**	**1000 W/1060 W** **790 W/840 W**	**1500 W/1510 W** **1230 W/1250 W**

Rated current max.		2.8 A/2.9 A	2.6 A/2.9 A
Start-up current		11.5 A/12.7 A	12.2 A/11.3 A
Pre-fuse T		Motor circuit breaker 6.3 A – 10.0 A	
Power consumption P_{el} to DIN 3168	L 35 L 35 L 35 L 50	700 W/675 W 785 W/800 W	925 W/1100 W 1085 W/1275 W
Refrigeration factor $\varepsilon = \dot{Q}_K/P_{el}$	L 35 L 35	1.4	1.9
Refrigerant		R134a, 500 g	R134a, 600 g
Permissible operating pressure p. max.		25 bar	
Temperature and setting range		+20°C to +55°C	
Protection category to EN 60 529/09.2000	External circuit	IP 34	
	Internal circuit	IP 54	
Duty cycle		100 %	
Type of connection		Plug-in terminal strip	
Weight		40 kg	42 kg
Air throughput of fans	External circuit	900 m³/h	
	Internal circuit	600 m³/h	800 m³/h
Temperature control		Basic or Comfort controller (factory setting +35°C)	

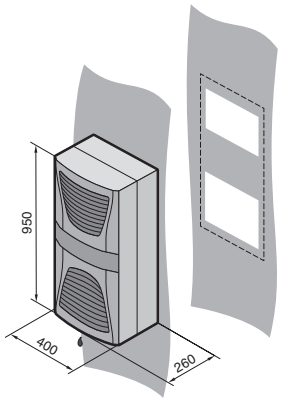
Accessories	Packs of		Page
Filter mats	3	3286.400	723
Metal filters	1	3286.410	724
Door-operated switch	1	4127.000	1030
SK bus system for Comfort controller	1	3124.100	717
RiDiag II including cables for Comfort controller	1	3159.100	1154
Interface card for Comfort controller	1	3124.200	716
Condensate hose	1	3301.612	720

[1)] Delivery times available on request.
Special voltages available on request. We reserve the right to make technical modifications.

Accessories Page 710 **Configuration software** Page 1155

Wall-mounted cooling units

Zone 22 (dust) explosion-proof cooling units, useful cooling output 1000/1500 W



These cooling units have been especially developed for controlling the climate in potentially explosive dust Zone 22 sectors.

Supply includes:
Fully wired ready for connection, including drilling template and assembly parts.

Detailed drawing,
see page 1279.

Performance diagrams,
available on the Internet.

RITTAL TOP THERM PLUS

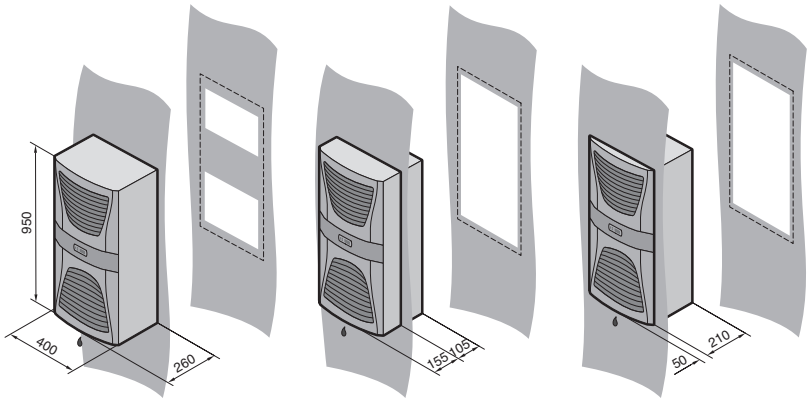
Model No. SK with Basic controller, RAL 7035		**3304.130**	**3304.160**	**3305.130**	**3305.160**
Model No. SK with Comfort controller, RAL 7035		**3304.530**	**3304.560**	**3305.530**	**3305.560**
Rated operating voltage V, Hz		230, 50/60	400, 3~, 50/400, 3~, 60	230, 50/60	400, 3~, 50/400, 3~, 60
Dimensions in mm	W H D	400 950 260		400 950 260	
Useful cooling output $\dot{Q}_K$ to DIN 3168	**L 35 L 35** **L 35 L 50**	**1000 W/1060 W** **790 W/840 W**		**1500 W/1510 W** **1230 W/1250 W**	
Rated current max.		4.8 A/4.4 A	2.5 A/2.6 A	5.4 A/6.0 A	2.3 A/2.6 A
Start-up current		12.0 A/14.0 A	11.5 A/12.7 A	22.0 A/24.0 A	12.2 A/11.3 A
Pre-fuse T		10.0 A/10.0 A	6.3 A – 10.0 A[1)]	16.0 A/16.0 A	6.3 A – 10.0 A[1)]
Power consumption P_{el} to DIN 3168	L 35 L 35 L 35 L 50	700 W/650 W 750 W/710 W	580 W/550 W 660 W/680 W	850 W/1000 W 1000 W/1160 W	800 W/980 W 960 W/1150 W
Refrigeration factor $\varepsilon = \dot{Q}_K/P_{el}$	L 35 L 35	1.4	1.7	1.8	1.9
Refrigerant		R134a, 325 g	R134a, 500 g	R134a, 600 g	
Permissible operating pressure p. max.		25 bar			
Temperature and setting range		+20°C to +55°C			
Protection category to EN 60 529/09.2000	External circuit	IP 34			
	Internal circuit	IP 54			
Duty cycle		100 %			
Type of connection		Plug-in terminal strip			
Weight		39 kg		41 kg	
Air throughput of fans	External circuit	900 m³/h			
	Internal circuit	600 m³/h		800 m³/h	
Temperature control		Basic or Comfort controller (factory setting +35°C)			

Accessories	Packs of		Page
Filter mats	3	3286.400	723
Door-operated switch	1	4127.000	1030
SK bus system for Comfort controller	1	3124.100	717
RiDiag II including cables for Comfort controller	1	3159.100	1154
Interface card for Comfort controller	1	3124.200	716
Condensate hose	1	3301.612	720

Delivery times available on request. Other ATEX version cooling units as well as special voltages available upon request.
We reserve the right to make technical modifications without giving prior notice.
[1)] Motor circuit breaker

Accessories Page 710

with CO_2 as the coolant, useful cooling output 1000 W



Environmentally friendly coolant
This generation of cooling units already uses the alternative CO_2 as the coolant for generating the cooling power.

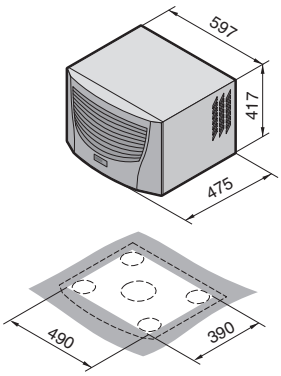
Supply includes:
Fully wired ready for connection, including automatic condensate evaporation, drilling template and assembly parts.

Accessories:

Roof plate for TS 8 with mounting cut-out,
see page 718.

Detailed drawing,
see page 1277 or page 1279.

RITTAL TOP THERM PLUS



Model No. SK with Comfort controller		3383.740 (roof-mounting)	3304.740 (wall-mounting)
Rated operating voltage V, Hz		230, 50/60	
Dimensions in mm	WHD	597 x 417 x 475	400 x 950 x 260
Useful cooling output $\dot{Q}_K$ to DIN 3168	**L 35 L 35**	**1000 W**	

Temperature and setting range		+20°C to +55°C	
Protection category to EN 60 529/09.2000	External circuit	IP 34	
	Internal circuit	IP 54	
Duty cycle		100 %	
Type of connection		Plug-in terminal strip	
Weight		42 kg	47 kg
Colour		RAL 7035	
Air throughput of fans	External circuit	1760 m³/h	900 m³/h
	Internal circuit	440 m³/h	600 m³/h
Temperature control		Basic or Comfort controller (factory setting +35°C)	

Accessories	Packs of			Page
Filter mats	3	3286.500	3286.400	723
Metal filters	1	3286.510	3286.410	724
Door-operated switch	1	4127.000		1030
Air ducting system	1	3286.870	–	711
Cover stoppers for interior air outlet	2	3286.880	–	712
Condensate hose	1	3301.612		720

We reserve the right to make technical modifications without giving prior notice. Other specifications available upon request.

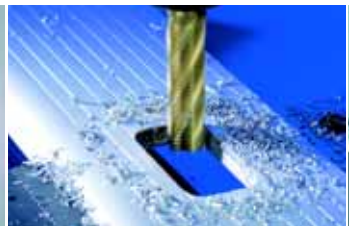
Accessories Page 710

Features

Recooling systems ensure centralised, efficient cooling and provision of the cooling medium (generally water). For example, all cooling tasks on a system or machine can be solved via a single pipeline system. Spatial separation between cooling production and process cooling can be achieved with recooling systems.

Application diversity of centralised cooling technology

Enclosure cooling
In conjunction with air/water heat exchangers, optimum dissipation of high heat loads is guaranteed, even under extreme ambient temperatures and air contamination levels.



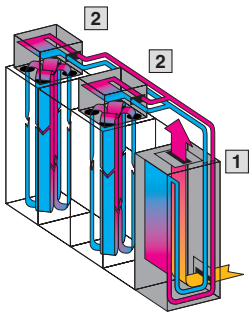
Cooling of liquid media
Direct and indirect cooling of liquids are the prerequisite for ensuring essential machine precision and speed.

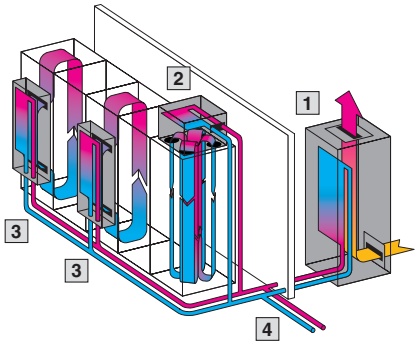
Process cooling
High-quality material processing, such as laser cutting, necessitates high levels of temperature precision with simultaneous cooling of the peripheral technology.

Siting conditions

Unity with enclosures
For example, recooling systems may be connected directly to a bayed enclosure suite, providing effective, centralised cooling of all cases and enclosures on a machine or plant.

1 Recooling system
2 Air/water heat exchanger, roof-mounted
3 Air/water heat exchanger, wall-mounted
4 Other components, e. g. machine cooling





Spatially separated
High heat loads can even be dissipated in confined and awkward spaces, thanks to the spatial separation of the recooling system from the enclosures and machine. In all cases, as well as enclosure cooling, cooling water may also be produced for process and machine cooling or for cooling liquid media.

Standard RiNano-coating

Mini recooling systems (roof/wall mounted) with RiNano-coating as standard.

The heat exchanger lamella's ultra-thin, glass-like seals prevent dirt from settling on the condenser.

Benefits:

- A single system for enclosure cooling, process and machine cooling, and the cooling of liquid media.
- Integration into bayed enclosure suites
- Individual project planning
- Commissioning and servicing

Important:

- Cooling output calculated at an ambient temperature of 32°C and an inlet temperature of 10°C and 18°C (water)/20°C (oil)

Project planning examples

Example 1

Production line

High-quality material processing requires a high degree of temperature precision with simultaneous cooling of the peripheral technology. This task – the cost-effective cooling of various equipment in the production line – is performed centrally by the recooling system in an industrial enclosure. It supplies the machine and process cooling with the required cooling water, as well as supplying the control enclosures via air/water heat exchangers.

Example 2

Test laboratory

Every single product is subjected to in-depth functional and quality testing at the in-house test laboratory. In order to ensure that the test process runs smoothly, the control enclosures are cooled via air/water heat exchangers, and the three test benches are supplied with the required cooling water in line with requirements. These diverse cooling tasks are performed by the recooling system integrated into the TS 8 Top enclosure system. Visually, they form a single unit with the TS 8 control cabinets.

Example 3

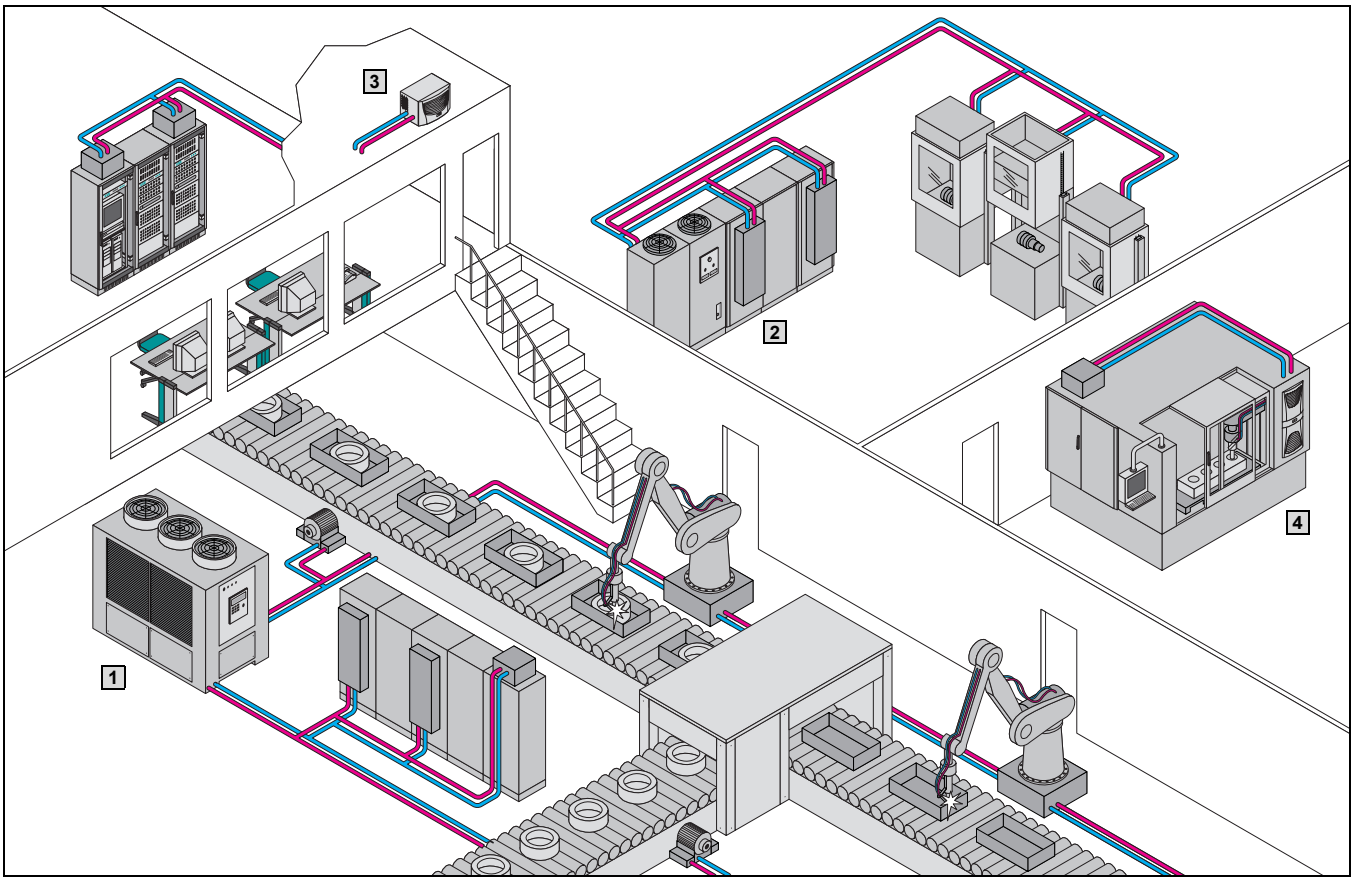
Control room

In conjunction with air/water heat exchangers, the server and network enclosures installed in the production control room are cooled by a Mini recooling system. To avoid contaminating the room air, and to facilitate optimum dissipation of the heat loss generated by the recooling systems, this is installed outside of the production control room.

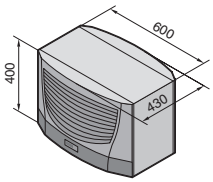
Example 4

Tool production

The heat loss generated during tool machining (e. g. by water-cooled motor spindles with high-frequency drives) must be dissipated efficiently. In such cases, this task is performed by a wall-mounted Mini recooling system which at the same time ensures cooling of the control unit, likewise integrated into the machine.



Mini, cooling output 960/1490 W



RITTAL TOP THERM PLUS

Technical design:
- Compact, modular structure of the cooling components on a base plate designed as a collecting tray.
- Medium-flow pumps.
- Precise temperature control, based on microprocessor technology.
- Collective fault signal with floating contact.
- Application-specific special equipment available on request.
- Pressure-sealed system (.600) or open system with tank (.610).

Supply includes:
Recooling system wired ready for connection, with multilingual documentation including functional diagram and wiring plans.

Note:
The illustration shows units with customer-specific options.

Approvals,
available on the Internet.

Detailed drawings,
available on the Internet.

Layout diagram,
see page 1284.

Characteristic curves of pump,
see page 1284.

Options,
see page 1282.

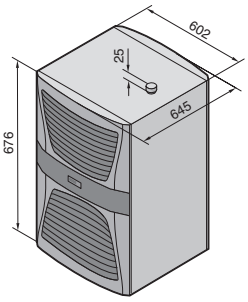
Model No. SK		**3318.600**	**3318.610**	**3319.600**	**3319.610**
Rated operating voltage V, Hz		230, 50/60			
Dimensions in mm	W H D	600 400 430			
Cooling output at **T_w = 10°C/T_u = 32°C** **T_w = 18°C/T_u = 32°C**		**780 W/870 W** **960 W/1070 W**		**1200 W/1330 W** **1490 W/1660 W**	
Power consumption		630 W/780 W		845 W/1050 W	
Rated current max.		4.2 A		5.4 A	
Refrigerant		R134a			
$P_{max.}$ Cooling circuit		25 bar			
Temperature range	Environment	+15°C to +43°C			
	Liquid media	+15°C to +25°C			
Pump capacity		See characteristic curve			
Tank		Pressure-sealed	Made from PP plastic	Pressure-sealed	Made from PP plastic
Tank capacity		–	2.5 l	–	2.5 l
Water connections		1/2″ internal thread			
Weight		48 kg		51 kg	
Colour		RAL 7035			
Protection category (electrics)		IP 44			
Air throughput of fans		900 m³/h			
Temperature control		Microcontroller control, setting range +10°C to +25°C (factory setting +18°C)			

Accessories	Packs of		Page
Metal filter mat	1	3286.510	724

Special voltages and technical modifications available on request.

Air/water heat exchangers From page 676 **Overflow valve** Page 722 **Additives** Page 722

Mini, cooling output 3000/4500 W



RITTAL TOP THERM PLUS

Technical design:
- Compact, modular configuration of the cooling components with integral water tank.
- Integral tank level display.
- Medium-flow pumps.
- Precise temperature control, based on microprocessor technology.
- Collective fault signal with floating contact.
- Application-specific special equipment available on request.

Supply includes:
Recooling system wired ready for connection, with multilingual documentation including functional diagram and wiring plans.

Note:
The illustration shows units with customer-specific options.

Approvals,
available on the Internet.

Detailed drawings,
available on the Internet.

Layout diagram,
see page 1284.

Characteristic curves of pump,
see page 1284.

Options,
see page 1282.

Model No. SK		**3320.600**	**3334.600**
Rated operating voltage V, Hz		400, 3~, 50/60/460, 3~, 60[1)]	
Dimensions in mm	W H D	602 676 645	
Cooling output at **T_w = 10°C/T_u = 32°C** **T_w = 18°C/T_u = 32°C**		**2650 W/3000 W** **3000 W/3400 W**	**3900 W/4700 W** **4500 W/5400 W**

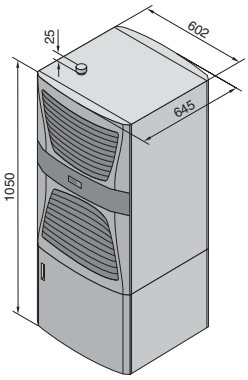
Power consumption		1716 W/1953 W	2001 W/2505 W
Rated current max.		3.8 A/4.6 A/3.9 A	4.9 A/5.9 A/5.0 A
Refrigerant		R134a	
$P_{max.}$ cooling circuit		25 bar	
Temperature range	Environment	+15°C to +43°C	
	Liquid media	+15°C to +25°C	
Pump capacity		See characteristic curve	
Tank		Made from stainless steel 1.4301 (AISI 304)	
Tank capacity		30 l	
Water connections		1/2″ internal thread	
Weight		88 kg	94 kg
Colour		RAL 7035	
Protection category (electrics)		IP 44	
Air throughput of fans		1785 m³/h	
Temperature control		Microcontroller control, setting range +10°C to +25°C (factory setting +18°C)	

Accessories	Packs of		Page
Metal filter mat	1	3286.520	724

[1)] Supports multiple voltages without rewiring.
Special voltages and technical modifications available on request.

Air/water heat exchangers From page 676 **Overflow valve** Page 722 **Additives** Page 722

Mini, cooling output 6000 W



RITTAL TOP THERM PLUS

Technical design:
- Compact, modular configuration of the cooling components with integral water tank.
- Integral tank level display.
- Medium-flow pumps.
- Precise cooling control based on microprocessor technology.
- Collective fault signal with floating contact.
- Application-specific special equipment available on request.

Supply includes:
Recooling system wired ready for connection, with multilingual documentation including functional diagram and wiring plans.

Detailed drawings,
available on the Internet.

Layout diagram,
see page 1284.

Characteristic curves of pump,
see page 1284.

Model No. SK		**3334.660**
Rated operating voltage V, Hz		400, 3~, 50/60/460, 3~, 60[1)]
Dimensions in mm	W H D	602 1050 645
Cooling output at **T_w = 10°C/T_u = 32°C** **T_w = 18°C/T_u = 32°C**		 **4800 W/5150 W/5150 W** **6000 W/6600 W/6600 W**

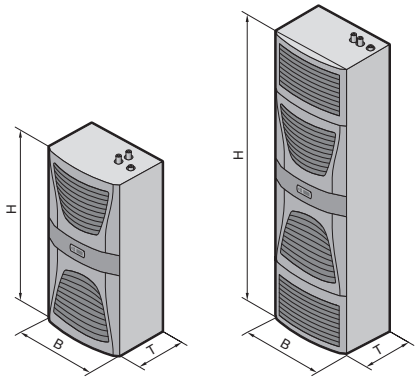
Power consumption		4280 W/5140 W/5080 W
Rated current max.		8.09 A/9.7 A/8.04 A
Refrigerant		R134a
$P_{max.}$ cooling circuit		25 bar
Temperature range	Environment	+15°C to +43°C
	Liquid media	+15°C to +25°C
Pump capacity		See characteristic curve
Tank		Made from stainless steel 1.4301 (AISI 304)
Tank capacity		30 l
Water connections		3/4″ internal thread
Weight		120 kg
Colour		RAL 7035
Protection category (electrics)		IP 44
Air throughput of fans		2200/2500 m³/h
Temperature control		Microcontroller control, setting range +10°C to +25°C (factory setting +18°C)

Accessories	Packs of		Page
Metal filter mat	1	3286.520	724

[1)] Supports multiple voltages without rewiring.
Special voltages and technical modifications available on request.

Air/water heat exchangers From page 676 **Overflow valve** Page 722 **Additives** Page 722

Mini, for wall mounting, cooling output 1000/2500/4000 W



B = Width
T = Depth

Technical design:
- Compact, modular configuration of the cooling components with integral water tank.
- Application-specific special equipment available on request.
- Open system with tank.

Supply includes:
Recooling system wired ready for connection, with multilingual documentation including functional diagram and wiring plans.

Note:
The illustration shows units with customer-specific options.

Approvals,
available on the Internet.

Detailed drawings,
available on the Internet.

Layout diagram,
see page 1285.

Characteristic curves of pump,
see page 1285.

Options,
see page 1282.

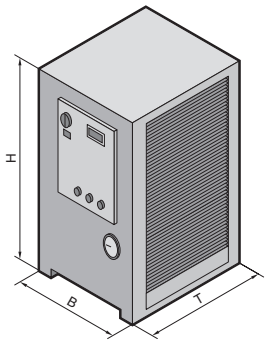
Model No. SK		**3360.100**	**3360.250**	**3360.470**
Rated operating voltage V, Hz		400, 3~, 50/60/460, 3~, 60[1]		
Dimensions in mm	W H D	400 950 310	400 1580 290	500 1580 390
Cooling output at **T_w = 10°C/T_u = 32°C** **T_w = 18°C/T_u = 32°C**		**830 W/930 W** **1000 W/1120 W**	**2100 W/2350 W** **2500 W/2800 W**	**3300 W/3700 W** **4000 W/4500 W**
Power consumption		700 W/760 W	1550 W/2000 W	1850 W/2740 W
Rated current max.		2.7 A/3.0 A	3.7 A/3.8 A	4.6 A/5.2 A
Refrigerant		R134a		
$P_{max.}$ cooling circuit		23 bar		
Temperature range	Environment	+15°C to +43°C		
	Liquid media	+10°C to +25°C		
Pump capacity		See characteristic curve		
Tank		Made from PP plastic		
Tank capacity		5 l	10 l	15 l
Water connections		Quick-release coupling (counterpart included in accessory bag)		$^3/_4$″ internal thread
Weight		47 kg	78 kg	103 kg
Colour		RAL 7035		
Protection category (electrics)		IP 44		
Air throughput of fans		500 m³/h	710 m³/h	2000 m³/h
Temperature control		Microcontroller control, setting range +10°C to +30°C (factory setting +18°C)		

Accessories	Packs of		Page
Filter mat	1	3286.400	723
Metal filter mat	1	3286.410	724

[1] Supports multiple voltages without rewiring.
Special voltages and technical modifications available on request.

Air/water heat exchangers From page 676 **Overflow valve** Page 722 **Additives** Page 722

In floor-standing enclosure, cooling output 2100 to 7700 W



B = Width
T = Depth

Technical design:
- Robust industrial standard in 3 enclosure sizes.
- Identical basic enclosure for oil and water recooling systems.
- Spare space for the integration of special equipment
- Variable air routing is possible via the l/h or r/h side panel
- Floating contact for collective fault signal.
- Anti-frost sensor.
- Multi-coil vaporiser in the tank.

Supply includes:
Recooling system wired ready for connection, with multilingual documentation including functional diagram and wiring plans.

Note:
The illustration shows units with customer-specific options.

Accessories:

Metal filter mats, castors and bypass valve available on request.

Approvals,
available on the Internet.

Detailed drawings,
available on the Internet.

Layout diagram,
see page 1285.

Characteristic curves of pump,
see page 1285.

Options,
see page 1282.

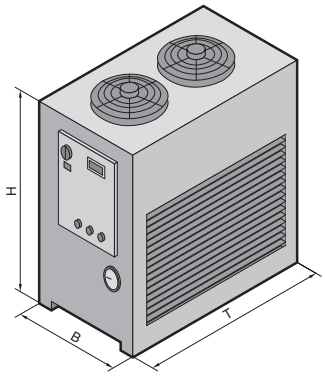
Model No. SK		**3336.100**	**3336.200**	**3336.300**	**3336.500**	**3336.600**	**3336.650**
Rated operating voltage V, Hz		400, 3~, 50					
Dimensions in mm	W H D	470 725 540	485 965 650		595 1180 800		
Cooling output at **T_w = 10°C/T_u = 32°C** **T_w = 18°C/T_u = 32°C**		**1700 W** **2100 W**	**2100 W** **2580 W**	**2300 W** **3360 W**	**3550 W** **5040 W**	**4800 W** **6160 W**	**5200 W** **7700 W**

Power consumption		1.5 kW	1.7 kW	2.3 kW	2.9 kW	3.7 kW	3.9 kW
Rated current max.		3.4 A	3.0 A	4.2 A	5.5 A	6.2 A	7.3 A
Refrigerant		R134a					
$P_{max.}$ cooling circuit		24 bar					
Temperature range	Environment	+15°C to +43°C					
	Liquid media	+15°C to +25°C					
Pump capacity		See characteristic curve					
Tank		Made from stainless steel 1.4301 (AISI 304)					
Tank capacity		17 l	33 l		57 l		
Water connections		3/4″ internal thread			1″ internal thread		
Weight		75 kg	97 kg	99 kg	141 kg	143 kg	147 kg
Colour		RAL 7035					
Protection category (electrics)		IP 54					
Air throughput of fans		700 m³/h	1250 m³/h	1785 m³/h	3140 m³/h		
Temperature control		Electronic control with digital display, setting range +10°C to +25°C (factory setting +18°C)					

Delivery times available on request.
Special voltages, other frequencies, and technical modifications available on request.

Air/water heat exchangers From page 676 **Overflow valve** Page 722 **Additives** Page 722

In floor-standing enclosure, cooling output 10000 to 25200 W



B = Width
T = Depth

Technical design:
- Robust industrial housing in 2 enclosure sizes.
- Identical basic enclosure for oil and water recooling systems.
- Integration of application-specific special equipment on request.
- Variable air routing is possible via the l/h or r/h side panel.
- Optimum accessibility for servicing purposes by removing the side panel.
- Floating contact for collective fault signal.
- Flow monitor.

Supply includes:
Recooling system wired ready for connection, with multilingual documentation including functional diagram and wiring plans.

Note:
The illustration shows units with customer-specific options.

Accessories:

Metal filter mats, castors, eyebolts and bypass valve available on request.

Approvals,
available on the Internet.

Detailed drawings,
available on the Internet.

Layout diagram,
see page 1286.

Characteristic curves of pump,
see page 1286.

Options,
see page 1282.

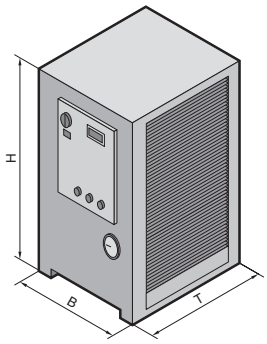
Model No. SK		**3336.700**	**3336.710**	**3336.720**	**3336.730**	**3336.740**	**3336.750**
Rated operating voltage V/Hz		400, 3~, 50					
Dimensions in mm	W H D	615 1178 1160			715 1178 1360		
Cooling output at **T_w = 10°C/T_u = 32°C** **T_w = 18°C/T_u = 32°C**		**8250 W** **10000 W**	**11900 W** **14350 W**	**13450 W** **16300 W**	**15000 W** **18500 W**	**17000 W** **20900 W**	**20600 W** **25200 W**

Power consumption		3800 W	4800 W	5300 W	6400 W	7100 W	13120 W
Rated current max.		10.6 A	13.1 A	14.1 A	16.2 A	18.2 A	23.7 A
Refrigerant		R407C					
$P_{max.}$ cooling circuit		27 bar					
Temperature range	Environment	+15°C to +43°C[1)]					
	Liquid media	+15°C to +25°C					
Pump capacity		See characteristic curve					
Tank		Made from stainless steel 1.4301 (AISI 304)					
Tank capacity		60 l			100 l		
Water connections		1″ internal thread					
Weight		215 kg	225 kg	235 kg	240 kg	250 kg	260 kg
Colour		RAL 7035					
Protection category (electrics)		IP 54					
Air throughput of fans		6280 m³/h			10880 m³/h		
Temperature control		Electronic control with digital display, setting range +10°C to +25°C (factory setting +18°C)					

[1)] SK 3336.720 and SK 3336.750 +15°C to +40°C.
Delivery times available on request.
Special voltages and technical modifications available on request.

Air/water heat exchangers From page 676 **Overflow valve** Page 722 **Additives** Page 722

In floor-standing enclosure for oil, cooling output 2550 to 7900 W



B = Width
T = Depth

Technical design:
- Robust industrial standard in 2 enclosure sizes.
- Identical basic enclosure for oil and water recooling systems.
- Variable air routing is possible via the l/h or r/h side panel.
- High-capacity gear pump.
- Floating contact for collective fault signal.
- Integration of application-specific special equipment on request.

Supply includes:
Recooling system wired ready for connection, with multilingual documentation including functional diagram and wiring plans.

Note:
The illustration shows units with customer-specific options.

Accessories:

Metal filter mats and castors available on request.

Approvals,
available on the Internet.

Detailed drawings,
available on the Internet.

Layout diagram,
see page 1286.

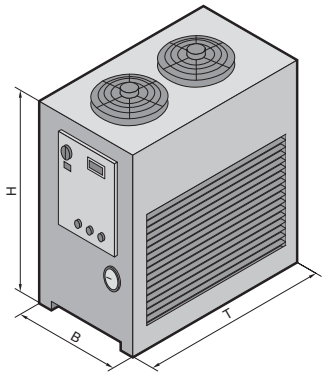
Options,
see page 1282.

Model No. SK		**3337.200**	**3337.300**	**3337.500**	**3337.600**	**3337.650**
Rated operating voltage V, Hz		400, 3~, 50				
Dimensions in mm	W H D	485 965 650		595 1180 800		
Cooling output with oil ISO VG 32 **T_{oil} = 20°C** **T_u = 32°C**		**2550 W**	**3400 W**	**5150 W**	**6700 W**	**7900 W**
Power consumption		1.4 kW	1.9 kW	3.0 kW	3.9 kW	4.9 kW
Rated current max.		3.1 A	3.5 A	5.0 A	7.0 A	7.8 A
Refrigerant		R134a				
$P_{max.}$ cooling circuit		24 bar				
Temperature range	Environment	+15°C to +43°C				
	Liquid media	+15°C to +25°C				
Pump capacity at 10 bar		10 l/min		24 l/min		
Optional tank		Made from stainless steel 1.4301 (AISI 304)				
Optional tank capacity		33 l		57 l		
Connections		3/4″ internal thread		1″ internal thread		
Weight		103 kg	105 kg	148 kg	150 kg	154 kg
Colour		RAL 7035				
Protection category (electrics)		IP 54				
Air throughput of fans		1250 m³/h	1785 m³/h	3140 m³/h		
Temperature control		Electronic control with digital display, setting range +15°C to +35°C (factory setting +20°C)				

Delivery times available on request.
Special voltages, other frequencies, and technical modifications available on request.

Layout diagram Page 1286

In floor-standing enclosure for oil, cooling output 10600 to 26100 W



B = Width
T = Depth

Technical design:
- Robust industrial housing in 2 enclosure sizes.
- Identical basic enclosure for oil and water recooling systems.
- Variable air routing is possible via the l/h or r/h side panel.
- Optimum accessibility for servicing purposes by removing the side panel.
- High-capacity gear pump.
- Floating contact for collective fault signal.
- Integration of application-specific special equipment on request.

Supply includes:
Recooling system wired ready for connection, with multilingual documentation including functional diagram and wiring plans.

Note:
The illustration shows units with customer-specific options.

Accessories:

Metal filter mats and castors available on request.

Approvals,
available on the Internet.

Detailed drawings,
available on the Internet.

Layout diagram,
see page 1287.

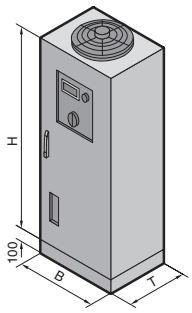
Options,
see page 1282.

Model No. SK		**3337.700**	**3337.710**	**3337.720**	**3337.730**	**3337.740**	**3337.750**
Rated operating voltage V, Hz		400, 3~, 50					
Dimensions in mm	W H D	615 1178 1160			715 1178 1360		
Cooling output with oil ISO VG 32 **T_{oil} = 20°C** **T_u = 32°C**		**10600 W**	**15150 W**	**17200 W**	**19250 W**	**21600 W**	**26100 W**
Power consumption		5300 W	6400 W	7100 W	8700 W	9600 W	10500 W
Rated current max.		12.0 A	15.0 A	16.0 A	19.0 A	21.0 A	22.0 A
Refrigerant		R407C					
$P_{max.}$ cooling circuit		28 bar					
Temperature range	Environment	+15°C to +43°C[1)]					
	Liquid media	+15°C to +25°C					
Pump capacity at 10 bar		45 l/min			68 l/min		
Optional tank		Made from stainless steel 1.4301 (AISI 304)					
Optional tank capacity		60 l			100 l		
Connections		1″ internal thread					
Weight		222 kg	232 kg	242 kg	248 kg	258 kg	268 kg
Colour		RAL 7035					
Protection category (electrics)		IP 54					
Air throughput of fans		6280 m³/h			10880 m³/h		
Temperature control		Electronic control with digital display, setting range +15°C to +35°C (factory setting +20°C)					

[1)] SK 3337.720 and SK 3337.750 +15°C to +40°C.
Delivery times available on request.
Special voltages, other refrigerants, and technical modifications available on request.

Layout diagram Page 1287

In TS 8 Top enclosure system, cooling output 6000/7500 W



B = Width
T = Depth

Technical design:
- Compact structure with control components in the front and air intake via the rear.
- Suitable for bayed siting.
- Special fittings and options available on request.
- Float-actuated switch as protection against running dry.
- Floating collective fault signal.
- Equipped with Grundfos pumps and Siemens components.
- Service accessibility from all sides.

Supply includes:
Recooling system wired ready for connection, with multilingual documentation including functional diagram and wiring plans.

Note:
The illustration shows units with customer-specific options.

Accessories:

Metal filter mat and bypass valve available on request.

Approvals,
available on the Internet.

Detailed drawings,
available on the Internet.

Layout diagram,
see page 1287.

Characteristic curves of pump,
see page 1287.

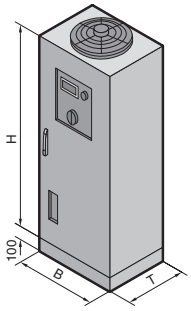
Options,
see page 1282.

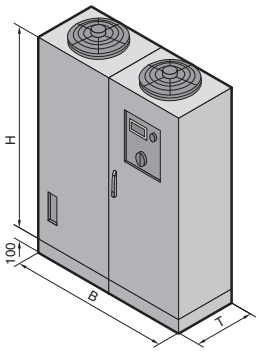
Model No. SK		**3335.060**	**3335.075**
Rated operating voltage V, Hz		400, 3~, 50	
Dimensions in mm	W H D	600 2000 600	
Base/plinth height mm		100	
Cooling output at **T_w = 10°C/T_u = 32°C** **T_w = 18°C/T_u = 32°C**		 **4800 W** **6000 W**	 **6000 W** **7500 W**
Power consumption		2.4 kW	3.0 kW
Rated current max.		7.6 A	8.1 A
Refrigerant		R407C	
$P_{max.}$ cooling circuit		24 bar	
Temperature range	Environment	+10°C to +43°C	
	Liquid media	+15°C to +25°C	
Pump capacity		See characteristic curve	
Tank		Made from PP plastic	
Tank capacity		80 l	
Water connections		3/4″ internal thread	
Weight		180 kg	190 kg
Colour		RAL 7035	
Protection category (electrics)		IP 54	
Air throughput of fans		4000 m³/h	
Temperature control		Electronic control with digital display, setting range +10°C to +30°C (factory setting +18°C)	

Delivery times available on request.
Special voltages, other frequencies and refrigerants, and technical modifications available on request.

Air/water heat exchangers From page 676 **TS 8 lock systems** From page 947 **TS 8 baying system** From page 138 **Overflow valve** Page 722
Additives Page 722

In TS 8 Top enclosure system, cooling output 10000 to 25000 W





B = Width
T = Depth

Technical design:
- Compact structure with control components in the front and air intake via the rear.
- Suitable for bayed siting.
- Special fittings and options available on request.
- Float-actuated switch as protection against running dry.
- Floating collective fault signal.
- Magnetic valve in the cooling circuit.
- Equipped with Grundfos pumps and Siemens components.
- Service accessibility from all sides.

Supply includes:
Recooling system wired ready for connection, with multilingual documentation including functional diagram and wiring plans.

Note:
The illustration shows units with customer-specific options.

Accessories:
Metal filter mat and bypass valve available on request.

Approvals,
available on the Internet.

Detailed drawings,
available on the Internet.

Layout diagram,
see page 1287.

Characteristic curves of pump,
see page 1287.

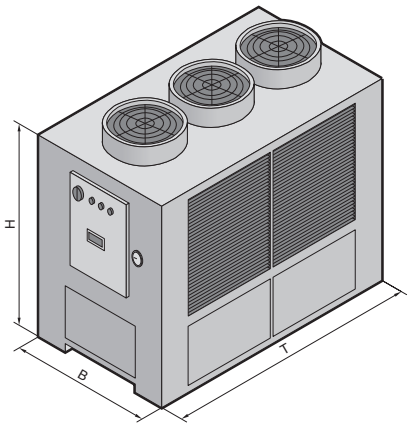
Options,
see page 1282.

Model No. SK		**3335.100**	**3335.120**	**3335.150**	**3335.200**	**3335.250**
Rated operating voltage V, Hz		400, 3~, 50				
Dimensions in mm	W H D	800 2000 600			1200 2000 600	
Base/plinth height mm		100				
Cooling output at **T_w = 10°C/T_u = 32°C** **T_w = 18°C/T_u = 32°C**		**8000 W** **10000 W**	**10000 W** **12000 W**	**11500 W** **15000 W**	**17000 W** **20000 W**	**22000 W** **25000 W**
Power consumption		4.0 kW	4.8 kW	6.0 kW	8.0 kW	10.0 kW
Rated current max.		12.5 A	17.3 A	18.5 A	23.5 A	27.5 A
Refrigerant		R407C				
$P_{max.}$ cooling circuit		24 bar				
Temperature range	Environment	+15°C to +43°C				
	Liquid media	+15°C to +25°C				
Pump capacity		See characteristic curve				
Tank		Made from PP plastic				
Tank capacity		120 l			240 l	
Water connections		3/4″ internal thread			1″ internal thread	
Weight		250 kg	270 kg	380 kg	530 kg	560 kg
Colour		RAL 7035				
Protection category (electrics)		IP 54				
Air throughput of fans		6000 m³/h			8000 m³/h	
Temperature control		Electronic control with digital display, setting range +10°C to +30°C (factory setting +18°C)				

Delivery times available on request.
Special voltages, other frequencies, and technical modifications available on request.

Air/water heat exchangers From page 676 **TS 8 lock systems** From page 947 **TS 8 baying system** From page 138 **Overflow valve** Page 722
Additives Page 722

In industrial enclosure, cooling output 32 kW to 172 kW



B = Width
T = Depth

Technical design:
- Robust industrial enclosure.
- Optimum service accessbility by removing the panels.
- Floating contact for collective fault signal.
- Integration of application-specific special equipment on request.

Supply includes:
Recooling system wired ready for connection, with multilingual documentation including functional diagram and wiring plans.

Note:
The illustration shows units with customer-specific options.

Accessories:

Metal filter mat
available on request.

Approvals,
available on the Internet.

Detailed drawings,
available on the Internet.

Layout diagram,
see page 1288.

Characteristic curves of pump,
see page 1288.

Options,
see page 1282.

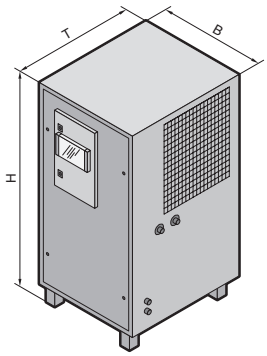
Model No. SK		**3339.100**	**3339.200**	**3339.250**	**3339.280**	**3339.300**	**3339.400**	**3339.450**	**3339.500**
Rated operating voltage V, Hz		400, 3~, 50							
Dimensions in mm	W H D	815 1400 1560		1000 1800 2000		1550 2000 2500		1550 2000 3400	1630 2200 3400
Cooling output at **T_w = 10°C/T_u = 32°C** **T_w = 18°C/T_u = 32°C**		**26150/31350 W** **32025/38430 W**	**29550/35450 W** **36225/43480 W**	**40000 W** **46750 W**	**52000 W** **59000 W**	**54700 W** **66700 W**	**62200 W** **75900 W**	**100000 W** **110000 W**	**141000 W** **172200 W**

Power consumption		18300 W	18600 W	20600 W	36800 W	27000 W	28300 W	50000 W	61000 W
Rated current max.		29.2 A	30.7 A	36.8 A	46.1 A	67.0 A	74.0 A	108.0 A	108.0 A
Refrigerant		R407C							
$P_{max.}$ cooling circuit		28 bar							
Temperature range	Environment	+15°C to +43°C		+15°C to +40°C		+15°C to +43°C			
	Liquid media	+15°C to +25°C							
Pump capacity		See characteristic curve							
Tank		Made from stainless steel 1.4301 (AISI 304)				Pressure-sealed		Made from stainless steel 1.4301 (AISI 304)	Pressure-sealed
Tank capacity		150 l		220 l		500 l			
Water connections		1 1/4″ internal thread		1 1/2″ internal thread		2″ internal thread		3″ internal thread	
Weight		280 kg	300 kg	680 kg	740 kg	800 kg	850 kg	950 kg	2100 kg
Colour		RAL 7035							
Protection category (electrics)		IP 44							
Air throughput of fans		18000 m³/h		32000 m³/h				40000 m³/h	48000 m³/h
Temperature control		Electronic control with digital display, setting range +10°C to +25°C (factory setting +18°C)							

Delivery times available on request.
Special voltages, other frequencies and refrigerants, and technical modifications available on request.

Air/water heat exchangers From page 676 **Overflow valve** Page 722 **Additives** Page 722

Chiller for IT cooling, cooling output 4000 to 36000 W



B = Width
T = Depth

Application:
Especially for cooling IT applications, such as LCP or air/water heat exchangers. Safety-relevant options such as redundant pumps, emergency cooling or buffer store are the distinguishing features of these atmospherically sealed systems.

Technical design:
- Compact design with control components on the front and air intake via the right-hand side panel, air outlet via the left-hand side panel.
- Pressure-sealed system.
- Digital thermostat for temperature control with setpoint and actual value display.
- Integral automatic bypass valve.
- Flow monitor.
- Roof plate of stainless steel 1.4301 (AISI 304), spray-finished in RAL 7035.
- Integration of application-specific special equipment on request.

Supply includes:
Chiller wired ready for connection, with multilingual documentation including functional diagram and wiring plans.

Note:
The illustration shows a unit with customer-specific options.

Options:
- Aluminium filter
- Contamination monitoring for aluminium filter
- Reinforced pump
- Double pump unit
- Heat recovery
- Vibration components
- Free cooling
- Buffer store for separate siting
- Control unit for redundancy operation
- Emergency cooling with mains water infeed
- Special voltages
- Special spray finish

Layout diagram,
see page 1289.

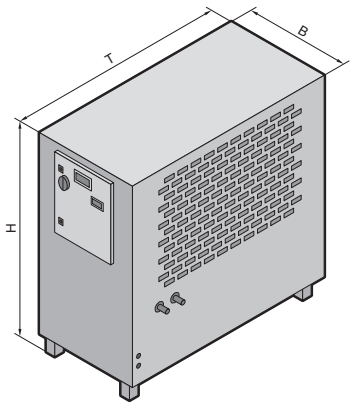
Characteristic curves of pump,
see page 1289.

Model No. SK		**3300.900**	**3300.901**	**3300.902**	**3300.905**	**3300.910**
Rated operating voltage V, Hz		400, 3~, 50				
Dimensions in mm	W H D	670 1220 720	750 1600 880		900 1970 1450	
Base/plinth height mm		100				
Cooling output at T_w = 15°C/T_u = 32°C		**4000 W**	**8000 W**	**12000 W**	**24000 W**	**36000 W**
Power consumption		2300 W	3900 W	6100 W	10500 W	16000 W
Rated current max.		5.2 A	8.0 A	12.0 A	20.0 A	29.0 A
Refrigerant		R407C				
$P_{max.}$ cooling circuit		28 bar				
Temperature range	Environment	–20°C to +43°C				
	Liquid media	+10°C to +20°C				
Pump capacity		See characteristic curve				
Number of cooling circuits		1				
Tank with 10 mm condensate insulation		Steel				
Tank capacity		60 l	130 l		300 l	
Water connections		3/4″ external thread			1 1/4″ external thread	
Operating weight		160 kg	195 kg	380 kg	740 kg	860 kg
Colour		RAL 7035				
Protection category (electrics)		IP 54				
Air throughput of fans		2400 m³/h	2800 m³/h	6000 m³/h	10000 m³/h	11000 m³/h
Temperature control		Electronic control with digital display, setting range +10°C to +20°C (factory setting +15°C)				

Delivery times available on request. Technical modifications reserved.

Accessories Page 710

Chiller for IT cooling, cooling output 48000 to 150000 W



B = Width
T = Depth

Application:
Especially for cooling IT applications, such as LCP or air/water heat exchangers. Safety-relevant options such as redundant pumps, emergency cooling or buffer store are the distinguishing features of these atmospherically sealed systems.

Technical design:
- Compact design with control components on the front and air intake via the right-hand side panel, air outlet via the left-hand side panel.
- Pressure-sealed system.
- Digital thermostat for temperature control with setpoint and actual value display.
- Integral automatic bypass valve.
- Flow monitor.
- Roof plate of stainless steel 1.4301 (AISI 304), spray-finished in RAL 7035.
- Integration of application-specific special equipment on request.

Supply includes:
Chiller wired ready for connection, with multilingual documentation including functional diagram and wiring plans.

Note:
The illustration shows a unit with customer-specific options.

Options:
- Aluminium filter
- Contamination monitoring for aluminium filter
- Reinforced pump
- Double pump unit
- Heat recovery
- Vibration components
- Free cooling
- Buffer store for separate siting
- Control unit for redundancy operation
- Emergency cooling with mains water infeed
- Special voltages
- Special spray finish

Layout diagram,
see page 1289.

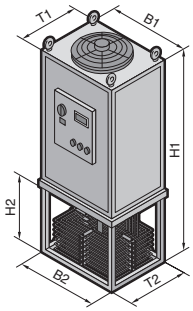
Characteristic curves of pump,
see page 1289.

Model No. SK		**3300.912**	**3300.915**	**3300.920**	**3300.925**	**3300.930**
Rated operating voltage V, Hz		400, 3~, 50				
Dimensions in mm	W H D	900 2000 2400	900 2000 2400	900 2000 2800	1000 2400 3300	
Base/plinth height mm		100				
Cooling output at T_w = 15°C/T_u = 32°C		**48000 W**	**60000 W**	**84000 W**	**120000 W**	**150000 W**
Power consumption		20500 W	24500 W	37000 W	50000 W	62000 W
Rated current max.		38.0 A	41.0 A	63.0 A	81.0 A	103.0 A
Refrigerant		R407C				
$P_{max.}$ cooling circuit		28 bar				
Temperature range	Environment	–20°C to +43°C				
	Liquid media	+10°C to +20°C				
Pump capacity		See characteristic curve				
Number of cooling circuits		2				
Tank with 10 mm condensate insulation		Steel				
Tank capacity		600 l			750 l	
Water connections		1 1/2″ external thread		2″ external thread	2 1/2″ external thread	
Operating weight		1350 kg	1400 kg	1950 kg	2500 kg	2700 kg
Colour		RAL 7035				
Protection category (electrics)		IP 54				
Air throughput of fans		22000 m³/h		40000 m³/h	44000 m³/h	
Temperature control		Electronic control with digital display, setting range +10°C to +20°C (factory setting +15°C)				

Delivery times available on request. Technical modifications reserved.

Accessories Page 710

for oil, cooling output 2400 to 5600 W



B = Width
T = Depth

Application:
Ideal for cooling contaminated cooling lubricants, such as drilling, cutting and grinding oils in machine tools. The units are placed on top of the oil tank and immersed in the fluid.

Technical design:
- For the cooling of oil.
- Robust industrial standard in 3 enclosure sizes.
- Flat evaporator coil insensitive to dirt.
- Bi-frequency components (50/60 Hz).

Supply includes:
Immersible recooling system wired ready for connection, **metal filter, eyebolts,** with multilingual documentation, including functional diagram and wiring plans.

Approvals,
available on the Internet.

Detailed drawings,
available on the Internet.

Layout diagram,
see page 1290.

Options,
see page 1283.

Model No. SK for oil		**3338.020**	**3338.040**	**3338.060**	**3338.080**
Rated operating voltage V, Hz		400, 3~, 50/460, 3~, 60			
Cooling output at T_{oil} = 20°C/T_u = 32°C		**2400 W/2700 W**	**3200 W/3600 W**	**4600 W/5200 W**	**5600 W/6300 W**
Dimensions in mm	B1 H1 T1	785 1650 785			
Dimensions of immersible part mm	B2 T2	719 719			
Immersion depth mm	H2	550			
Minimum media level with flat evaporator coil mm		205		280	

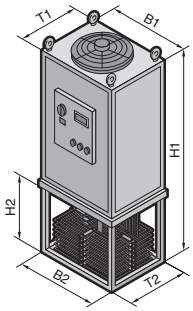
Power consumption		1.6 kW/1.9 kW	1.8 kW/2.2 kW	2.4 kW/3.0 kW	2.6 kW/3.3 kW
Rated current max.		3.5 A/3.7 A	3.8 A/4.0 A	5.5 A/5.9 A	5.6 A/5.8 A
Refrigerant		R134a			
$P_{max.}$ cooling circuit		24 bar			
Temperature range	Environment	+15°C to +42°C			
	Liquid media	+10°C to +25°C			
Weight		133 kg	143 kg	158 kg	173 kg
Colour		RAL 7035			
Protection category (electrics)		IP 44			
Air throughput of fans		1500/1560 m^3/h		2200/2350 m^3/h	
Temperature control		Electronic control with digital display, setting range +10°C to +25°C (factory setting +20°C)			

Delivery times available on request.
Special voltages available on request. Technical modifications reserved.

Layout diagram Page 1290

Immersible recooling systems

for oil, cooling output 8500 to 17300 W



B = Width
T = Depth

Application:
Ideal for cooling contaminated cooling lubricants, such as drilling, cutting and grinding oils in machine tools. The units are placed on top of the oil tank and immersed in the fluid.

Technical design:
- For the cooling of oil.
- Robust industrial standard in 3 enclosure sizes.
- Flat evaporator coil insensitive to dirt.
- Bi-frequency components (50/60 Hz).

Supply includes:
Immersible recooling system wired ready for connection, **metal filter, eyebolts,** with multilingual documentation, including functional diagram and wiring plans.

Approvals,
available on the Internet.

Detailed drawings,
available on the Internet.

Layout diagram,
see page 1290.

Options,
see page 1283.

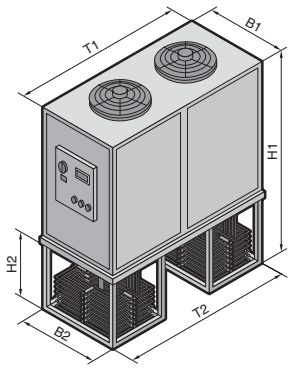
Model No. SK for oil		**3338.100**	**3338.120**	**3338.140**	**3338.160**	**3338.180**	**3338.200**
Rated operating voltage V, Hz		400, 3~, 50/460, 3~, 60					
Cooling output at T_{oil} = 20°C/T_u = 32°C		**8500 W/ 9500 W**	**10500 W/ 11800 W**	**12000 W/ 13400 W**	**13600 W/ 15200 W**	**15300 W/ 17100 W**	**17300 W/ 19400 W**
Dimensions in mm	B1 H1 T1	785 1650 785					
Dimensions of immersible part mm	B2 T2	719 719					
Immersion depth mm	H2	550					
Minimum media level with flat evaporator coil mm		330	380		430		

Power consumption		4.6 kW/5.5 kW	5.0 kW/6.0 kW	5.6 kW/6.6 kW	6.1 kW/7.3 kW	6.7 kW/8.1 kW	7.5 kW/9.0 kW
Rated current max.		8.4 A/8.6 A	9.2 A/9.3 A	10.1 A/10.5 A	11.1 A/11.5 A	12.1 A/12.4 A	13.3 A/13.7 A
Refrigerant		R407C					
$P_{max.}$ cooling circuit		27 bar					
Temperature range	Environment	+15°C to +42°C					
	Liquid media	+10°C to +25°C					
Weight		183 kg	203 kg	228 kg	248 kg	253 kg	263 kg
Colour		RAL 7035					
Protection category (electrics)		IP 54					
Air throughput of fans		7200/7480 m³/h			7900/8480 m³/h		
Temperature control		Electronic control with digital display, setting range +10°C to +25°C (factory setting +20°C)					

Delivery times available on request.
Special voltages available on request. Technical modifications reserved.

Layout diagram Page 1290

for oil, cooling output 20700 to 77900 W



B = Width
T = Depth

Application:
Ideal for cooling contaminated cooling lubricants, such as drilling, cutting and grinding oils in machine tools. The units are placed on top of the oil tank and immersed in the fluid.

Technical design:
- For the cooling of oil.
- Robust industrial standard in 3 enclosure sizes.
- Flat evaporator coil insensitive to dirt.
- Bi-frequency components (50/60 Hz).

Supply includes:
Immersible recooling system wired ready for connection, **metal filter, eyebolts,** with multilingual documentation, including functional diagram and wiring plans.

Approvals,
available on the Internet.

Detailed drawings,
available on the Internet.

Layout diagram,
see page 1290.

Options,
see page 1283.

Model No. SK for oil		**3338.220**	**3338.240**	**3338.260**	**3338.280**	**3338.300**	**3338.320**	**3338.340**	**3338.360**
Rated operating voltage V, Hz		400, 3~, 50/460, 3~, 60							
Cooling output at T_{oil} = 20°C/T_u = 32°C		**20700 W/ 23200 W**	**30800 W/ 34500 W**	**34900 W/ 39100 W**	**44500 W/ 49800 W**	**48600 W/ 54400 W**	**60600 W/ 67900 W**	**72600 W/ 81300 W**	**77900 W/ 87200 W**
Dimensions in mm	B1 H1 T1	785 1650 1830			1830 1650 1830				
Dimensions of immersible part mm	B2 T2	719 1764			1764 1764				
Immersion depth mm	H2	550							
Minimum media level with flat evaporator coil mm		380	430		380		430		

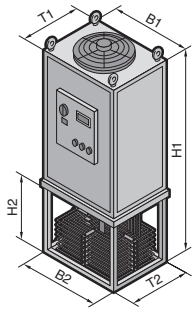
Power consumption		9.7 kW/ 9.9 kW	13.0 kW/ 16.2 kW	14.6 kW/ 18.2 kW	18.8 kW/ 22.6 kW	20.0 kW/ 24.1 kW	23.6 kW/ 28.5 kW	27.3 kW/ 32.9 kW	29.0 kW/ 34.9 kW
Rated current max.		17.3 A/ 17.8 A	21.6 A/ 23.0 A	24.3 A/ 25.5 A	35.5 A/ 35.2 A	35.4 A/ 35.8 A	42.7 A/ 42.9 A	50.0 A/ 50.0 A	53.0 A/ 53.0 A
Refrigerant		R407C							
$P_{max.}$ cooling circuit		27 bar							
Temperature range	Environment	+15°C to +45°C							
	Liquid media	+10°C to +25°C							
Weight		305 kg	380 kg		425 kg			435 kg	455 kg
Colour		RAL 7035							
Protection category (electrics)		IP 54							
Air throughput of fans		15000/15600 m³/h			30000/31200 m³/h				
Temperature control		Electronic control with digital display, setting range +10°C to +25°C (factory setting +20°C)							

Delivery times available on request.
Special voltages available on request. Technical modifications reserved.

Layout diagram Page 1290

Immersible recooling systems

for emulsion, cooling output 2400 to 5600 W



B = Width
T = Depth

Application:
Ideal for cooling contaminated cooling lubricants, such as drilling, cutting and grinding oils in machine tools. The units are placed on top of the emulsion tank and immersed in the fluid.

Technical design:
- For the cooling of emulsion.
- Robust industrial standard in 3 enclosure sizes.
- Flat evaporator coil insensitive to dirt.
- Bi-frequency components (50/60 Hz).

Supply includes:
Immersible recooling system wired ready for connection, **metal filter, eyebolts,** with multilingual documentation, including functional diagram and wiring plans.

Approvals,
available on the Internet.

Detailed drawings,
available on the Internet.

Layout diagram,
see page 1290.

Options,
see page 1283.

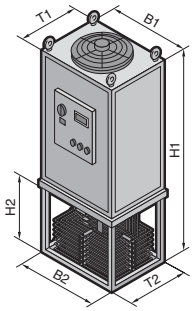
Model No. SK for emulsion		**3338.500**	**3338.520**	**3338.540**	**3338.560**
Rated operating voltage V, Hz		400, 3~, 50/460, 3~, 60			
Cooling output at T_{EM} = 20°C/T_u = 32°C		**2400 W/2700 W**	**3200 W/3600 W**	**4600 W/5200 W**	**5600 W/6300 W**
Dimensions in mm	B1 H1 T1	785 1650 785			
Dimensions of immersible part mm	B2 T2	719 719			
Immersion depth mm	H2	550			
Minimum media level with flat evaporator coil mm		180		205	

Power consumption		1.8 kW/2.1 kW	2.0 kW/2.5 kW	2.6 kW/3.2 kW	2.8 kW/3.6 kW
Rated current max.		3.8 A/4.0 A	4.1 A/4.3 A	5.9 A/6.3 A	6.0 A/6.3 A
Refrigerant		R134a			
$P_{max.}$ cooling circuit		24 bar			
Temperature range	Environment	+15°C to +42°C			
	Liquid media	+10°C to +25°C			
Weight		130 kg	140 kg	155 kg	170 kg
Colour		RAL 7035			
Protection category (electrics)		IP 44			
Air throughput of fans		1500/1560 m^3/h		2200/2350 m^3/h	
Temperature control		Electronic control with digital display, setting range +10°C to +25°C (factory setting +20°C)			

Delivery times available on request.
Special voltages available on request. Technical modifications reserved.

Layout diagram Page 1290

for emulsion, cooling output 8500 to 17300 W



B = Width
T = Depth

Application:
Ideal for cooling contaminated cooling lubricants, such as drilling, cutting and grinding oils in machine tools. The units are placed on top of the emulsion tank and immersed in the fluid.

Technical design:
- For the cooling of emulsion.
- Robust industrial standard in 3 enclosure sizes.
- Flat evaporator coil insensitive to dirt.
- Bi-frequency components (50/60 Hz).

Supply includes:
Immersible recooling system wired ready for connection, **metal filter, eyebolts,** with multilingual documentation, including functional diagram and wiring plans.

Approvals,
available on the Internet.

Detailed drawings,
available on the Internet.

Layout diagram,
see page 1290.

Options,
see page 1283.

Model No. SK for emulsion		**3338.580**	**3338.600**	**3338.620**	**3338.640**	**3338.660**	**3338.680**
Rated operating voltage V, Hz		400, 3~, 50/460, 3~, 60					
Cooling output at T_{EM} = 20°C/T_u = 32°C		**8500 W/ 9500 W**	**10500 W/ 11800 W**	**12000 W/ 13400 W**	**13600 W/ 15200 W**	**15300 W/ 17100 W**	**17300 W/ 19400 W**
Dimensions in mm	B1	785					
	H1	1650					
	T1	785					
Dimensions of immersible part mm	B2	719					
	T2	719					
Immersion depth mm	H2	550					
Minimum media level with flat evaporator coil mm		280			330		

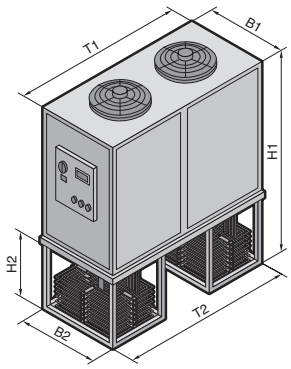
Power consumption		4.8 kW/5.7 kW	5.3 kW/6.3 kW	5.8 kW/6.8 kW	6.3 kW/7.6 kW	6.6 kW/8.5 kW	7.7 kW/9.3 kW
Rated current max.		8.9 A/9.0 A	9.6 A/9.9 A	10.6 A/11.2 A	11.5 A/12.0 A	12.5 A/13.2 A	13.7 A/14.1 A
Refrigerant		R407C					
P_{max}. cooling circuit		27 bar					
Temperature range	Environment	+15°C to +42°C					
	Liquid media	+10°C to +25°C					
Weight		180 kg	200 kg	225 kg	245 kg	250 kg	260 kg
Colour		RAL 7035					
Protection category (electrics)		IP 54					
Air throughput of fans		7200/7480 m³/h			7900/8480 m³/h		
Temperature control		Electronic control with digital display, setting range +10°C to +25°C (factory setting +20°C)					

Delivery times available on request.
Special voltages available on request. Technical modifications reserved.

Layout diagram Page 1290

Immersible recooling systems

for emulsion, cooling output 20700 to 77900 W



B = Width
T = Depth

Application:
Ideal for cooling contaminated cooling lubricants, such as drilling, cutting and grinding oils in machine tools. The units are placed on top of the emulsion tank and immersed in the fluid.

Technical design:
- For the cooling of emulsion.
- Robust industrial standard in 3 enclosure sizes.
- Flat evaporator coil insensitive to dirt.
- Bi-frequency components (50/60 Hz).

Supply includes:
Immersible recooling system wired ready for connection, **metal filter, eyebolts,** with multilingual documentation, including functional diagram and wiring plans.

Approvals,
available on the Internet.

Detailed drawings,
available on the Internet.

Layout diagram,
see page 1290.

Options,
see page 1283.

Model No. SK for emulsion		**3338.700**	**3338.720**	**3338.740**	**3338.760**	**3338.780**	**3338.800**	**3338.820**	**3338.840**
Rated operating voltage V, Hz		400, 3~, 50/460, 3~, 60							
Cooling output at T_{EM} = 20°C/T_u = 32°C		**20700 W/ 23200 W**	**30800 W/ 34500 W**	**34900 W/ 39100 W**	**44500 W/ 49800 W**	**48600 W/ 54400 W**	**60600 W/ 67900 W**	**72600 W/ 81300 W**	**77900 W/ 87200 W**
Dimensions in mm	B1 H1 T1	785 1650 1830			1830 1650 1830				
Dimensions of immersible part mm	B1 T2	719 1764			1764 1764				
Immersion depth mm	H2	550							
Minimum media level with flat evaporator coil mm		280	330		280			330	380

Power consumption		10.1 kW/ 12.6 kW	13.4 kW/ 16.7 kW	14.0 kW/ 18.7 kW	19.5 kW/ 23.5 kW	20.8 kW/ 25.0 kW	24.4 kW/ 29.5 kW	28.0 kW/ 33.9 kW	29.8 kW/ 35.9 kW
Rated current max.		17.9 A/ 18.4 A	22.2 A/ 23.6 A	24.9 A/ 26.1 A	36.7 A/ 36.5 A	36.6 A/ 37.0 A	43.9 A/ 44.1 A	51.2 A/ 51.1 A	54.2 A/ 54.2 A
Refrigerant		R407C							
$P_{max.}$ cooling circuit		27 bar							
Temperature range	Environment	+15°C to +45°C							
	Liquid media	+10°C to +25°C							
Weight		300 kg	375 kg		420 kg		420 kg	430 kg	450 kg
Colour		RAL 7035							
Protection category (electrics)		IP 54							
Air throughput of fans		15000/15600 m³/h			30000/31200 m³/h				
Temperature control		Electronic control with digital display, setting range +10°C to +25°C (factory setting +20°C)							

Delivery times available on request.
Special voltages available on request. Technical modifications reserved.

Layout diagram Page 1290

Features

Even suitable for use in extreme conditions

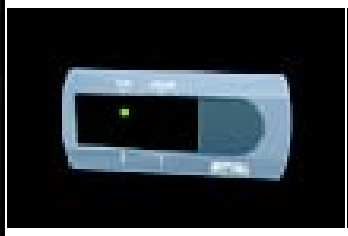
The air of the enclosure interior may also be cooled to below the level of the external temperature by using **air/water heat exchangers** with a central recooling system. Dust is unable to penetrate the enclosure. The waste heat from the enclosure does not raise the temperature of the ambient air, provided the cold water supply system is spatially separated.

Variants:

Roof-mounting
Especially for bayed enclosures, where wall-mounted devices would obstruct the door.

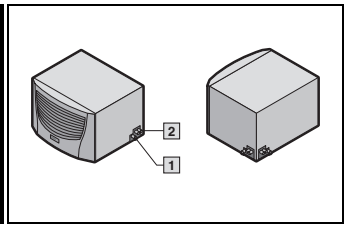
Wall-mounting
For mounting on the wall or any sufficiently large vertical surface.

Controller



Basic controller:
- Visualisation of the operating status via LED display
- Switching hysteresis: 5 K
- Floating fault signal contact in case of overtemperature
- Setpoint adjustable from outside via potentiometer (setting range 20°C – 55°C)

Comfort controller:
- Switching hysteresis: 2 – 10 K preset to 5 K
- System alarm, individually configurable for 2 floating fault signal contacts
- Visualisation of the current enclosure internal temperature and all system messages on the display
- Storage of all system states in the log file
- Optional extension card for integration into superordinate remote monitoring systems e. g. with CMC



Flexible water logistics and condensate management
Any condensate arising is discharged via one of the two tube connectors ($^1/_2$″) and a discharge hose, which should be laid with a gradient ensuring that there are no kinks. In order to avoid increased condensation, the cooling water temperature should be adapted to match the required cooling output.

1 Condensate discharge (flexible)

2 Cooling water connection (flexible)

Benefits:

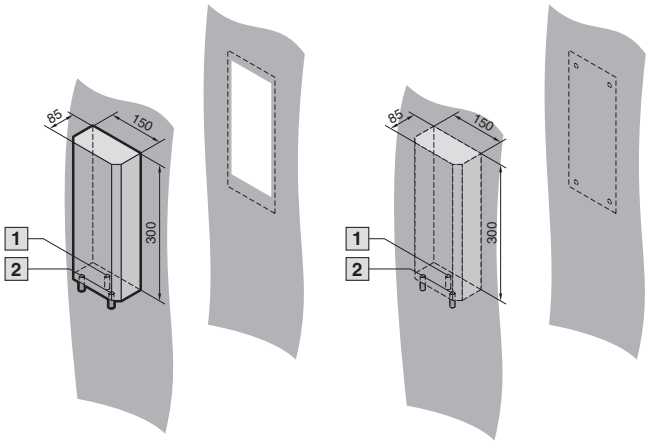
- Useful cooling output from 300 W to 7000 W
- Suitable for use even in extreme conditions and ambient temperatures up to +70°C
- Also available with all water-carrying parts made from V4A
- System for TS 8 integrated into the side panel

Important:

- Air/water heat exchangers should always be used in conjunction with recooling systems or a cooling water circuit

For calculation formulae and water quality requirements, refer to our website: www.rittal.com

Micro, wall-mounted, useful cooling output 300 W



Especially for selective cooling of hotspots in small enclosures.

Supply includes:
Fully wired ready for connection, including drilling template and assembly parts.

1 Condensate discharge $^3/_8$″
2 Cooling water connection $^3/_8$″

Approvals,
see page 82.

Detailed drawing,
see page 1290.

Performance diagrams,
available on the Internet.

Model No. SK		**3212.230**	**3212.115**[1)]	**3212.024**
Rated operating voltage V, Hz		230, 50/60	115, 50/60	24 V (DC)
Dimensions in mm	W H D	150 300 85		
Useful cooling output	**L 35 W 10, 200 l/h**	**300 W**		

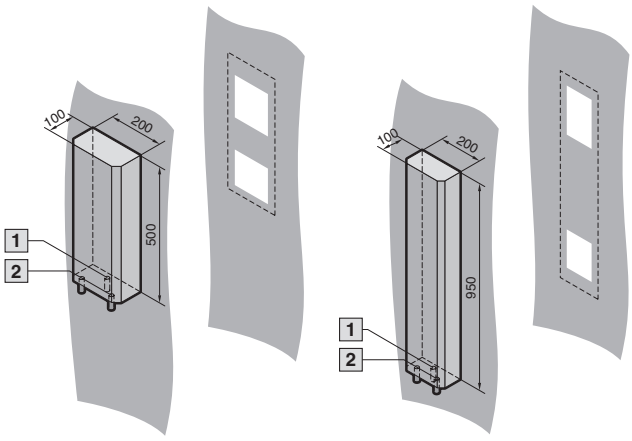
Rated current max.	0.11 A/0.13 A	0.23 A/0.24 A	1.20 A
Pre-fuse T	4.0 A		
Cooling medium	Water (refer to specifications on the Internet; assembly instructions chapter 12)		
Water inlet temperature	> +1°C to +30°C		
Permissible operating pressure p. max.	1 to 10 bar		
Temperature range	+1°C to +70°C		
Protection category to EN 60 529/09.2000	IP 55[2)]		
Duty cycle	100 %		
Type of connection	Connection clamp		
Weight	3 kg		
Colour	RAL 7035		
Air throughput of fans (unimpeded air flow)	280 m^3/h		250 m^3/h

Accessories	Packs of		Page
Temperature indicator	1	3114.100	714
Door-operated switch	1	4127.000	1030
Condensate hose	1	3301.612	720
Flow regulator valve	1	see accessories	722

[1)] Delivery times available on request.
[2)] IP 65 available on request.
Special voltages available on request. We reserve the right to make technical modifications.

Accessories Page 710 **Recooling systems** From page 656 **Configuration software** Page 1155

Wall-mounted, useful cooling output 600/1250 W



Supply includes:
Fully wired ready for connection with terminal strip, including drilling template, sealing mat and assembly parts.

Also required:
Cooling water system such as Rittal recooling systems, see page 656 onwards.

1 Condensate discharge 1/2″
2 Cooling water connection 1/2″

Approvals,
see page 83.

Detailed drawing,
see page 1291.

Performance diagrams,
available on the Internet.

Model No. SK		**3214.100**	**3215.100**
Rated operating voltage V, Hz		230, 50/60	
Dimensions in mm	W H D	200 500 100	200 950 100
Useful cooling output	**L 35 W 10, 200 l/h** **L 35 W 10, 400 l/h**	**600 W** **650 W**	**1250 W** **1300 W**

Rated current max.	0.17 A/0.18 A	0.38 A/0.4 A
Pre-fuse T	2.0 A	4.0 A
Cooling medium	Water (refer to specifications on the Internet; assembly instructions chapter 12)	
Water inlet temperature	> +1°C to +30°C	
Permissible operating pressure p. max.	1 to 10 bar	
Temperature range	+1°C to +70°C	
Protection category to EN 60 529/09.2000	IP 55[1)]	
Duty cycle	100 %	
Type of connection	Terminal strip	
Weight	7 kg	13 kg
Colour	RAL 7035	
Air throughput of fans	120 m^3/h	200 m^3/h
Temperature control	Thermostat-controlled magnetic valve	
Temperature monitoring	Internal thermostat, with change-over contact, switching load 16 A, setting range +20°C to +60°C (factory setting +35°C)	

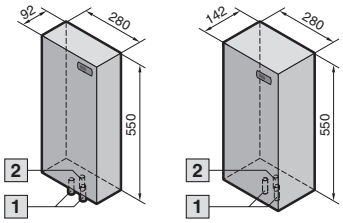
Accessories	Packs of		Page
Temperature indicator	1	3114.100	714
Door-operated switch	1	4127.000	1030
Condensate hose	1	3301.612	720
Flow regulator valve	1	see accessories	722

[1)] IP 65 available on request.
Special voltages available on request. We reserve the right to make technical modifications.

Accessories Page 710 **Recooling systems** From page 656 **Configuration software** Page 1155

Air/water heat exchangers

Wall-mounted, useful cooling output 500 W/1000 W



Supply includes:
Fully wired ready for connection with connector, including drilling template, sealing mat and assembly parts.

Also required:
Cooling water system such as Rittal recooling systems, from page 656.

Detailed drawing,
see page 1291.

Performance diagrams,
available on the Internet.

1 Cooling water connection 1/2″
2 Condensate discharge 1/2″

	Water-carrying parts						
Model No. SK Basic controller	**CuAL**	**3363.100**	**3363.110[1]**	**3363.140[1]**	**3364.100**	**3364.110[1]**	**3364.140[1]**
Model No. SK Comfort controller	**CuAL**	**3363.500**	**3363.510[1]**	**3363.540[1]**	**3364.500**	**3364.510[1]**	**3364.540[1]**
Useful cooling output CuAL	**L 35 W 10, 400 l/h**	**500 W**			**1000 W**		
Model No. SK Basic controller	**V4A (stainless steel)**	**3363.104[1]**	**3363.114[1]**	**3363.144[1]**	**3364.104[1]**	**3364.114[1]**	**3364.144[1]**
Model No. SK Comfort controller	**V4A (stainless steel)**	**3363.504[1]**	**3363.514[1]**	**3363.544[1]**	**3364.504[1]**	**3364.514[1]**	**3364.544[1]**
Useful cooling output V4A	**L 35 W 10, 400 l/h**	**375 W**			**750 W**		
Rated operating voltage V, Hz		230, 1~, 50/60	115, 1~, 50/60	400, 2~, 50/60	230, 1~, 50/60	115, 1~, 50/60	400, 2~, 50/60
Dimensions in mm	W H D	280 550 92			280 550 142		

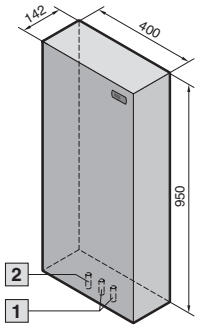
Rated current max.	0.17 A/0.18 A	0.35 A/0.40 A	0.1 A/0.12 A	0.2 A/0.19 A	0.4 A/0.38 A	0.12 A/0.11 A
Pre-fuse T	4.0 A		4.0 A[3]	4.0 A		4.0 A[3]
Cooling medium	Water (refer to specifications on the Internet; assembly instructions chapter 13)					
Water inlet temperature	+1°C to +30°C					
Permissible operating pressure p. max.	1 to 10 bar					
Temperature range	+1°C to +70°C					
Protection category to EN 60 529/09.2000	IP 55[2]					
Duty cycle	100 %					
Type of connection	Plug-in terminal strip					
Weight	12 kg			15 kg		
Colour	RAL 7035					
Air throughput of fans (unimpeded air flow)	270/320 m³/h					
Temperature control	Basic or Comfort controller (factory setting +35°C)					

Accessories	Packs of		Page
Door-operated switch	1	4127.000	1030
SK bus system for Comfort controller	1	3124.100	717
Interface card for Comfort controller	1	3124.200	716
Condensate hose	1	3301.612	720
Flow regulator valve	1	see accessories	722

[1] Delivery times available on request.
[2] IP 65 available on request.
[3] 2-pole miniature circuit breaker.
Special voltages available on request. We reserve the right to make technical modifications.

Accessories Page 710 **Recooling systems** From page 656 **Configuration software** Page 1155

Wall-mounted, useful cooling output 2000 W/3000 W



Supply includes:
Fully wired ready for connection with connector, including drilling template, sealing mat and assembly parts.

Also required:
Cooling water system such as Rittal recooling systems, from page 656.

Detailed drawing,
see page 1292.

Performance diagrams,
available on the Internet.

1 Cooling water connection 1/2″
2 Condensate discharge 1/2″

	Water-carrying parts						
Model No. SK Basic controller	**CuAL**	**3373.100**	**3373.110[1]**	**3373.140[1]**	**3374.100**	**3374.110[1]**	**3374.140[1]**
Model No. SK Comfort controller	**CuAL**	**3373.500**	**3373.510[1]**	**3373.540[1]**	**3374.500**	**3374.510[1]**	**3374.540[1]**
Useful cooling output CuAL	**L 35 W 10, 400 l/h**	**2000 W**			**3000 W**		
Model No. SK Basic controller	**V4A (stainless steel)**	**3373.104[1]**	**3373.114[1]**	**3373.144[1]**	**3374.104[1]**	**3374.114[1]**	**3374.144[1]**
Model No. SK Comfort controller	**V4A (stainless steel)**	**3373.504[1]**	**3373.514[1]**	**3373.544[1]**	**3374.504[1]**	**3374.514[1]**	**3374.544[1]**
Useful cooling output V4A	**L 35 W 10, 400 l/h**	**1500 W**			**2250 W**		
Rated operating voltage V, Hz		230, 1~, 50/60	115, 1~, 50/60	400, 2~, 50/60	230, 1~, 50/60	115, 1~, 50/60	400, 2~, 50/60
Dimensions in mm	W H D	400 950 142					

Rated current max.	0.38 A/0.43 A	0.75 A/0.85 A	0.22 A/0.25 A	0.57 A/0.78 A	1.15 A/1.55 A	0.35 A/0.45 A
Pre-fuse T	4.0 A		4.0 A[3]	4.0 A		4.0 A[3]
Cooling medium	Water (refer to specifications on the Internet; assembly instructions chapter 13)					
Water inlet temperature	+1°C to +30°C					
Permissible operating pressure p. max.	1 to 10 bar					
Temperature range	+1°C to +70°C					
Protection category to EN 60 529/09.2000	IP 55[2]					
Duty cycle	100 %					
Type of connection	Plug-in terminal strip					
Weight	20 kg					
Colour	RAL 7035					
Air throughput of fans (unimpeded air flow)	600/625 m³/h			700/730 m³/h		
Temperature control	Basic or Comfort controller (factory setting +35°C)					

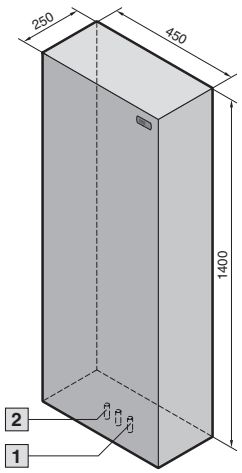
Accessories	Packs of		Page
Door-operated switch	1	4127.000	1030
SK bus system for Comfort controller	1	3124.100	717
Interface card for Comfort controller	1	3124.200	716
Condensate hose	1	3301.612	720
Flow regulator valve	1	see accessories	722

[1] Delivery times available on request.
[2] IP 65 available on request.
[3] 2-pole miniature circuit breaker.
Special voltages available on request. We reserve the right to make technical modifications.

Accessories Page 710 **Recooling systems** From page 656 **Configuration software** Page 1155

Air/water heat exchangers

Wall-mounted, useful cooling output 5000 W



Supply includes:
Fully wired ready for connection with connector, including drilling template, sealing mat and assembly parts.

Also required:
Cooling water system such as Rittal recooling systems, from page 656.

Detailed drawing,
see page 1292.

Performance diagrams,
available on the Internet.

1 Cooling water connection 1/2″
2 Condensate discharge 1/2″

RITTAL TOP THERM

	Water-carrying parts			
Model No. SK Basic controller	**CuAL**	**3375.100**	**3375.110[1)]**	**3375.140[1)]**
Model No. SK Comfort controller	**CuAL**	**3375.500**	**3375.510[1)]**	**3375.540[1)]**
Useful cooling output CuAL	**L 35 W 10, 400 l/h**	**5000 W**		
Model No. SK Basic controller	**V4A (stainless steel)**	**3375.104[1)]**	**3375.114[1)]**	**3375.144[1)]**
Model No. SK Comfort controller	**V4A (stainless steel)**	**3375.504[1)]**	**3375.514[1)]**	**3375.544[1)]**
Useful cooling output V4A	**L 35 W 10, 400 l/h**	**3750 W**		
Rated operating voltage V, Hz		230, 1~, 50/60	115, 1~, 50/60	400, 2~, 50/60
Dimensions in mm	W H D	450 1400 250		

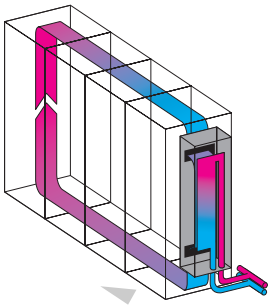
Rated current max.	1.0 A/1.35 A	2.0 A/2.7 A	0.6 A/0.8 A
Pre-fuse T	4.0 A		4.0 A[3)]
Cooling medium	Water (refer to specifications on the Internet; assembly instructions chapter 13)		
Water inlet temperature	+1°C to +30°C		
Permissible operating pressure p. max.	1 to 10 bar		
Temperature range	+1°C to +70°C		
Protection category to EN 60 529/09.2000	IP 55[2)]		
Duty cycle	100 %		
Type of connection	Plug-in terminal strip		
Weight	56 kg		59 kg
Colour	RAL 7035		
Air throughput of fans (unimpeded air flow)	2365/2750 m^3/h		
Temperature control	Basic or Comfort controller (factory setting +35°C)		

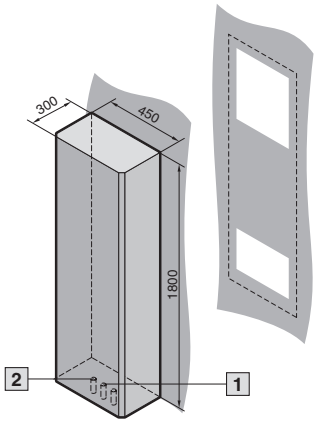
Accessories	Packs of		Page
Door-operated switch	1	4127.000	1030
SK bus system for Comfort controller	1	3124.100	717
Interface card for Comfort controller	1	3124.200	716
Condensate hose	1	3301.612	720
Flow regulator valve	1	see accessories	722

[1)] Delivery times available on request.
[2)] IP 65 available on request.
[3)] 2-pole miniature circuit breaker.
Special voltages available on request. We reserve the right to make technical modifications.

Accessories Page 710 **Recooling systems** From page 656 **Configuration software** Page 1155

Wall-mounted, useful cooling output 7000 W





Supply includes:
Fully wired ready for connection with terminal strip, including drilling template, sealing mat and assembly parts.

Also required:
Cooling water system such as Rittal recooling systems, from page 656.

1 Condensate discharge 1/2″
2 Cooling water connection 1/2″

Detailed drawing,
see page 1293.

Performance diagrams,
available on the Internet.

Model No. SK		**3216.480**[1]	
Rated operating voltage V, Hz		400, 3~, 50/60	480, 3~, 60
Dimensions in mm	W H D	450 1800 300	
Useful cooling output	**L 35 W 10, 500 l/h** **L 35 W 20, 500 l/h**	**7000 W** **4500 W**	
Rated current max.		1.4 A/1.6 A	1.2 A
Pre-fuse T		4.0 A, 3-pole	
Power consumption P_{el}		450 W/700 W	630 W
Cooling medium		Water (refer to specifications on the Internet; assembly instructions chapter 12)	
Water inlet temperature		+1°C to +30°C	
Permissible operating pressure p. max.		1 to 10 bar	
Temperature range		+1°C to +70°C	
Protection category to EN 60 529/09.2000		IP 55	
Duty cycle		100 %	
Type of connection		Terminal strip	
Weight		79 kg	
Colour		RAL 7035	
Air throughput of fans		2400 m³/h	
Temperature control		Thermostat-controlled magnetic valve	

Accessories	Packs of		Page
Temperature indicator	1	3114.100	714
Door-operated switch	1	4127.000	1030
Condensate hose	1	3301.612	720
Flow regulator valve	1	see accessories	722

[1] Delivery times available on request.
IP 65 available on request.
Special voltages available on request. We reserve the right to make technical modifications.

Adaptor frame

for mounting the air/water heat exchanger SK 3216.480 on side panels of 500 mm deep TS enclosures.

Material:
Sheet steel

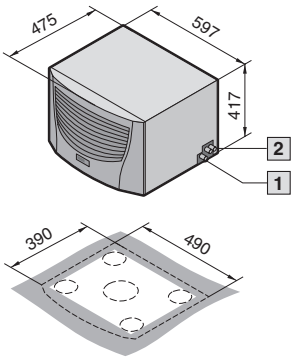
Colour:
RAL 7035

Packs of	**Model No. SK**
1	**3216.470**

Detailed drawing,
see page 1293.

Accessories Page 710 **Recooling systems** From page 656 **Configuration software** Page 1155

Roof-mounted, useful cooling output 2500 W



Supply includes:
Fully wired ready for connection with connector, including drilling template, sealing mat and assembly parts.

Also required:
Cooling water system such as Rittal recooling systems, from page 656.

1 Condensate discharge 1/2″ (flexible)

2 Cooling water connection 1/2″ (flexible)

Approvals,
see page 84.

Detailed drawing,
see page 1293.

Performance diagrams,
available on the Internet.

Property rights:
German registered designs
no. 402 02 324 and
no. 402 02 325
US design patent
no. US D 492,319S
Indian registered design
no. 189 956
Chinese registered design
no. ZL 0330 6415.6

	Water-carrying parts			
Model No. SK Basic controller	**CuAL**	**3209.100**	**3209.110**	**3209.140[1)]**
Model No. SK Comfort controller	**CuAL**	**3209.500**	**3209.510**	**3209.540[1)]**
Useful cooling output CuAL	**L 35 W 10, 400 l/h**	**2500 W**		
Model No. SK Basic controller	**V4A (stainless steel)**	**3209.104[1)]**	**3209.114[1)]**	**3209.144[1)]**
Model No. SK Comfort controller	**V4A (stainless steel)**	**3209.504[1)]**	**3209.514[1)]**	**3209.544[1)]**
Useful cooling output V4A	**L 35 W 10, 400 l/h**	**1875 W**		
Rated operating voltage V, Hz		230, 50/60	115, 50/60	400, 2~, 50/60
Dimensions in mm	W H D	597 417 475		

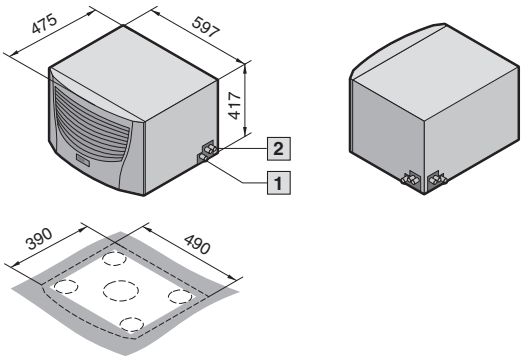
Rated current max.	0.40 A/0.48 A	0.85 A/0.95 A	0.25 A/0.30 A
Pre-fuse T	4.0 A		
Cooling medium	Water (refer to specifications on the Internet; assembly instructions chapter 13)		
Water inlet temperature	> +1°C to +30°C		
Permissible operating pressure p. max.	1 to 10 bar		
Temperature range	+1°C to +70°C		
Protection category to EN 60 529/09.2000	IP 55[2)]		
Duty cycle	100 %		
Type of connection	Plug-in terminal strip		
Weight	23.5 kg	27.5 kg	27.5 kg
Colour	RAL 7035		
Air throughput of fans (unimpeded air flow)	1030 m^3/h		
Temperature control	Basic or Comfort controller (factory setting +35°C)		

Accessories	Packs of		Page
Door-operated switch	1	4127.000	1030
SK bus system for Comfort controller	1	3124.100	717
Interface card for Comfort controller	1	3124.200	716
Air ducting system	1	3286.870	711
Cover stoppers for interior air outlet	1	3286.880	712
Condensate hose	1	3301.612	720
Flow regulator valve	1	see accessories	722

[1)] Delivery times available on request.
[2)] IP 65 available on request.
Special voltages available on request. We reserve the right to make technical modifications.

Accessories Page 710 **Recooling systems** From page 656 **Configuration software** Page 1155

Roof-mounted, useful cooling output 4000 W



Supply includes:
Fully wired ready for connection with connector, including drilling template, sealing mat and assembly parts.

Also required:
Cooling water system such as Rittal recooling systems, from page 656.

1 Condensate discharge 1/2″ (flexible)

2 Cooling water connection 1/2″ (flexible)

Approvals,
see page 84.

Detailed drawing,
see page 1293.

Performance diagrams,
available on the Internet.

Property rights:
German registered designs
no. 402 02 324 and
no. 402 02 325
US design patent
no. US D 492,319S
Indian registered design
no. 189 956
Chinese registered design
no. ZL 0330 6415.6

	Water-carrying parts			
Model No. SK Basic controller	**CuAL**	**3210.100**	**3210.110**	**3210.140[1)]**
Model No. SK Comfort controller	**CuAL**	**3210.500**	**3210.510**	**3210.540[1)]**
Useful cooling output CuAL	**L 35 W 10, 400 l/h**	**4000 W**		
Model No. SK Basic controller	**V4A (stainless steel)**	**3210.104[1)]**	**3210.114[1)]**	**3210.144[1)]**
Model No. SK Comfort controller	**V4A (stainless steel)**	**3210.504[1)]**	**3210.514[1)]**	**3210.544[1)]**
Useful cooling output V4A	**L 35 W 10, 400 l/h**	**3000 W**		
Rated operating voltage V, Hz		230, 50/60	115, 50/60	400, 2~, 50/60
Dimensions in mm	W H D	597 417 475		

Rated current max.	0.44 A/0.5 A	0.9 A/1.0 A	0.25 A/0.3 A
Pre-fuse T	4.0 A		
Cooling medium	Water (refer to specifications on the Internet; assembly instructions chapter 13)		
Water inlet temperature	> +1°C to +30°C		
Permissible operating pressure p. max.	1 to 10 bar		
Temperature range	+1°C to +70°C		
Protection category to EN 60 529/09.2000	IP 55[2)]		
Duty cycle	100 %		
Type of connection	Plug-in terminal strip		
Weight	25.5 kg	29.5 kg	29.5 kg
Colour	RAL 7035		
Air throughput of fans (unimpeded air flow)	925 m^3/h		
Temperature control	Basic or Comfort controller (factory setting +35°C)		

Accessories	Packs of		Page
Door-operated switch	1	4127.000	1030
SK bus system for Comfort controller	1	3124.100	717
Interface card for Comfort controller	1	3124.200	716
Air ducting system	1	3286.870	711
Cover stoppers for interior air outlet	1	3286.880	712
Condensate hose	1	3301.612	720
Flow regulator valve	1	see accessories	722

[1)] Delivery times available on request.
[2)] IP 65 available on request.
Special voltages available on request. We reserve the right to make technical modifications.

Accessories Page 710 **Recooling systems** From page 656 **Configuration software** Page 1155

Water/water heat exchangers

Features

Design features:

6 performance categories for cooling outputs ranging from 25 to 250 kW.

Application:

Use of an in-house water circuit which is not suitable for direct enclosure climate control.

Examples include water circuits with cooling tower, process and well water etc., and aggressive or contaminated water.

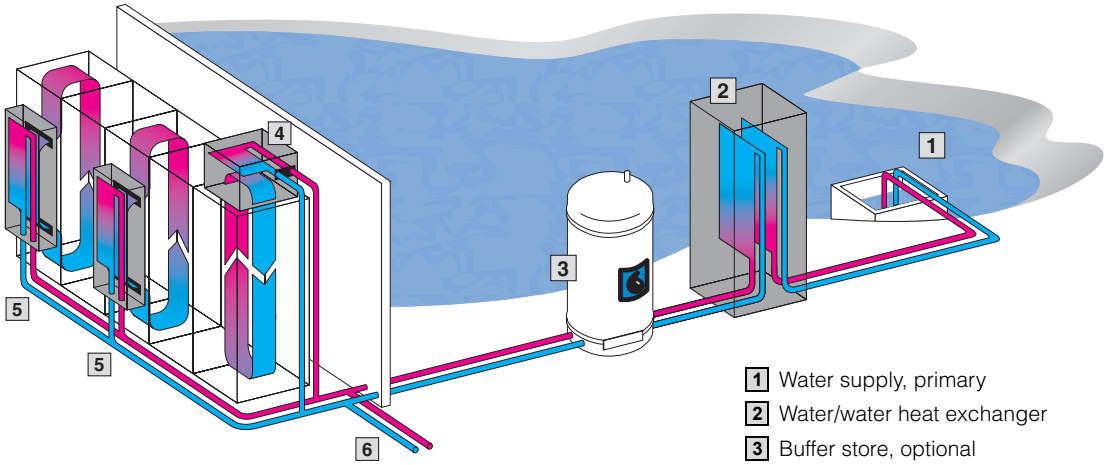
Also suitable for direct enclosure cooling (DCP) where higher water inlet temperatures are required.

Water/water heat exchangers

Interrogate operating statuses
and make settings via the Web (TCP/IP).

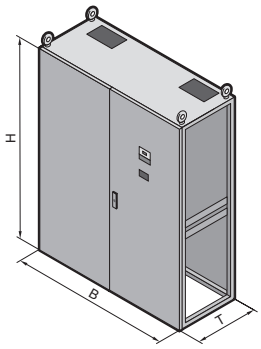
Redundancy
Double pump, speed-controlled, with alternating 24 h operation.

Maintenance-friendly
The complete interior may be removed from the enclosure as a single unit.



1 Water supply, primary
2 Water/water heat exchanger
3 Buffer store, optional
4 Air/water heat exchanger, roof-mounted
5 Air/water heat exchangers, roof-mounted/wall-mounted
6 Other cooling options, e. g. machine cooling

Cooling output 25 to 250 kW



Application:
Water/water heat exchangers are primarily used to hydraulically and physically separate a definable primary water circuit (dirt, pressure fluctuations) from a defined secondary water circuit.

Technical design:
- Compact construction mounted in a tubular frame
- Integrated in a TS 8 enclosure
- Digital controller
- Floating contact for collective fault signal
- Flow rate display and monitoring
- Water connection in base
- Double pump unit fitted with linear speed controller
- Linear controlled 3-way valve (4 – 20 mA)

Supply includes:
Water/water heat exchanger wired ready for connection, with multilingual documentation including functional diagram and wiring plans.

Note:
The illustration shows units with customer-specific options.

Accessories:
- Buffer store 1000 – 3000 l
- Standard pump with automatic bypass
- Emergency water infeed
- Secondary flow monitor
- Ethernet, BACnet and SNMP link
- Magnetic filter
- Pipework in stainless steel 1.4401 (AISI 316)
- Tubular frame, without TS 8 enclosure

Layout diagram,
see page 1290.

Model No. SK		**3232.900**	**3232.910**	**3232.920**	**3232.930**	**3232.940**	**3232.950**	**3232.960**
Rated operating voltage V, Hz		400, 3~, 50						
Dimensions including base/plinth in mm	W H D	1200 1900 800	1200 1900 800	1200 1900 800	1600 1900 800	1600 1900 800	2000 1900 800	2000 1900 800
Cooling output at T_{wp} = 6°C/T_{ws} = 15°C		**25000 W**	**50000 W**	**75000 W**	**100000 W**	**150000 W**	**200000 W**	**250000 W**
Power consumption		3.54 kW	5.7 kW	5.7 kW	10.4 kW	10.4 kW	13.6 kW	13.6 kW
Rated current max.		3.5 A	5.9 A	5.9 A	10.2 A	10.2 A	10.8 A	10.8 A
Temperature range	Environment	+5°C to +45°C						
	Tp primary side	+6°C to +30°C						
	Ts secondary side	+6°C to +30°C						
Pump capacity (l/min.)	primary/secondary	62	125	187	250	375	500	625
Pump pressure (bar)	primary	1.5 – 6.0						
Pump pressure (bar)	secondary (equipment)	2.5						
Water connections	primary/secondary	RP 1″	RP 1 1/4″	RP 1 1/2″	RP 2″	RP 2″	RP 2 1/2″	RP 2 1/2″
Weight		400 kg	450 kg	450 kg	700 kg	700 kg	900 kg	900 kg
Colour		RAL 7035						
Protection category (electrics)		IP 54						
Temperature control		Electronic control with digital display, setting range +5°C to +50°C						

Delivery times available on request.
Special voltages, other frequencies, and technical modifications available on request.

Air/water heat exchangers From page 676 **TS 8 lock systems** From page 947 **TS 8 baying system** From page 138 **Overflow valve** Page 722
Additives Page 722

Air/air heat exchangers

Features

The requirement for use of **air/air heat exchangers** is that the ambient temperature must be below the enclosure internal temperature. Dust and any aggressive ambient air is unable to ingress the enclosure interior, thanks to the two separate air circuits.

Platform strategy/installation

Identical installation cut-outs
for various output categories.

Easily retro-fitted
Thanks to the low weight, simple assembly cut-outs and problem-free attachment of the heat exchangers, a cabinet or enclosure is easily retro-fitted.

Servicing/security

Simple maintenance
The heat exchanger module is very easily removed, for effortless cleaning. The cleverly thought-out structure enables fast, economical maintenance.

Benefits:

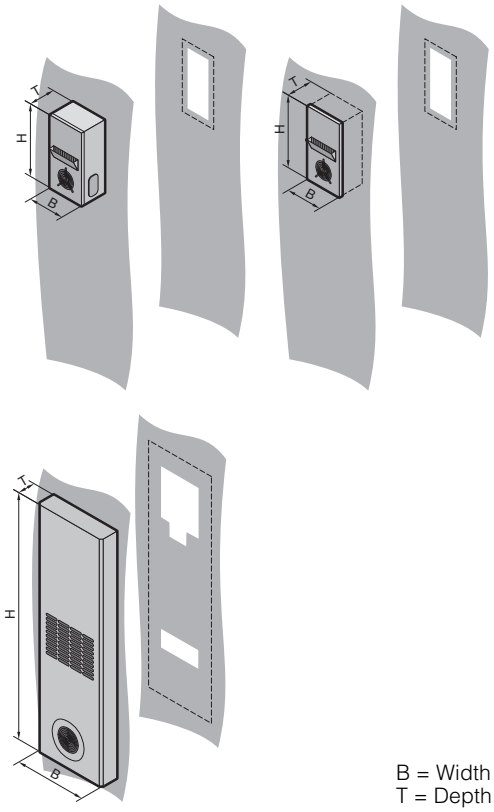
- Specific thermal output from 17.5 W/K to 90 W/K
- External and internal circuit may be controlled separately
- Mounting cut-outs and enclosure dimensions identical to TopTherm wall-mounted cooling units
- Suitable for external and internal mounting
- Top design identical to TopTherm wall-mounted cooling units

Important:

- The temperature difference between the room temperature and enclosure internal temperature will have a decisive effect on the heat loss that may be dissipated.

For calculation bases, refer to our website: www.rittal.com

Wall-mounted



B = Width
T = Depth

Supply includes:
Fully wired unit ready for connection.

Detailed drawing,
see page 1295.

Performance diagrams,
available on the Internet.

SK 3125.800
Compact wall-mounted air/air heat exchanger. Ideal for small enclosures and command panels. Suitable for external and internal mounting.

SK 3129.800
Super-slimline air/air heat exchangers. Ideal for external/ internal door mounting.

Model No. SK		**3125.800**	**3129.800**
Rated operating voltage V, Hz		230, 1~, 50/60	
Dimensions in mm	W H D	200 400 146	400 1360 110
Specific thermal output		**12 W/K**	**62 W/K**

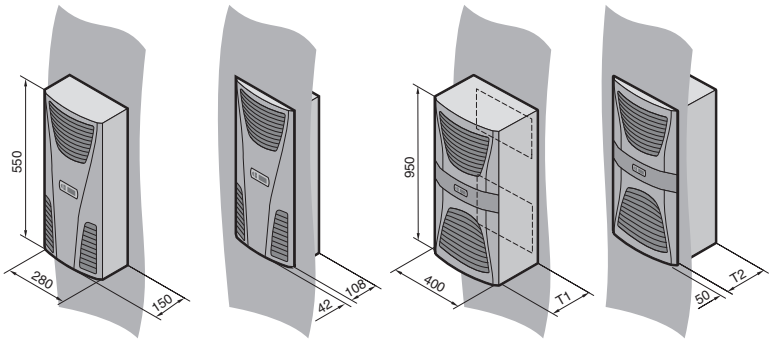
Fans		2 per heat exchanger	
Max. rated current per fan		0.11 A/0.13 A	0.45 A/0.55 A
Pre-fuse T		2.0 A	
Power per fan		25 W/30 W	100 W/130 W
Air throughput of fans	External circuit	265 m³/h / 315 m³/h	860 m³/h / 900 m³/h
	Internal circuit	265 m³/h / 315 m³/h	860 m³/h / 900 m³/h
Temperature range		–5°C to +55°C	
Type of connection		Connection cable	
Weight		8 kg	30 kg
Colour		RAL 7035	
Protection category to EN 60 529/09.2000	Internal circuit	IP 54	

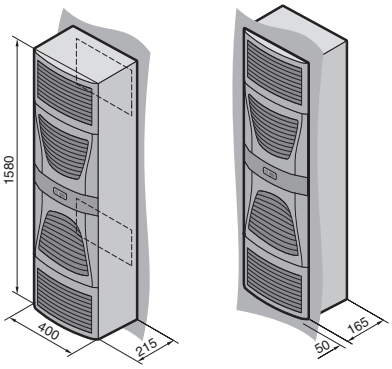
Accessories	Packs of		Page
Thermostat	1	3110.000	715
Temperature indicator	1	3114.100	714
Speed control	1	3120.000	716

Special voltages available on request. We reserve the right to make technical modifications.

Accessories Page 710 **Recooling systems** From page 656 **Configuration software** Page 1155

Wall-mounted with controller





T = Depth

- **With controller and digital temperature indicator**
- **Floating fault signal contact in case of overtemperature**

Supply includes:
Fully wired unit ready for connection.

Approvals,
see page 85.

Detailed drawing,
see page 1295.

Performance diagrams,
available on the Internet.

Model No. SK		**3126.100**	**3127.100**	**3128.100**	**3129.100**	**3130.100**
Rated operating voltage V, Hz		230, 1~, 50/60				
Dimensions in mm	W H T1 T2	280 550 150 –	400 950 205 155		400 950 225 175	400 1580 215 –
Specific thermal output		**17.5 W/K**	**30 W/K**	**45 W/K**	**60 W/K**	**90 W/K**

Fans		2 per heat exchanger				
Max. rated current per fan		0.11 A/0.13 A	0.28 A/0.34 A	0.3 A/0.4 A	0.38 A/0.4 A	0.67 A/0.88 A
Pre-fuse T		2.0 A				4.0 A
Power per fan		23 W/27 W	60 W/75 W	70 W/90 W	85 W/90 W	150 W/200 W
Air throughput of fans	External circuit	265 m^3/h / 315 m^3/h	480 m^3/h / 525 m^3/h	600 m^3/h / 625 m^3/h	860 m^3/h / 900 m^3/h	850 m^3/h / 945 m^3/h
	Internal circuit	265 m^3/h / 315 m^3/h	480 m^3/h / 525 m^3/h	600 m^3/h / 625 m^3/h	860 m^3/h / 900 m^3/h	850 m^3/h / 945 m^3/h
Temperature range		–5°C to +55°C				
Type of connection		Plug-in terminal strip				
Weight		10 kg	18 kg	19 kg	21 kg	34 kg
Colour		RAL 7035				
Protection category to EN 60 529/09.2000	Internal circuit	IP 54				

Accessories	Packs of			Page
Filter mats	3	3286.300	3286.400	723
Metal filters	1	3286.310	3286.410	724
Speed control	1	3120.000		716

Special voltages available on request. We reserve the right to make technical modifications.

Accessories Page 710 **Recooling systems** From page 656 **Configuration software** Page 1155

Features

Fan-and-filter units are ideal for dissipating heat loads cost-effectively. The pre-requisite is that the ambient air must be relatively clean and with a temperature below the desired enclosure internal temperature.

The entire range of fan-and-filter units is now also available with EMC shielding and all required rated voltages.

Fast assembly

Super-fast clip-on mounting
This guarantees fast, completely secure attachment of the fan-and-filter unit. The pre-requisites for protection category IP 54 are met as standard.

Screws are not required. Removal of the louvred grille, likewise without any screws, means that filter mat changes can be achieved in next to no time.

Draw-in or extract?
The air direction may be quickly reversed from draw-in (default setting) to extracting. Simply rotate the fan through 180°.

Application diversity and functions

Not always full power!
At lower ambient temperatures, the air throughput may be reduced. By adapting the fan-and-filter speed to match the temperature using a controller, noise generation is reduced.

Also with EMC shielding
All fan-and-filter units and outlet filters are alternatively available with EMC shielding.
The required conductive connection is achieved via a metallic coating on the fan-and-filter unit housing and a special sealing frame.

Hose-proof
Particularly for applications in the food industry, the hose-proof hood prevents the ingress of damp. The protection category of IP 56 is achieved in conjunction with filter mats.

Benefits:

- Air throughput from 20 m^3/h to 700 m^3/h
- Super-fast assembly
- IP 54 as standard
- Air flow direction may be reversed from draw-in (default setting) to extracting
- All fans also available with EMC shielding
- Minimal installation depth
- Fan also bayable

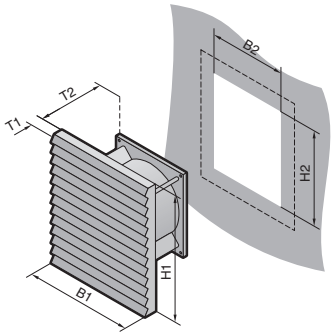
Important:

- The prescribed heat loss and the maximum anticipated ambient temperature define the required volumetric flow
- Always use the fan-and-filter units and outlet filters together

Calculation formulae refer to website: www.rittal.com

Fan-and-filter units

Air throughput 20/55 m³/h



B = Width
T = Depth

Supply includes:
Fan-and-filter units ready for installation, including filter mats.

German registered design no. M 93 04 846

Approvals,
see page 85.

Performance diagrams,
available on the Internet.

Model No. fan-and-filter unit SK		**3321.107**	**3321.117**	**3321.027**	**3321.047**[1]	**3322.107**	**3322.117**	**3322.027**	**3322.047**[1]
Rated operating voltage V, Hz		230, 50/60	115, 50/60	24 (DC)	48 (DC)	230, 50/60	115, 50/60	24 (DC)	48 (DC)
Dimensions in mm	B1/H1	116.5				148.5			
	B2/H2	92 + 0.8[2]				124[2]			
	T1	10				10.5			
Max. installation depth mm	T2	42				57			
Air throughput, unimpeded air flow		**20/25 m³/h**		**20 m³/h**		**55/66 m³/h**		**55 m³/h**	
Air throughput with outlet filter including standard filter mat		1 x SK 3321.207: **15/18 m³/h**				1 x SK 3322.207: **43/50 m³/h**			

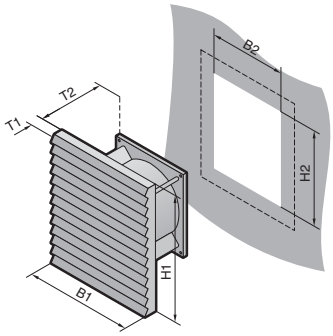
Axial fan	Self-starting shaded pole motor		DC motor		Self-starting shaded pole motor		DC motor	
Rated current max.	69 mA 58 mA	138 mA 115 mA	125 mA	90 mA	0.12 A 0.11 A	0.24 A 0.23 A	0.35 A	90 mA
Power	12.5 W/10.3 W		3.0 W	4.1 W	19.0 W/18.0 W		7.7 W	4.4 W
Noise level	41/46 dB (A)		41 dB (A)		46/49 dB (A)		46 dB (A)	
Temperature range	–10°C to +55°C							
Colour	RAL 7035[3]							
Protection category to EN 60 529/09.2000	IP 54 standard IP 56 when using a hose-proof hood							
Model No. outlet filter SK	**3321.207**				**3322.207**			

Accessories	Packs of									Page
Spare filter mats	5	3321.700				3322.700				725
Thermostat	1	3110.000								715
Temperature indicator	1	3114.100	3114.115	3114.024	–	3114.100	3114.115	3114.024	–	714
Speed control	1	3120.000	3120.115	–	–	3120.000	3120.115	–	–	716
Hose-proof hood	1	3321.800				3322.800				721

[1] Delivery times on request.
[2] For metal thickness > 2.5 mm the cut-out B2/H2 must be 1 mm larger.
[3] RAL 7032 on request.
Special voltages available on request. We reserve the right to make technical modifications.

Accessories Page 710 **EMC-protected design** Page 694 **Configuration software** Page 1155

Air throughput 105/180 m³/h



B = Width
T = Depth

Supply includes:
Fan-and-filter units ready for installation, including filter mats.

German registered design no. M 93 04 846

Approvals,
see page 85.

Performance diagrams,
available on the Internet.

Model No. fan-and-filter unit SK		**3323.107**	**3323.117**	**3323.027**	**3323.047**[1]	**3324.107**	**3324.117**	**3324.027**	**3324.047**[1]
Rated operating voltage V, Hz		230, 50/60	115, 50/60	24 (DC)	48 (DC)	230, 50/60	115, 50/60	24 (DC)	48 (DC)
Dimensions in mm	B1/H1	204				255			
	B2/H2	177[2]				224[2]			
	T1	12.5				12.5			
Max. installation depth mm	T2	82.5				105			
Air throughput, unimpeded air flow		**105/120 m³/h**		**105 m³/h**		**180/160 m³/h**		**180 m³/h**	
Air throughput with outlet filter including standard filter mat		1 x SK 3323.207: **71/82 m³/h** 2 x SK 3323.207: **85/98 m³/h** 1 x SK 3325.207: **78/90 m³/h**				1 x SK 3325.207: **115/95 m³/h** 2 x SK 3325.207: **165/140 m³/h** 1 x SK 3326.207: **155/130 m³/h**			

Axial fan	Self-starting shaded pole motor		DC motor		Self-starting shaded pole motor		DC motor	
Rated current max.	0.12 A 0.11 A	0.24 A 0.23 A	0.35 A	90 mA	0.19 A 0.20 A	0.38 A 0.40 A	0.3 A	0.34 A
Power	19.0 W/18.0 W		8.0 W	4.3 W	30.0 W/35.0 W		7.2 W	14.0 W
Noise level	46/49 dB (A)		46 dB (A)		52/48 dB (A)		52 dB (A)	
Temperature range	–10°C to +55°C							
Colour	RAL 7035[3]							
Protection category to EN 60 529/09.2000	IP 54 standard IP 55 when using an additional fine filter mat IP 56 when using an additional fine filter mat and hose-proof hood							
Model No. outlet filter SK	**3323.207**				**3325.207**			

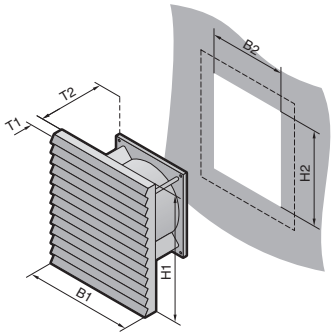
Accessories	Packs of									Page
Spare filter mats	5	3171.100				3172.100				725
Fine filter mats	5	3181.100				3182.100				725
Thermostat	1	3110.000								715
Temperature indicator	1	3114.100	3114.115	3114.024	–	3114.100	3114.115	3114.024	–	714
Speed control	1	3120.000	3120.115	–	–	3120.000	3120.115	–	–	716
Hose-proof hood	1	3323.800				3324.800				721

[1] Delivery times available on request.
[2] For metal thickness > 2.5 mm, the cut-out B2/H2 must be 1 mm larger.
[3] RAL 7032 on request.
Special voltages available on request. We reserve the right to make technical modifications.

Accessories Page 710 **EMC-protected design** Page 694 **Configuration software** Page 1155

Fan-and-filter units

Air throughput 230 m³/h



B = Width
T = Depth

Supply includes:
Fan-and-filter units ready for installation, including filter mats.

German registered design no. M 93 04 846

Approvals,
see page 85.

Performance diagrams,
available on the Internet.

Model No. fan-and-filter unit SK		**3325.107**	**3325.117**	**3325.027**	**3325.047**[1]
Rated operating voltage V, Hz		230, 50/60	115, 50/60	24 (DC)	48 (DC)
Dimensions in mm	B1/H1	255			
	B2/H2	224[2]			
	T1	12.5			
Max. installation depth mm	T2	105			
Air throughput, unimpeded air flow		**230/265 m³/h**		**230 m³/h**	
Air throughput with outlet filter including standard filter mat		1 x SK 3325.207: **170/205 m³/h** 2 x SK 3325.207: **200/230 m³/h** 1 x SK 3326.207: **190/215 m³/h**			

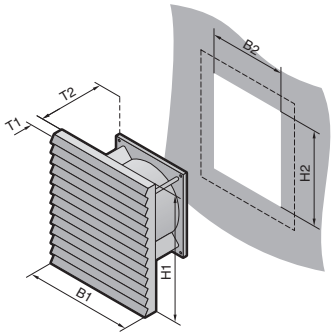
Axial fan	Self-starting shaded pole motor		DC motor	
Rated current max.	0.28 A 0.24 A	0.53 A 0.49 A	0.59 A	0.31 A
Power	41.0 W/38.0 W		14.0 W	15.0 W
Noise level	54/56 dB (A)		54 dB (A)	
Temperature range	–10°C to +55°C			
Colour	RAL 7035[3]			
Protection category to EN 60 529/09.2000	IP 54 standard IP 55 when using an additional fine filter mat IP 56 when using an additional fine filter mat and hose-proof hood			
Model No. outlet filter SK	**3325.207**			

Accessories	Packs of					Page
Spare filter mats	5	3172.100				725
Fine filter mats	5	3182.100				725
Thermostat	1	3110.000				715
Temperature indicator	1	3114.100	3114.115	3114.024	–	714
Speed control	1	3120.000	3120.115	–	–	716
Hose-proof hood	1	3324.800				721

[1] Delivery times available on request.
[2] For metal thickness > 2.5 mm, the cut-out B2/H2 must be 1 mm larger.
[3] RAL 7032 on request.
Special voltages available on request. We reserve the right to make technical modifications.

Accessories Page 710 **EMC-protected design** Page 694 **Configuration software** Page 1155

Air throughput 550/700 m³/h



B = Width
T = Depth

Supply includes:
Fan-and-filter units ready for installation, including filter mats.

German registered design no. M 93 04 846

Approvals,
see page 85.

Performance diagrams,
available on the Internet.

Model No. fan-and-filter unit SK		**3326.107**	**3326.117**	**3327.107**	**3327.117**	**3327.147**
Rated operating voltage V, Hz		230, 50/60	115, 50/60	230, 50/60	115, 50/60	400/460, 3~, 50/60
Dimensions in mm	B1/H1	323				
	B2/H2	292[1]				
	T1	12.5				
Max. installation depth mm	T2	129		145		
Air throughput, unimpeded air flow		**550/600 m³/h**		**700/720 m³/h**		
Air throughput with outlet filter including standard filter mat		1 x SK 3326.207: **360/390 m³/h** 2 x SK 3326.207: **440/495 m³/h**		1 x SK 3326.207: **525/575 m³/h**		

Axial fan	Capacitor motor				Rotary current motor
Rated current max.	0.29 A 0.35 A	0.58 A 0.70 A	0.65 A 0.95 A	1.5 A 2.0 A	0.27 A 0.37 A
Power	64.0 W/80.0 W		115.0 W/212.0 W	167.0 W/230.0 W	146.0 W/220.0 W
Noise level	59/61 dB (A)		75/76 dB (A)		
Temperature range	–10°C to +55°C				
Colour	RAL 7035[2]				
Protection category to EN 60 529/09.2000	IP 54 standard IP 55 when using an additional fine filter mat IP 56 when using an additional fine filter mat and hose-proof hood				
Model No. outlet filter SK	**3326.207**				

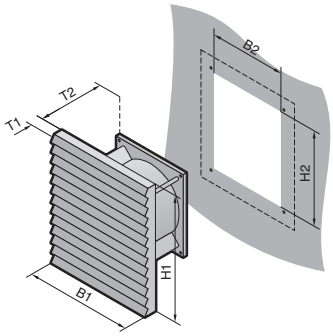
Accessories	Packs of						Page
Spare filter mats	5	3173.100		3327.700			725
Fine filter mats	5	3183.100					725
Thermostat	1	3110.000				–	715
Temperature indicator	1	3114.100	3114.115	3114.100	3114.115	–	714
Speed control	1	3120.000	3120.115	3120.000	–	–	716
Hose-proof hood	1	3326.800					721

[1] For metal thickness > 2.5 mm, the cut-out B2/H2 must be 1 mm larger.
[2] RAL 7032 on request.
Special voltages available on request. We reserve the right to make technical modifications.

Accessories Page 710 **EMC-protected design** Page 694 **Configuration software** Page 1155

Fan-and-filter units – EMC

Air throughput 20 – 105 m³/h



B = Width
T = Depth

Supply includes:
Complete fan-and-filter units ready for installation, including drilling template, filter mat and assembly parts.

Approvals,
see page 86.

Performance diagrams,
available on the Internet.

Model No. fan-and-filter unit SK		**3321.607**	**3321.617**[1]	**3322.607**	**3322.617**[1]	**3323.607**	**3323.617**[1]
Rated operating voltage V, Hz		230, 50/60	115, 50/60	230, 50/60	115, 50/60	230, 50/60	115, 50/60
Dimensions in mm	B1/H1	116,5		148,5		204	
	B2/H2	92 + 0.8[2]		124[2]		177[2]	
	T1	10		10.5		12.5	
Max. installation depth mm	T2	42		57		82.5	
Air throughput, unimpeded air flow		**20/25 m³/h**		**55/66 m³/h**		**105/120 m³/h**	
Air throughput with outlet filter including standard filter mat		1 x 3321.267: **15/18 m³/h**		1 x 3322.267: **43/50 m³/h** 2 x 3322.267: **48/55 m³/h** 1 x 3323.267: **48/55 m³/h**		1 x 3323.267: **71/82 m³/h** 2 x 3323.267: **85/98 m³/h** 1 x 3325.267: **78/90 m³/h**	

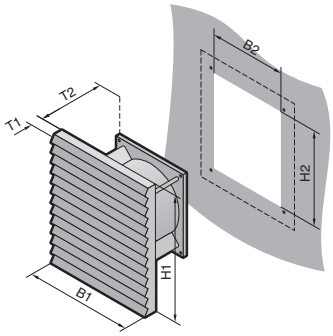
Axial fan		Self-starting shaded pole motor					
Rated current max.		69 mA/ 58 mA	138 mA/ 115 mA	0.12 A/ 0.11 A	0.24 A/ 0.23 A	0.12 A/ 0.11 A	0.24 A/ 0.23 A
Power		12.5 W/10.3 W		19.0 W/18.0 W			
Noise level		41/46 dB (A)		46/49 dB (A)			
Temperature range		–10°C to +55°C					
Colour		RAL 7035[3]					
Protection category to EN 60 529/09.2000		IP 54 standard					
Model No. outlet filter – EMC SK		**3321.267**		**3322.267**		**3323.267**	

Accessories	Packs of							Page
Spare filter mats	5	3321.700		3322.700		3171.100		725
Fine filter mats	5	–				3181.100		725
Thermostat	1	3110.000						715
Temperature indicator	1	3114.100	3114.115	3114.100	3114.115	3114.100	3114.115	714
Speed control	1	3120.000	3120.115	3120.000	3120.115	3120.000	3120.115	716
Hose-proof hood	1	3321.800		3322.800		3323.800		721

[1] Delivery times available on request.
[2] For metal thickness > 2.5 mm, the cut-out B2/H2 must be 1 mm larger.
[3] RAL 7032 on request.
Special voltages available on request. We reserve the right to make technical modifications.

Accessories Page 710 **Configuration software** Page 1155

Air throughput 180 – 700 m³/h



B = Width
T = Depth

Supply includes:
Complete fan-and-filter units ready for installation, including drilling template, filter mat and assembly parts.

Approvals,
see page 86.

Performance diagrams,
available on the Internet.

Model No. fan-and-filter unit SK		**3324.607**	**3324.617**[1]	**3325.607**	**3325.617**	**3326.607**	**3326.617**[1]	**3327.607**	**3327.617**[1]
Rated operating voltage V, Hz		230, 50/60	115, 50/60	230, 50/60	115, 50/60	230, 50/60	115, 50/60	230, 50/60	115, 50/60
Dimensions in mm	B1/H1	255				323			
	B2/H2	224[2]				292[2]			
	T1	12.5				12.5			
Max. installation depth mm	T2	105				129		145	
Air throughput, unimpeded air flow		**180/160 m³/h**		**230/265 m³/h**		**550/600 m³/h**		**700/720 m³/h**	
Air throughput with outlet filter including standard filter mat		1 x 3325.267: **115/95 m³/h** 2 x 3325.267: **165/140 m³/h** 1 x 3326.267: **155/130 m³/h**		1 x 3325.267: **170/205 m³/h** 2 x 3325.267: **200/230 m³/h** 1 x 3326.267: **190/215 m³/h**		1 x 3325.267: **170/205 m³/h** 2 x 3325.267: **200/230 m³/h** 1 x 3326.267: **360/390 m³/h**		1 x 3326.267: **525/575 m³/h**	

Axial fan	Self-starting shaded pole motor				Capacitor motor			
Rated current max.	0.19 A/ 0.20 A	0.38 A/ 0.40 A	0.28 A/ 0.24 A	0.53 A/ 0.49 A	0.29 A/ 0.35 A	0.58 A/ 0.70 A	0.65 A/ 0.95 A	1.50 A/ 2.00 A
Power	30.0 W/ 35.0 W		41.0 W/ 38.0 W		64.0 W/ 80.0 W		155.0 W/ 212.0 W	167.0 W/ 230.0 W
Noise level	52/48 dB (A)		54/56 dB (A)		59/61 dB (A)		75/76 dB (A)	
Temperature range	–10°C to +55°C							
Colour	RAL 7035[3]							
Protection category to EN 60 529/09.2000	IP 54 standard							
Model No. outlet filter – EMC SK	**3325.267**				**3326.267**			

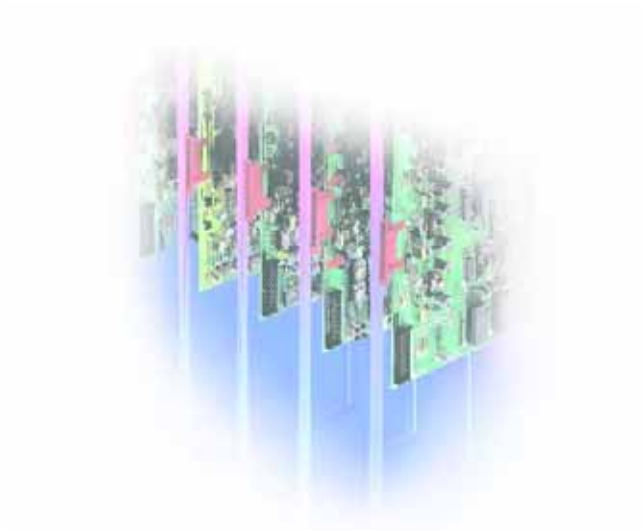
Accessories	Packs of									Page
Spare filter mats	5	3172.100				3173.100		3327.700		725
Fine filter mats	5	3182.100				3183.100				725
Thermostat	1	3110.000								715
Temperature indicator	1	3114.100	3114.115	3114.100	3114.115	3114.100	3114.115	3114.100	3114.115	714
Speed control	1	3120.000	3120.115	3120.000	3120.115	3120.000	3120.115	3120.000	3120.115	716
Hose-proof hood	1	3324.800				3326.800				721

[1] Delivery times available on request.
[2] For metal thickness > 2.5 mm, the cut-out B2/H2 must be 1 mm larger.
[3] RAL 7032 on request.
Special voltages available on request. We reserve the right to make technical modifications.

Accessories Page 710 **Configuration software** Page 1155

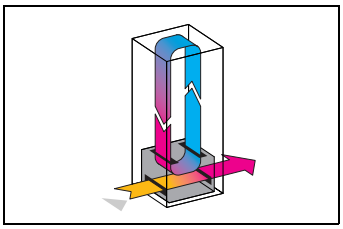
Climate control tailored to enclosures

Features



All rack-mounted climate control components are fitted directly onto the 482.6 mm (19″) mounting level for subracks. Positioning directly beneath the electronic components ensures effective cooling, and prevents the formation of hotspots.

Rack-mounted cooling units



Useful cooling output 1000 W, 6 U
The heated air is drawn in, cooled, and blown beneath the rack-mounted electronics to be cooled.

Simple attachment to the 482.6 mm (19″) mounting angles
Sealed enclosures require a door cut-out for the external air circuit. With open enclosures, a fully equipped front is essential. The setpoint of the temperature controller is set via a service flap.

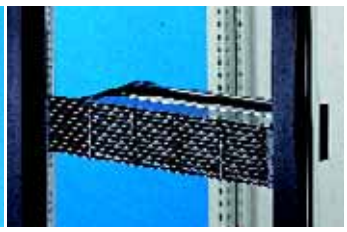
Rack-mounted fan

Vario rack-mounted fan
The rack-mounted fan slides into the guide frame like a drawer. Connectors on the rear ensure immediate contact.

Installation options for the guide frame: Directly in the subrack, via two mounting brackets on the 482.6 mm (19″) mounting angles.

Ideal for avoiding hotspots in fully populated enclosures.

Centrifugal fan



320 m³/h air throughput, 2 U
The high air throughput means that Rittal centrifugal fans are capable of dissipating large heat losses from the enclosure. The minimal noise generation of 52 dB creates a pleasant working environment.

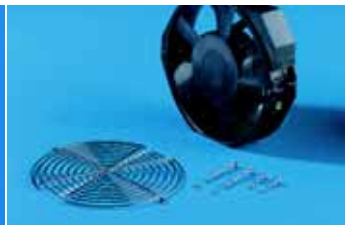
Front outlet grille 2 U for hot air outlet to the outside in the upper section of the enclosure.

Features

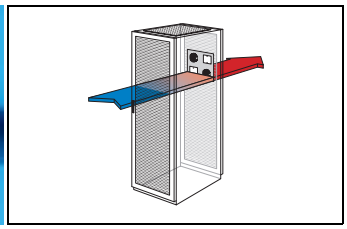
Ready-to-use, wired modules equipped with fans for numerous Rittal enclosure system platforms offer effective air throughput and minimal assembly work. Fan roofs, fan cross members for server enclosures (door installation), internal fan mounting panels and enclosure internal fans are all available.

Fans for integration into the door

For TS 8: Door-mounted fans for server enclosures
Specifically for installation in the tubular door frame of perforated doors.

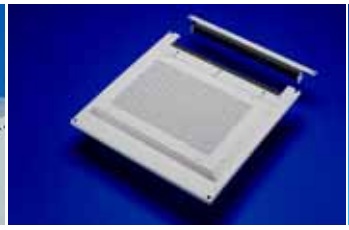


Door-mounted fans for TS 8 server enclosures
Specifically for installing in perforated doors. The growing packaging density in data communications and network enclosures make active, direct ventilation of the enclosure indispensable. The door-mounted fans, attached to the rear or front door, support horizontal air routing of the servers.



Fans for integration into the roof

For all enclosures: Roof-mounted fans, passive or active
May be integrated into any enclosure roof area with suitable dimensions for the mounting cut-out.

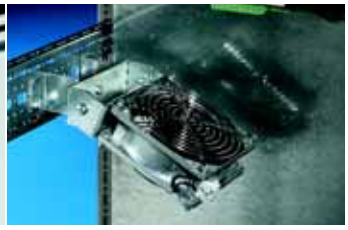


For TS 8: Fan roof, modular
In exchange for the existing roof plate. Fan and cable entry are pre-integrated.

For the office sector: Roof-mounted fan
Low noise generation and high performance for sensitive office areas. Unit consisting of TS roof plate and fan.

Air baffle systems

For TS 8: Internal fan mounting panel
Twin-walled side panel for targeted air routing.

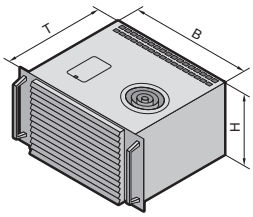


Enclosure internal fan
Supports active climate control components and thereby selectively avoids hotspots.

For TS 8: Air baffle system
Cold air from the hollow base is routed to the twin-walled door and distributed in a targeted manner.

Rack-mounted cooling units

for 482.6 mm (19″), useful cooling output 1000 W



B = Width
T = Depth

Supply includes:
Wired ready for connection with connection cable (3 m), including drilling template.

Also required:
For installation in a closed enclosure: Adaptor for front air supply and air duct for waste air, see accessories.

Approvals,
see page 86.

Detailed drawing,
see page 1295.

Performance diagrams,
available on the Internet.

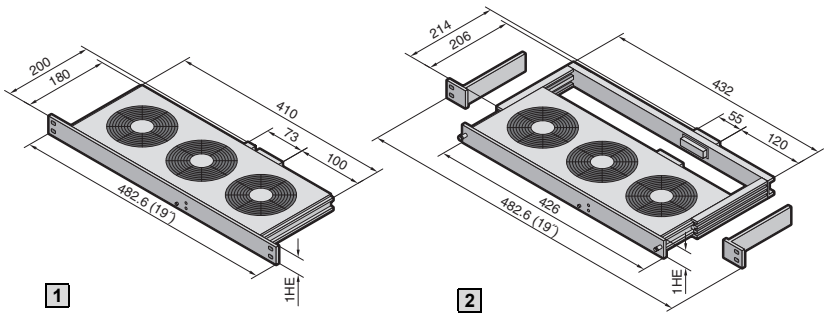
Model No. SK		**3278.134**[1]	**3292.134**
Rated operating voltage V, Hz		115, 50/60	230, 50/60
Dimensions in mm	W H D	445 265.9 (6 U) 542	
Useful cooling output $\dot{Q}_K$ to DIN 3168	**L 35 L 35** **L 35 L 50**	**1000 W/1050 W** **660 W/770 W**	
Rated current max.		8.4 A/10.8 A	3.8 A/4.5 A
Start-up current		21.0 A/22.0 A	10.0 A/11.8 A
Pre-fuse T		10.0 A/16.0 A	6.0 A/6.0 A
Power consumption P_{el} to DIN 3168	L 35 L 35 L 35 L 50	615 W/710 W 680 W/800 W	585 W/650 W 650 W/720 W
Refrigeration factor $\varepsilon = \dot{Q}_K/P_{el}$	L 35 L 35	1.6	1.7
Refrigerant		R134a, 700 g	
Permissible operating pressure p. max.		25 bar	
Temperature and setting range		+20°C to +55°C	
Protection category to EN 60 529/09.2000	External circuit	IP 34	
	Internal circuit	IP 54	
Duty cycle		100 %	
Type of connection		Connection cable 3 m	
Weight		38 kg	35 kg
Colour		RAL 7032	
Air throughput of fans	External circuit	620 m³/h	
	Internal circuit	460 m³/h	
Temperature control		Internal thermostat (factory setting +35°C)	

Accessories	Packs of			Page
Filter mats	3	3286.000		723
Adaptor for front air supply	1	3259.000		713
Air duct	10	3220.000		713
Temperature indicator	1	3114.115	3114.100	714
Door-operated switch	1	4127.000		1030

[1] Delivery times available on request.
Special voltages available on request. We reserve the right to make technical modifications.

Accessories Page 710 **Configuration software** Page 1155

for 482.6 mm (19″), air throughput 320/480 m³/h



1 2

HE = U

Rack-mounted fan/Vario rack-mounted fan supply includes:
Wired unit ready for connection, including terminal strip and assembly parts.

Guide frame supply includes:
Guide frame including connector and fitted connection cable (3 m), bracket for optional attachment to the 482.6 mm (19″) system, assembly parts.

Also required:
Remember to order the appropriate guide frame for your chosen application.

Approvals,
see page 86.

Detailed drawing,
see page 1295.

Performance diagrams,
available on the Internet.

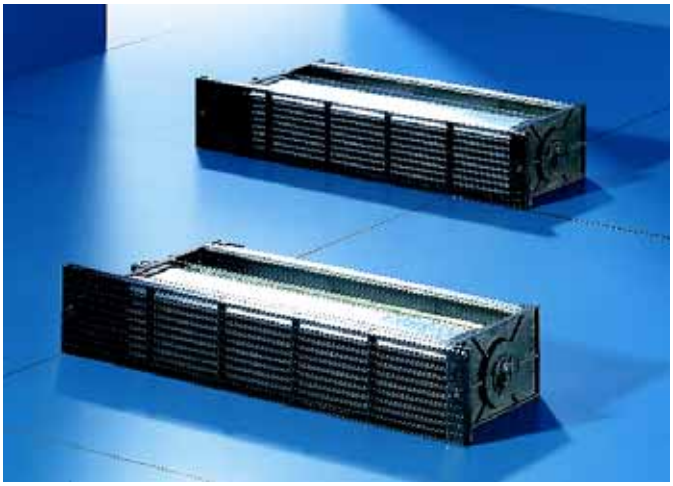
		1 Rack-mounted fans					2 Vario rack-mounted fans			
		Model No. SK					**Model No. SK**			
2 fans Distance between axes 85 mm		**3340.024**[1]	**3340.115**[1]	**3340.230**	**–**	**–**	**3350.024**[1]	**3350.115**[1]	**3350.230**	**–**
3 fans Distance between axes 85 mm		**3341.024**[1]	**3341.115**	**3341.230**	**–**	**9769.002**[1)2)]	**3351.024**[1]	**3351.115**[1]	**3351.230**	**–**
3 fans Distance between axes 105 mm		**3342.024**	**3342.115**[1]	**3342.230**	**3342.500**[2)3)]	**–**	**3352.024**[1]	**3352.115**[1]	**3352.230**	**3352.500**[1)3)]
Rated operating voltage V		24 V (DC)	115 V (AC)	230 V (AC)	24 V (DC) 115 – 230 V (AC)	36 V (DC) up to 72 V (DC)	24 V (DC)	115 V (AC)	230 V (AC)	24 V (DC) 115 – 230 V (AC)
Model No. SK matching guide frame		**–**	**–**	**–**	**–**	**–**	**3356.100**[1]	**3355.100**	**3355.100**	**3357.100**[1]
Accessories	Page									
Temperature indicator 230 V (AC)	714	3114.100	3114.115	3114.100	3114.024	–	3114.100	3114.115	3114.100	3114.024
Thermostat	715	3110.000								
Speed control	716	3120.000	3120.115	3120.000	–	–	3120.000	3120.115	3120.000	–

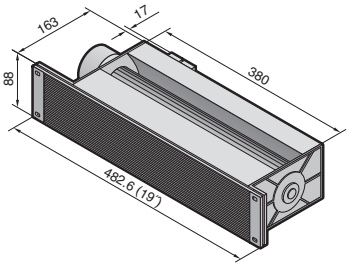
Technical specifications								
Model No. SK/CS	**3340.230** **3350.230**	**3340.115** **3350.115**	**3340.024** **3350.024**	**3341.230** **3351.230** **3342.230** **3352.230**	**3341.115** **3351.115** **3342.115** **3352.115**	**3341.024** **3351.024** **3342.024** **3352.024**	**3342.500**[2)] **3352.500**[2)]	**9769.002**
Rated operating voltage V, Hz	AC 230 V 50/60 Hz	AC 115 V 50/60 Hz	DC 24 V –	AC 230 V 50/60 Hz	AC 115 V 50/60 Hz	DC 24 V –	DC 24 V AC 115 – 230 V 50/60 Hz	36 V (DC) up to 72 V (DC)
Rated current max.	0.24 A/ 0.22 A	0.46 A/ 0.46 A	0.49 A	0.36 A/ 0.33 A	0.69 A/ 0.69 A	0.74 A	0.85 A	0.28 A
Pre-fuse T	6.0 A							6.0 A
Number of fans	2			3				3
Air throughput, unimpeded air flow	320 m³/h			480 m³/h				250 m³/h
Temperature range	–10°C to +55°C							–33°C to +55°C
Noise level	51 dB (A)	52 dB (A)	51 dB (A)	51 dB (A)	52 dB (A)	51 dB (A)		52 dB (A)

1) Delivery times available on request.
2) Rack-mounted fan for metric mounting angles available on request.
3) Version with monitoring.

Accessories Page 710 **Configuration software** Page 1155

Air throughput 320 m³/h





Supply includes:
Fully assembled and wired unit, ready for connection, including filter mat.

Approvals,
see page 87.

Detailed drawing,
see page 1295.

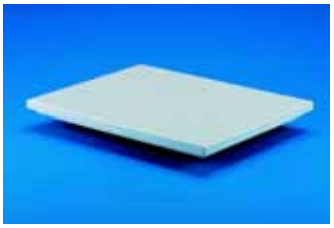
Performance diagrams,
available on the Internet.

Model No. SK		**3145.000**	**3144.000**
Rated operating voltage V, Hz		115, 50/60	230, 50/60
Dimensions in mm	W H D	482.6 (19″) 88 (2 U) 158	
Air throughput, unimpeded air flow		**320 m³/h**	

Rated current max.		0.32 A	0.16 A	
Power		37 W		
Noise level		52 dB (A)		
Speed		2245 rpm^{-1}		
Temperature range		–10°C to +55°C		
Maximum static pressure difference		65 – 70 Pa		
Accessories	Packs of			Page
Temperature indicator	1	3114.115	3114.100	714
Thermostat	1	3110.000		715
Filter mats	5	3177.000		723
Front outlet grille 2 U	1	3176.000		721
Roof vent	1	3148.007		701
Speed control	1	3120.115	3120.000	716

Special voltages available on request. We reserve the right to make technical modifications.

Accessories Page 710 **Configuration software** Page 1155



RTT roof-mounted fan and vent attachment

for TS

The active roof-mounted fan and the passive vent attachment (TS 8801.380) integrate perfectly into the system-wide mounting concept of the Rittal TopTherm platform. They fit precisely onto the cut-outs of the small and medium performance category of TopTherm roof-mounted cooling units.

Of course, they may also be mounted on any sufficiently large roof surface.

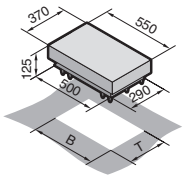
TS roof plates with prepared mounting cut-outs are additionally available.

Roof-mounted fan supply includes:
Unit ready to connect with built-in radial fan, sealing material and assembly parts.

Vent attachment:
see page 719.

Protection category:
IP 43 as per EN 60 529/09.2000

Detailed drawing,
see page 1296.



B = Width
T = Depth

Model No. SK	3149.410	3149.420	3149.440	3149.810	3149.820	3149.840	8801.380	Page
Rated operating voltage V, Hz	115, 50/60	230, 50/60	400, 3~, 50/60 460, 3~, 60	115, 50/60	230, 50/60	400, 3~, 50/60 460, 3~, 60	Roof vent	
Air throughput, unimpeded air flow	**400 m³/h**			**800 m³/h**			**Without motor**	
Required mounting cut-out W x D mm	475 x 260						490 x 390	
Power consumption of fan	120 W/170 W		95 W/140 W	170 W/225 W		180 W/310 W		
Rated current of fan	1.1/1.6 A	0.55/0.88 A	0.35/0.35 A	1.5/2.2 A	0.75/1.1 A	0.35/0.55 A		
Temperature range	–10°C to +55°C							
Noise level	68/69 dB (A)			69/70 dB (A)				
Weight	10 kg			11 kg			9 kg	
Colour shade	RAL 7035							
Accessories								
Roof plate 600 x 600 mm for TS 8 with cut-out	8801.300						8801.310	718
Roof plate 600 x 800 mm for TS 8 with cut-out	8801.320						8801.330	718
Roof plate 1200 x 600 mm for TS 8 with cut-out	–						8801.350	718
Temperature indicator	3114.115	3114.100	–	3114.115	3114.100	–	–	714
Speed control	3120.115	3120.100	–	3120.115	3120.100	–	–	716

Roof-mounted fan

- The roof-mounted fan is easily installed using 6 screws. The sealing tape supplied can be used to seal it against the enclosure.
- The assembly screws are invisible from the outside.
- The roof-mounted fan casing has a large air outlet surface and labyrinthine air ducting.

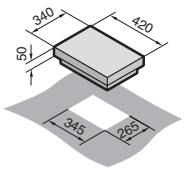
Protection category:
IP 43 to EN 60 529/09.2000. By additionally installing the filter holder with filter mat SK 3175.000, with roof vent SK 3148.000
a protection category of IP 44 is achieved.

Fully wired unit ready for connection with built-in radial fan, sealing material and assembly parts, connection cable (3 m), drilling template.

Accessories:

Filter holder,
see page 722.

Detailed drawing,
see page 1296.



Model No. SK	3149.007	3169.007	3148.007
Rated operating voltage V, Hz	230, 50/60	115, 50/60	Without fan motor
Air throughput	**360 m³/h**		
Rated current max.	0.2 A	0.55 A	
Power consumption	42 W	65 W	
Temperature range	–10°C to +60°C		
Noise level	53 dB (A)		
Weight	7.8 kg		
Colour[1)]	RAL 7035, textured enamel		

[1)] To order the version in RAL 7032, please add extension .000 to the Model No.
Special voltages available on request. We reserve the right to make technical modifications.

Roof-mounted fan

Roof-mounted fan

for TS/FR(i) for the office sector

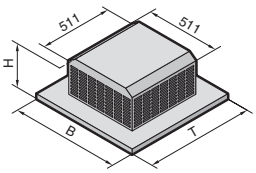
This new roof ventilation concept offers a wealth of performance, assembly and cost benefits associated with the use of integrated ventilation systems. This roof-mounted fan may be ordered with and without a roof plate. Another outstanding feature is the enormous volumetric flow in proportion to exceptionally low noise levels, making it ideal for use in sensitive office areas.

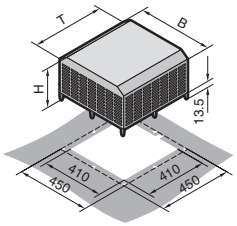
Technical specifications:
- Fitted onto a roof plate based on TS.
- Easy assembly; mounting cut-outs have been provided.
- Radial fan.

Supply includes:
Fully wired ready for connection, including assembly parts.

Model No. SK	3164.610	3164.620	3164.810	3164.820	3164.115	3164.230	Page
Rated operating voltage V, Hz	115, 50/60	230, 50/60	115, 50/60	230, 50/60	115, 50/60	230, 50/60	
Air throughput (unimpeded air flow)	**1500 m³/h[1)]**						
Design	with roof plate				without roof plate		
Dimensions in mm W H D	800 240 800		800 240 900		511 227 511		
Power consumption	68 W/81 W						
Rated current	0.6 A/0.7 A	0.3 A/0.35 A	0.6 A/0.7 A	0.3 A/0.35 A	0.6 A/0.7 A	0.3 A/0.35 A	
Radial fan	–						
Noise level	40 dB (A)						
Temperature range	+20°C to +55°C						
Colour	RAL 7035						
Accessories							
Temperature indicator in 1 U patch panel	7109.035						714
Temperature indicator	3114.115	3114.100	3114.115	3114.100	3114.115	3114.100	714
Thermostat	3110.000						715

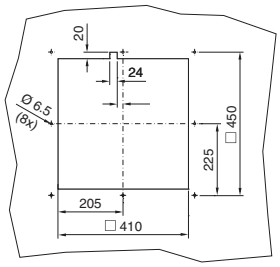
[1)] 800 m³/h at 40 Pa counterpressure using two integrated louvres, type DK 7580.500, in the enclosure base/plinth.
Special voltages available on request. We reserve the right to make technical modifications.





B = Width
T = Depth

Mounting cut-out
only required for fans wtihout roof plate



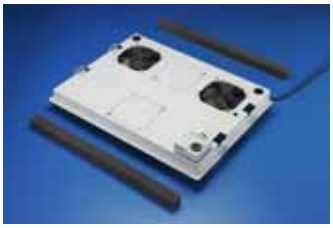
TS 8 air baffle system

The system has an air inlet nozzle in the base frame. In this way, cold air may be drawn in from below. The air is routed into the twin-walled door. The cold air can then be distributed inside the rack with special covers. 15 covers are supplied with every door.

Colour:
RAL 7035

	Packs of	Model No. DK
TS 8 sheet steel door, twin-walled W 600 x H 2000 mm	1	**7766.520**
TS 8 sheet steel door, twin-walled W 600 x H 2200 mm	1	**7766.522**
Air inlet nozzle W 600 mm	1	**7766.500**

Delivery times available on request.



Fan mounting plate

for TS

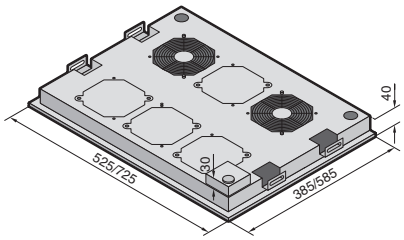
The fan mounting plate may be retro-fitted in all TS 8 network enclosures from above. The plate is mounted at the front of the enclosure, whilst the rear section is left free for cable entry. A rubber cable clamp strip is supplied loose for optional sealing at the rear.

The following combinations are also possible:

- Solid roof plate raised with 20 or 50 mm roof spacers.
- Roof plate for cable entry raised with 20 or 50 mm roof spacers.
- Vented roof plate for cable entry.

In conjunction with the large swing frame, usage is only possible from an enclosure depth of 800 mm, in conjunction with a roof plate for cable entry from 900 mm.

Note:
Not suitable for crane transportation!
Not suitable for combination with 482.6 mm (19″) mounting frame.



For enclosures		Number of fans	Max. number of fans	Model No. DK
Width mm	Depth mm			
600	600	2	4	**7966.035**
600	800 900 1000 1200	2	6	**7968.035**
800	600	2	6	**7986.035**
800	800 900 1000 1200	2	6	**7988.035**

The air throughput can be increased with the fan expansion kit DK 7980.000.

Technical specifications for one fan:
Rated operating voltage: 230 V
Power consumption: 15/14 W at 50/60 Hz
Air throughput (unimpeded air flow):
160/180 m^3/h, 50/60 Hz
Temperature range: –10°C to +55°C

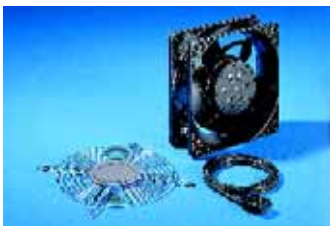
Technical specifications of thermostat:
Rated operating voltage: 250 V
Temperature range: +5°C to +55°C

Colour:
RAL 7035

Supply includes:
2 fans, 2/4 cut-outs to extend to 4/6 fans, thermostat, rubber cable clamp strip. Thermostat and fan fully wired to connection cable (2.5 m).

Accessories:

Fan expansion kit,
see page 703.
Rubber cable clamp strip SZ 2573.000 for sealing at the sides and targeted air routing when bayed,
see page 1047.



Fan expansion kit

For retro-fitting various fan units or to supplement the fan mounting plate and modular fan roof.

Technical specifications DK 7980.000:
Rated operating voltage: 230 V~
Power consumption: 15/14 W at 50/60 Hz
Air throughput (unimpeded air flow):
160/180 m^3/h, 50/60 Hz
Noise level (unimpeded air flow): 37 dB (A)
Temperature range: –10°C to +55°C

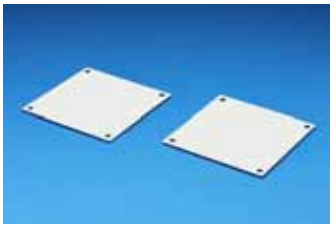
Technical specifications DK 7980.100:
Rated operating voltage: 230 V~
Power consumption: 14/12 W at 50/60 Hz
Air throughput (unimpeded air flow):
108/120 m^3/h, 50/60 Hz
Noise level (unimpeded air flow): 34 dB (A)
Temperature range: –20°C to +70°C

Technical specifications DK 7980.148:
Rated operating voltage: 48 V (DC)
Power consumption: 7.7 W
Air throughput (unimpeded air flow): 184 m^3/h
Noise level (unimpeded air flow): 43 dB (A)
Temperature range: –20°C to +70°C

Dimensions W x H x D mm	Packs of	Model No. DK
119 x 119 x 38	1 set	**7980.000**
119 x 119 x 25	1 set	**7980.100**
119 x 119 x 25	1 set	**7980.148**

Supply includes:
Fan, including assembly parts and connection cable (0.61 m).

DC fan mounting plate



Cover plates for fan panels

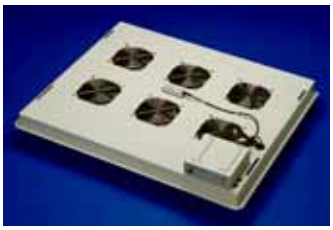
for FlatBox
To cover unused fan panels when using fans in the FlatBox.

Material:
Sheet steel

Surface finish:
Powder-coated in RAL 7035

Supply includes:
Assembly parts.

Packs of	Model No. DK
6	**7507.760**



Fan mounting plate DC

for TS

Exceptionally low-noise thanks to FCS speed control, fully fitted
Suitable for TS 8 enclosures with a raised roof (> 20 mm) or TS 8 roof plate, vented. The fan mounting plate may be used as an alternative to fan mounting plate 7988.035. It is installed from above. Cable entry is prepared in the rear section of the plate.
Not suitable for combination with 482.6 mm (19″) mounting frame.

Advantages of the DC fan mounting plate with FCS technology:

- Exceptionally low-noise thanks to speed control.
- All fans are individually monitored for failure.
- High air throughput thanks to DC technology (unimpeded air flow 6 x 175 m^3/h = 990 m^3/h).
- EMC compatibility.
- Temperature monitoring and control.
- High level of safety (low safety voltage with 24 V DC power supply).
- Visual and acoustic alarm messages, plus relay alarm output.
- Freely selectable installation location for the FCS control unit (included with the supply of the fan mounting plate, in 482.6 mm (19″) with 7320.440 or on the frame with 7320.450).
- Suitable for international use, thanks to wide-range power supply 100 – 240 V AC and socket to IEC 320.
- Pre-configured.
- Network-compatible via CMC-TC Processing Unit II 7320.100 (all relevant data such as temperature etc. are displayed in the web browser, or alarms are sent in the form of an SNMP trap).

For enclosures width mm	For enclosures depth mm	Number of DC fans	Model No. DK
800	800 900 1000	6	**7858.488**

Technical specifications:
Power supply rated voltage:
100 – 240 V AC, 50/60 Hz
Power supply rated current: Max. 1.5 A
Power supply secondary range: 24 V DC, 3 A
Temperature range: +5°C to +40°C
Total air throughput (unimpeded air flow):
6 x 175 m^3/h = 990 m^3/h

Technical specifications for one fan:
Rated voltage: 24 V DC
Rated current: Max. 0.28 A
Rated output: Max. 6.72 W
Air throughput (unimpeded air flow): 175 m^3/h
Speed: 2650 rpm
Noise level: Up to 45 dB (A)
at maximum speed activation

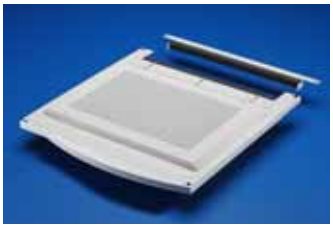
Also required:

Connection cable 230/115 V.
Example D version, Model No. 7200.210,
see page 818.

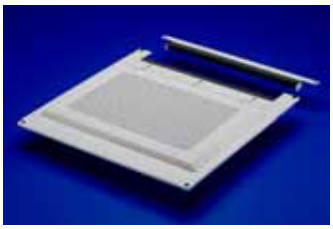
Accessories:

1 U mounting unit, Model No. 7320.440,
see page 821.
Mounting module, Model No. 7320.450,
see page 821.

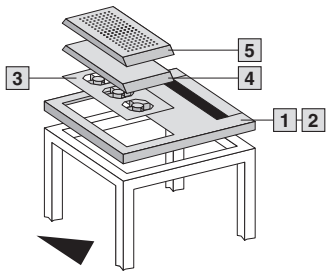
Note:
For more information on the FCS system,
see page 813.



1



2



Fan roof, modular, two-piece

for TS, FR(i)

The modular roof plate consists of individual components and can be configured for the ventilation of the enclosures in various ways.
The modules consist of:

Roof plate, two-piece with cut-out
For fan mounting and cable entry at the rear via a sliding angular bracket with rubber cable clamp strip. Replacing the existing roof plate. The two-piece design allows convenient retrofitting of cables at any time.

Cover plate
To cover the cut-out, optionally solid or vented options. The top-mounted cover plate may be raised for extra air throughput using the supplied spacers.

Fan insert
For active ventilation:
A fully pre-wired fan tray including 2.5 m connection cable, with two fan motors and additional cut-outs. The air throughput may be increased with a fan expansion kit.

Material:
Sheet steel, spray-finished

Colour:
RAL 7035

Technical specifications for one fan:
Rated operating voltage: 230 V
Power consumption: 15/14 W at 50/60 Hz
Air throughput (unimpeded air flow):
160/180 m^3/h at 50/60 Hz
Temperature range: –10°C to +55°C

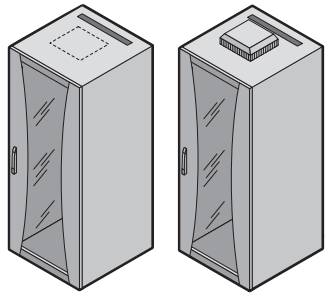
Detailed drawing,
see page 1296.

Accessories:

Fan expansion kit DK 7980.000,
see page 703.
Thermostat SK 3110.000,
see page 715.
Speed control SK 3120.000,
see page 716.

For enclosures		Model No. DK					Fan insert	
		Roof plate FR(i)	Roof plate TS	Cover plate				
Width mm	Depth mm	1 With cut-out	2 With cut-out	4 Solid	5 Vented	3 Fan insert	Fans pre-wired	Maximum no. of fans
600	600	**7856.366**[1)]	**7826.366**	**2102.180**[1)]	**2102.400**	**2102.320**	2	2
600	800	**7856.368**[1)]	**7826.368**	**2102.190**[1)]	**2102.410**	**2102.490**	2	6
600	900	–	**7826.369**	**2102.190**[1)]	**2102.410**	**2102.490**	2	6
600	1000	**7856.360**[1)]	**7826.360**	**2102.190**[1)]	**2102.410**	**2102.490**	2	6
600	1200	**7856.362**[1)]	**7826.362**	**2102.190**[1)]	**2102.410**	**2102.490**	2	6
800	600	–	**7826.486**	**7885.100**	**7885.200**	**7885.000**	2	3
800	800	**7856.388**[1)]	**7826.488**	**7886.100**	**7886.200**	**7886.000**	2	8
800	900	–	**7826.489**	**7886.100**	**7886.200**	**7886.000**	2	8
800	1000	**7856.380**[1)]	**7826.480**	**7886.100**	**7886.200**	**7886.000**	2	8
800	1200	–	**7826.382**	**7886.100**	**7886.200**	**7886.000**	2	8

[1)] Delivery times available on request.
Design panel FR(i) already included with the supply of the standard roof plate.



Fan unit, active

for TE

For active ventilation of the TE 7000. The fan unit is installed in the prepunched cut-out.
An additional fan may optionally be integrated.

Supply includes:
Fan unit including assembly parts, 2 fans, 1 thermostat and open connection cable.

Technical specifications for one fan:
Fan extension kit, 7980.000,
see page 703.

Technical specifications of thermostat:
Rated operating voltage: 250 V
Temperature range: +5°C to +55°C

For enclosures W x D mm	Number of pre-wired fans	Possible number of fans	Model No. TE
All dimensions	2	3	**7000.670**

Note:
Connection via junction box or country-specific connector.

Accessories:

Fan expansion kit,
see page 703.

Active kit

for TE

consisting of fan unit including thermostat, complete, wired ready for connection, socket strip (DK 7000.630) for up to 8 earthing pin plugs, version D and open connection cable (DK 7200.210).

Packs of	Model No. DK
1 set	**7000.680**

Fan cross member

Door-mounted fan

for server enclosures TS, TE

Specifically for installing in perforated doors.
The growing packaging density in data communications and network enclosures make active, direct ventilation of the enclosure indispensable. The door mounted fan, which is attached to the rear or front door, supports horizontal air routing via the servers and therefore facilitates faster heat dissipation from active components.

Technical specifications:
- Standard assembly with two fans.
- Air throughput, unimpeded air flow 600 m³/h.
- By adding two fan extension kits, the air throughput is increased to 1200 m³/h.
- The direction of air flow is easily reversed by rotating the fan.
- Several units may be positioned in a cascade arrangement.
- Simple mounting on the tubular door frame.

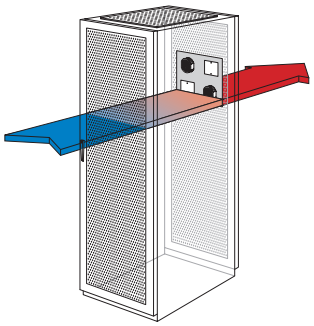
Supply includes:
Wired ready for connection with 2.5 m connection cable, including assembly parts.

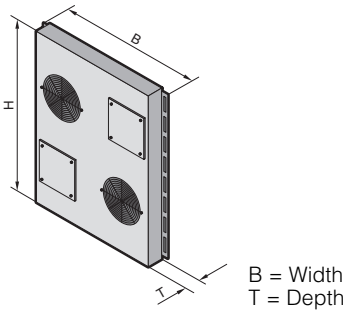
Accessories:

Fan expansion kit,
see page 703.

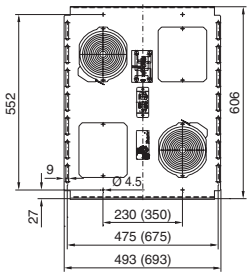
Note:
Only for mounting on the tubular door frame!

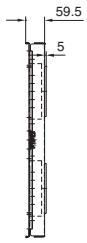
Door configuration for installation in 2 and 4-door ISP racks available on request.





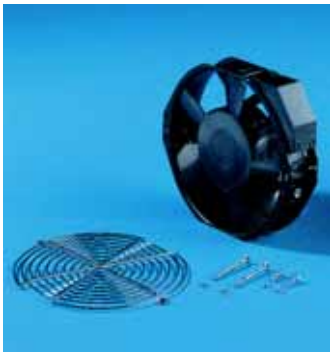
B = Width
T = Depth





Model No. SK	3165.624[1)]	3165.648[1)]	3165.615[1)]	3165.630[1)]	3165.824[1)]	3165.848[1)]	3165.815[1)]	3165.830[1)]	Page
Rated operating voltage V, Hz	24 (DC)	48 (DC)	115, 50/60	230, 50/60	24 (DC)	48 (DC)	115, 50/60	230, 50/60	
Air throughput (unimpeded air flow)	**600 m³/h**								
Power consumption for two fans	40 W	48 W	70 W/64 W	70 W/70 W	40 W	48 W	70 W/64 W	70 W/70 W	
Rated current of fan	1.5 A	1.0 A	0.76 A/0.72 A	0.38 A/0.36 A	1.5 A	1.0 A	0.76 A/0.72 A	0.38 A/0.36 A	
Dimensions in mm W H D	493 606 64.5				693 606 64.5				
For doors with width (mm)	600				800				
Noise level	55 dB (A)								
Temperature range	+20°C to +55°C								
Colour	RAL 7035								
Accessories									
Temperature indicator	3114.024	–	3114.115	3114.100	3114.024	–	3114.115	3114.100	714
Thermostat	3110.000								715

[1)] Delivery times on request.
Special voltages available on request. Technical modifications reserved.



Fan expansion kit

for door-mounted fan
To increase the air throughput of the door mounted fan.

To fit door-mounted fan	Model No. SK
SK 3165.624, SK 3165.824	**3165.024**
SK 3165.648, SK 3165.848	**3165.048**
SK 3165.615, SK 3165.815	**3165.115**
SK 3165.630, SK 3165.830	**3165.230**

Internal fan mounting panel

for TS

A fan unit integrated into the TS 8 twin wall for targeted air routing in the lower part of the enclosure. A second fan unit may optionally be mounted to reinforce air circulation. Optional air routing design may be achieved retrospectively by simply inserting or exchanging cover plates

Technical specifications:

- Rated operating voltage: 230 V, 50/60 Hz
- Air throughput (3 fans): 200/230 m^3/h (unimpeded air flow)
- Power consumption (3 fans): 57/54 W
- Rated current (3 fans) 0.36/0.33 A

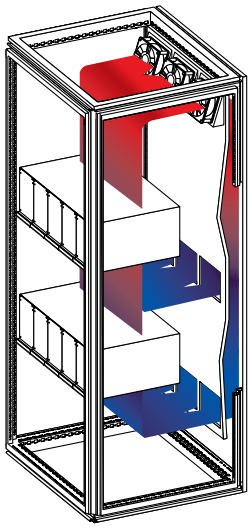
Supply includes:

1 pack =
1 internal fan mounting panel,
3 fan cross-members,
3 cover plates.

Property rights:

German patent no. 198 04 902
European patent no. 1 053 581
with validity for ES, FR, GB, IT
Australian patent no. 737 950
US patent no. 6,494,779

For TS enclosure		Height of internal panel mm	Model No. SK
Width mm	Height mm		
600	1800	1548	**3347.180**
600	2000	1748	**3347.200**
800	1800	1548	**3348.180**
800	2000	1748	**3348.200**



Fan cross member

for internal fan mounting panel

May be additionally installed to increase the air circulation.

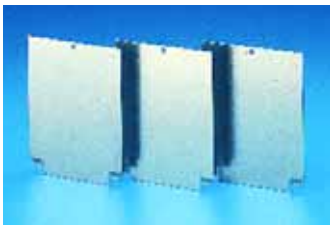
Technical specifications:

- Rated operating voltage: 230 V, 50/60 Hz
- Air throughput (3 fans): 200/230 m^3/h (unimpeded air flow)

Packs of	Model No. SK
3	**3349.100**

Property rights:

German patent no. 198 04 906
European patent no. 1 053 662
with validity for ES, FR, GB, IT
Australian patent no. 737 485
US patent no. 6,315,656
Chinese patent no. ZL 988 13378.4



Cover plates

for internal fan mounting panel

For optional design of the air routing.

Packs of	Model No. SK
3	**3349.300**

Enclosure internal fan

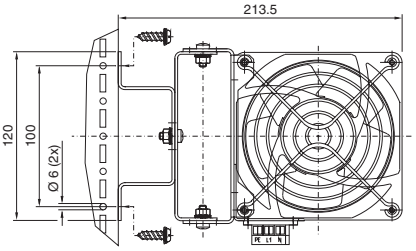
for TS

To prevent hotspots and support the air routing of active enclosure climate control components. Adjustable in two axes. Attached to the TS 8 frame section. Several fans may be cascaded using the quick-release clamping strip.

Supply includes:

Fully wired unit ready for connection with radial fan and lockable swivel device, as well as assembly parts.

Air throughput, unimpeded air flow	Power consumption W	Rated current A	Rated voltage V, Hz	Model No. SK
160 m^3/h	19.0/18.0	0.12/0.11	230, 50/60	**3108.100**
160 m^3/h	19.0/18.0	0.24/0.23	115, 50/60	**3108.115**
160 m^3/h	3.5	0.15	24 V (DC)	**3108.024**



Features

Condensation poses a particular risk for control electronics, especially with outdoor siting, but also indoors. Various different output categories ensure that the correct thermal output is always available. In this way, the total required thermal output can be distributed with complete accuracy within an enclosure.

Simple assembly and perfect control

Fast assembly
This is achieved with a screw or snap fastening on the mounting plate or 35 mm EN 50 022 support rails.

No condensation, and always the right temperature
The heater is controlled as required via a hygrostat or enclosure internal thermostat.

Maximum performance in the outdoor sector

Fully wired unit ready for connection
Compact power with 800 W thermal output.

19″ rack mount
For seamless integration into the 482.6 mm (19″) structure, with 3 thermal components and 3 fan units. This creates circulation, so that condensation is reliably avoided.

Benefits:

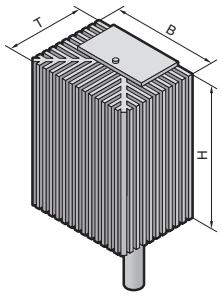
- Continuous thermal output of 10 to 1000 W
- Self-regulating PTC technology
- Quick-assembly system

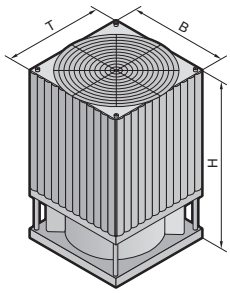
Important:

- For the correct temperature and to avoid condensation, use a thermostat or hygrostat, see page 715.
- The thermal output is increased with fans.
- Heaters should always be installed in an upright position. Leave a distance of 50 mm at the top and bottom to allow convection.
- Heat is distributed evenly in large enclosures by using several low-output heaters.

General remarks and calculation formulae can be found on our website: www.rittal.com

Continuous thermal output 10 – 300 W





B = Width
T = Depth

Supply includes:
Unit ready to install with permanently attached connection cable (0.3 m). SK 3102.000 with fitted fan including terminal strip.

Note:
- Thermostat SK 3110.000 (see accessories) is recommended for precise temperature control in the enclosure.
- In order to prevent condensation on assemblies, hygrostat SK 3118.000 (see accessories) is recommended to regulate heating.
- In larger enclosures, even heat distribution is best achieved by installing several low-output heaters.
- Installation in the enclosure is generally advisable, even when using heat exchangers and cooling units, in order to prevent condensation.

Approvals,
see page 88.

Detailed drawing,
see page 1296.

Performance diagrams,
available on the Internet.

Model No. SK		**3105.000**	**3106.000**	**3115.000**	**3116.000**	**3107.000**	**3107.000 + 3108.000**	**3102.000 (incl. fan)**	**3102.115 (incl. fan)**
Dimensions in mm	W	45	45	64	64	80	80	120	
	H	75	125	110	185	140	178	148	
	D	35	35	45	45	118	118	120	
Rated operating voltage V, Hz		110 – 240 V AC/DC					230 V, 50/60		115 V, 50/60
Continuous thermal output at T_u = 20°C		**10 W**	**20 W**	**30 W**	**50 W**	**130 W**	**200 W[1)]**	**300 W[1)]**	
Pre-fuse T		2.0 A		4.0 A					

Accessories	Packs of		Page
Thermostat	1	3110.000	715
Hygrostat	1	3118.000	715
Temperature indicator	1	3114.000	714
Axial fan	1	**3108.000[2)]**	

[1)] Output with fan.
[2)] Detailed drawing, see page 1297.
Special voltages available on request. We reserve the right to make technical modifications.

Enclosure heater, 800 W

Heater for free positioning inside the enclosure. Simply snap onto top-hat rails and screw fasten to the frame section or punched section with mounting flange. The heater may be operated in 400 W or 800 W output stages:
With protective grille in front of the air inlet and outlet.
Supplied without top-hat rail.

Technical specifications:
Rated operating voltage:
230 V AC 50/60 Hz
Power consumption: 400 W/800 W
Installation: In the enclosure
Dimensions:
Cross-section 82 x 110 mm
Length 150 mm
Rated current of fan: 6 A
Volumetric flow of fan: 35 m^3/h
Connection: Via terminal panel

Packs of	**Model No. CS**
1	**9769.080**

Accessories:

Support rail TS 35/15, see page 1002.
Thermostat, see page 715.

Accessories Page 710 **Configuration software** Page 1155

Accessories for System Climate Control

Features

Finding the perfect climate control solution is now even easier, with matching system accessories. Perfectly coordinated components adapt the climate control components superbly to your specific requirements.

Be it targeted air routing or precise control of the equipment, Rittal has the perfect solution for everything.

Air routing

Air duct system for TopTherm roof-mounted cooling unit and air/water heat exchanger
It is possible to route the cold air directly to specific areas of the enclosure using the air duct system.

Air diverter
For targeted, downward cold air routing in climate controlled enclosures, climate control doors and TopTherm wall-mounted cooling units.

Adaptor
For unhindered front air infeed when using rack-mounted cooling units in enclosures with front doors.

Control/regulation

Enclosure internal thermostat and hygrostat
Constant temperature and humidity to protect sensitive electronics.

Speed control
Temperature-dependent speed control to minimise noise and save energy in part-load operation.

SK Bus system
SK bus system with master/slave function to enable several cooling units to communicate with one another.

Installation/maintenance

Fast assembly
Easy installation with prepared TS roof plates.

Hose-proof hoods
For protection category IP 55 to EN 60 529/09.2000 with fan-and-filter units and outlet filters.

Filter mats
For use in cooling units under exterme conditions.

Air duct system

for TopTherm roof-mounted cooling units

It is possible to route the cold air directly to specific areas of the enclosure using the air duct system. The risk of “short circuits” in the air circulation due to self-ventilated installed devices is therefore eliminated.
The length of the shallow duct is 1500 mm, and it may be cut to any required length.

Material:
Flame-resistant plastic to DIN 4102/B1

Supply includes:
Shallow duct, compensating hose.

Accessories:

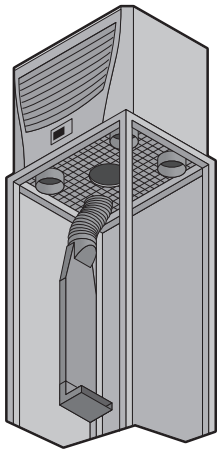
Deflector, 90°,
see page 711.
Stopper,
see page 712.

Also required:

TS support strips for securing the shallow duct in a vertical direction,
see page 997.

For cooling unit	Packs of	Model No. SK Air duct system
SK 3209. . . ./SK 3210. . . ./SK 3273. . . ./SK 3359. . . ./SK 3382. . . ./ SK 3383. . . ./SK 3384. . . ./SK 3385. . . .	1	**3286.870**
SK 3386. . . ./SK 3387. . . .	1	**3286.970**

Note:
Do not direct cold air straight at active components. When using the ducting system, the performance of the cooling unit may be reduced, depending on the application in question.



Deflector, 90°

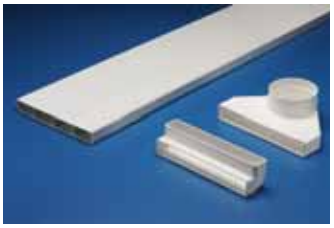
For air duct system

For targeted air deflection at the end of the shallow channel.

Material:
Flame-resistant plastic to DIN 4102/B1

Packs of	Model No. SK
1	**3286.990**

Air routing



Shallow air duct system

for TopTherm roof-mounted cooling units and air/water heat exchangers, to fit TS 8 enclosures from a width of 800 mm.
It is possible to route the cold air directly to specific areas of the enclosure using the air duct system. The risk of "short circuits" in the air circulation due to self-ventilated installed devices is therefore eliminated.
The length of the shallow duct is 1500 mm, and it may be cut to any required length.

Material:
Flame-resistant plastic to DIN 4102/B1

Supply includes:
Shallow duct, adaptor, compensating piece, deflector 90°.

Accessories:

Deflector, 90°,
see page 711.
Stopper,
see page 712.

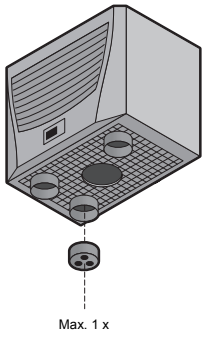
Also required:

Shallow duct extension SK 3286.860 to compensate for the enclosure width and height.
TS support strips for securing the shallow duct in a vertical direction,
see page 997.

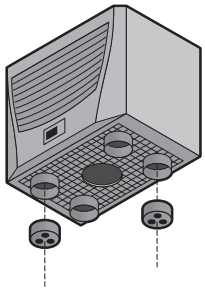
Note:
Do not direct cold air straight at active components. When using the ducting system, the performance of the cooling unit may be reduced, depending on the application in question.

For units	Packs of	Model No. SK Shallow air duct system
SK 3209. . . ./SK 3210. . . ./SK 3273. . . ./SK 3359. . . ./SK 3382. . . ./ SK 3383. . . ./SK 3384. . . ./SK 3385. . . .	1	**3286.850**

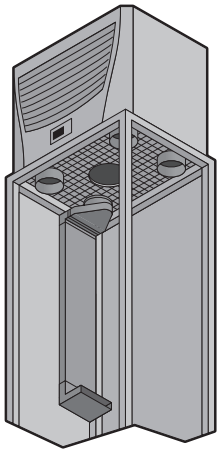
SK 3359. . . .
SK 3382. . . .
SK 3386. . . .
SK 3387. . . .

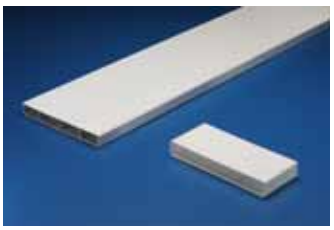


SK 3383. . . .
SK 3384. . . .
SK 3385. . . .



Note:
Max. no. of stoppers per unit.





Shallow duct extension

Extension kit for shallow air duct system SK 3286.850 for width, depth or height length extensions in TS 8 enclosures.

Material:
Flame-resistant plastic to DIN 4102/B1

Supply includes:
1500 mm shallow duct, connection piece.

Packs of	Model No. SK
1	**3286.860**

Cover bungs

for TopTherm roof-mounted cooling units
To cover unneeded cold air outlets in TopTherm roof-mounted cooling units.

Material:
Polyurethane foam

For units	Max. no. of stoppers per unit	Packs of	Model No. SK
SK 3359. . . ./SK 3382. . . .	1	2	**3286.780**
SK 3209. . . ./SK 3210. . . ./SK 3273. . . ./SK 3383. . . ./ SK 3384. . . ./SK 3385. . . .	2	2	**3286.880**
SK 3386. . . ./SK 3387. . . .	1	2	**3286.980**

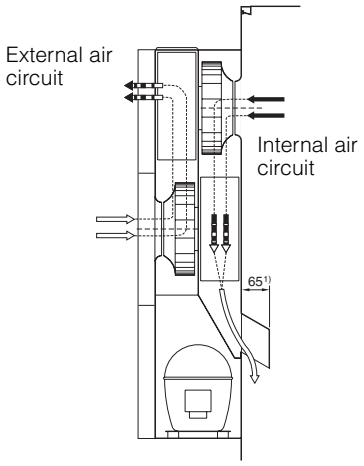
Air routing

Air diverter

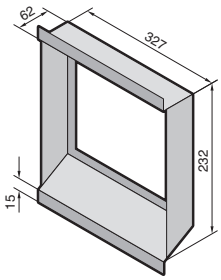
For use in climate controlled enclosures, climate control doors, climate control side panels and TopTherm wall-mounted cooling units.
For targeted air routing of the cold air in a downward direction.
Particularly well-suited for densely-packed electrical components in the lower section of the enclosure.

Material:
Sheet steel

For units	Model No. SK
SK 8607. . . ./SK 8687. . . . SK 3306. . . ./SK 3331. . . .	**3213.300**
SK 3304. . . ./SK 3305. . . .	**3213.310**
SK 3328. . . ./SK 3329. . . .	**3213.320**
SK 3332. . . .	**3213.330**[1)]



[1)] 115 mm for SK 3213.330



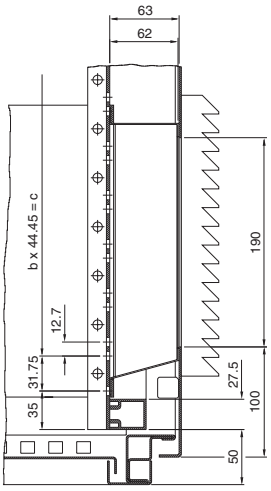
Adaptor

for front air infeed
When using rack-mounted cooling units SK 3278.134/SK 3292.134 in enclosures with front doors (sheet steel or acrylic), this adaptor must be used. It enables ambient air to be extracted unhindered from outside, which is essential for correct functioning of the cooling unit.

Material:
Sheet steel

Supply includes:
Adaptor, sealing gasket, foamed plastic gasket, assembly parts.

Packs of	Model No. SK
1	**3259.000**



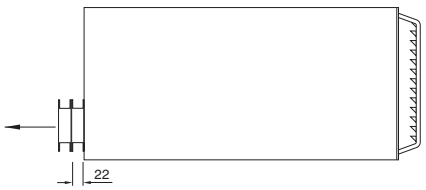
Air duct

for discharge of waste air
For use of rack-mounted cooling units SK 3292.134/SK 3278.134 in enclosures with a depth > 600 mm.
The heated ambient air is blown backwards out of the enclosure through the air duct. The air duct may be extended as required.

Material:
ABS plastic

Supply includes:
Air duct including attachment clamps.

Packs of	Model No. SK
10	**3220.000**



Air duct, may be extended to any length

Control/regulation

Digital enclosure internal temperature display and thermostat

For installing on the enclosure door or wall and in a cooling unit or heat exchanger.

Technical specifications:

- Small dimensions.
- Depth: 100 mm.
- The 3-digit 7-segment display is 13 mm high and clearly legible.
- Can be switched from °C/°F.
- The display can be used in a temperature range from +5°C to +70°C.
- Includes 1500 mm long NTC sensor.
- Two relay outputs as change-over contact and normally open contact (maximum contact load 230 V, 6 A).
- Freely selectable switching difference.
- The freely adjustable setpoint values can be adjusted via the membrane keyboard at the front.
  Setting range: +5°C to +55°C.
- Display and switching accuracy +/– 2 K.
- Mounting cut-out 68 x 33 mm.
- The minimum and maximum recorded temperatures are stored until it is next reset.

Rated operating voltage	Model No. SK
230 V (AC)	**3114.100**
115 V (AC)	**3114.115**[1)]
24 V (DC)	**3114.024**[1)]

[1)] Delivery times available on request.
Special requirements accommodated on request.

Digital enclosure internal temperature display and thermostat

Integrated into a patch panel 1 U.
Including cable attachment for connection cable and label holder.

Rated operating voltage:
230 V (AC)
Special voltages available on request.

Technical specifications:

- Small dimensions.
- Depth: 100 mm.
- The 3-digit 7-segment display is 13 mm high and clearly legible.
- Can be switched from °C/°F.
- The display can be used in a temperature range from +5°C to +70°C.
- Includes 1500 mm long NTC sensor.
- Two relay outputs as change-over contact and normally open contact (maximum contact load 230 V, 6 A).
- Freely selectable switching difference.
- The freely adjustable setpoint values can be adjusted via the membrane keyboard at the front.
  Setting range: +5°C to +55°C.
- Display and switching accuracy +/– 2 K.
- Mounting cut-out 68 x 33 mm.
- The minimum and maximum recorded temperatures are stored until it is next reset.

Supply includes:
Patch panel, temperature display and thermostat, identification strip.

Colour	Model No. DK
RAL 7035	**7109.035**

Enclosure internal thermostat

Especially suitable for controlling fan-and-filter units, heaters and heat exchangers, this thermostat can also be used as a signal generator for monitoring the enclosure internal temperature.

Technical specifications:

- Bi-metal sensor as a temperature-sensitive element with thermal feedback.
- Contact population: Single-pole change-over contact as a quick-break contact.
- Permissible contact load:
  Cat. 5 – 3 (heating)
  AC 10 (4)[1)] A,
  DC = 30 W
  cat 5 – 4 (cooling)
  AC 5 (4)[1)] A,
  DC = 30 W
  ([1)]) = inductive load at cos φ = 0.6
- Setting range: +5°C to +60°C
- Weight: Approx. 105 g
- Dimensions: 71 x 71 x 33.5 mm
- Switching difference: Approx. 1 K ± 0.8 K.

Rated operating voltage	Model No. SK
230/115/60/48/24 V (AC)	3110.000
60/48/24 V (DC)	

- A broad voltage spectrum i. e. just 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 35 mm support rail to EN 50 022, and snap fastening in the TS/ES enclosure section using the supplied adaptor.

Hygrostat

The hygrostat switches on the heater and/or fan when a preset relative humidity in the enclosure is exceeded.
In this way, the relative humidity is raised above the dew point, and condensation on assemblies or electronic components is avoided.

Technical specifications:

- Contact population: Single-pole change-over contact as a quick-break contact.
- Permissible contact load:
  AC ~ 5 (0.2)[1)] A
  DC = max. 20 W
  ([1)]) = inductive load at cos φ = 0.6
- Setting range: 50 – 100 % relative humidity
- Weight: Approx. 100 g
- Dimensions: 71 x 71 x 33.5 mm
- Switching difference: Approx. 4 %

Rated operating voltage	Model No. SK
24 – 230 V (AC/DC)	3118.000

- A broad voltage spectrum i. e. just 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 35 mm support rail to EN 50 022, and snap fastening in the TS/ES enclosure section using the supplied adaptor.

Bottom-mounted adaptor

for enclosure internal thermostat SK 3110.000 and hygrostat SK 3118.000

Bottom-mounted adaptor with mounting option for screwed cable glands, for targeted cable infeed from appropriate equipment such as SK fan-and-filter units and enclosure heaters. In conjunction with screwed cable glands, it is also suitable for use as strain relief.

Packs of	Model No. SK
1	3110.200

Control/regulation

Speed control

Temperature-dependent speed control for Rittal fan-and-filter units and air/air heat exchangers with a rated operating voltage of 230 V AC, for noise reduction and to save energy in part-load operation.

Technical specifications:

- For mounting on a 35 mm support rail DIN EN 50 022
- Dimensions (W x H x D): 94 x 57 x 180 mm
- Rated operating voltage: 230 V (AC)/115 V (AC)
- Setting range: +20°C to +55°C
- Phase cross-over with microcontroller
- Maximum fan output 250 W or 1.2 A at 230 V (AC)
- Maximum fan output 100 W or 1.2 A at 115 V (AC)

Rated operating voltage	Model No. SK
230 V (AC)	**3120.000**
115 V (AC)	**3120.115**[1)]

[1)] Delivery times available on request.

Supply includes:
Speed control, built into a PK enclosure 9512.100, NTC sensor, length 1.80 m.

Mounting adaptor

for speed control

The mounting adaptor enables direct attachment of the speed control SK 3120.000/.115 to the vertical frame sections of network enclosures.

Material:
Sheet steel, zinc-plated, passivated.

Packs of	Model No. DK
1 set	**7526.964**

Supply includes:
Mounting adaptor including assembly parts.

Interface card

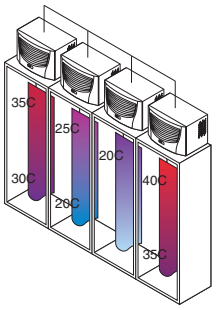
for TopTherm cooling units with Comfort controller

The interface card is an extension for TopTherm cooling units with Comfort controller. In this way it is possible, e. g. to monitor a master/slave combination of up to 10 cooling units. Control is via standardised interfaces: RS-232 (DB9) or RS-485, one PLC interface (DB9). RS-422 (RJ 45 jack) is the connection to the Rittal CMC-TC. Remote monitoring via TCP-IP, graphical interfaces. Connection of additional sensors for access control and monitoring is therefore possible. The extension card is built into a 1 U plastic housing.
A voltage supply of 24 V DC is needed. This may be supplied from the CMC-TC via a wide-range power pack DK 7320.425 (100 to 240 V AC, 50/60 Hz) or externally via a Kycon connector.

Packs of	Model No. SK
1	**3124.200**

Supply includes:
Interface card integrated into a plastic box
W x H x D (mm): 136 x 44 (1 U) x 129.
Serial SUB-D cable 1.5 m.

Note:
Networking and monitoring plan may be found on the relevant product page on the Internet, under “Download”.



SK bus system

The SK bus system facilitates communications between several enclosure cooling units, Rittal TopTherm .500/.510/.540, production date 05/02 or later, via a master/slave construction such as that required e.g. in complex bayed enclosure systems for optimum operating conditions.

Technical specifications:
The master/slave construction facilitates common activation and deactivation via door limit switches, parallel activation and deactivation via a temperature setpoint, and common collective fault signals and temperature logging, thereby eliminating the need for intricate wiring.

For	Model No. SK
TopTherm	**3124.100**
Climate controlled enclosures	**3124.000**

Supply includes:
3 m shielded interface cable, including operating manual on programming the cooling units.

Note:
$n_B = n_K - 1$
n_B: Number of order units (SK bus system)
n_K: Number of cooling units to be linked.

Networking and monitoring plan may be found on the relevant product page on the Internet, under “Download”.

Property rights:
German patent no. 196 15 469

Cable connection kit

for CS Outdoor cooling units
For simple connection of CS cooling units.
All cables preassembled with the corresponding connectors.
Length of cables approx. 2500 mm.

Supply includes:
1 set = 3 cables for AC, door operated switch and alarm connection.

Packs of	Model No. CS
1 set	**9765.105**

Cable connection kit

for CS Outdoor heat exchangers
For simple connection of CS heat exchangers.
All cables preassembled with the corresponding connectors.
Length of cables approx. 2500 mm.

Design	Model No. CS
3 cables for AC/DC and alarm connection	**9765.110**
2 cables for AC/DC and alarm connection	**9765.115**

Test adaptor

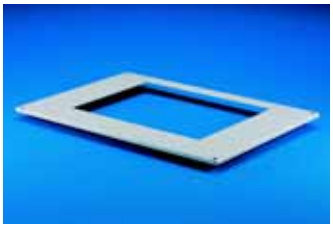
for CS Outdoor climate control equipment
The 9-pole sub-D interface allows testing of all CS climate control equipment. Alternatively supports automatic or manual test procedures.

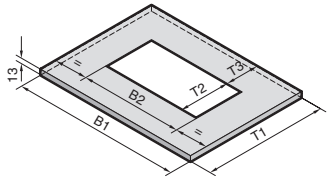
Supply includes:
1 set = Test adaptor including 2 m connection cable.

Note:
Not suitable for CS 9776.XXX.

Packs of	Model No. CS
1 set	**9765.050**

General





B = Width
T = Depth

Roof plates TS

For mounting:
- TopTherm roof-mounted cooling units
- TopTherm roof-mounted fan
- Vent attachment TS

The cut-outs in the roof plate are arranged in such a way that the TopTherm roof-mounted cooling units are positioned centrally on the enclosure.

Material:
Sheet steel

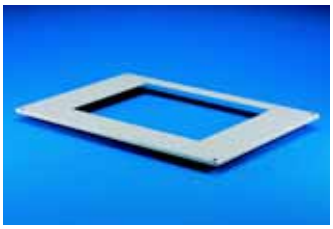
Supply includes:
Assembly parts.

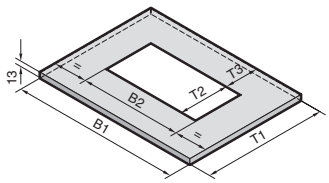
Colour:
RAL 7035

For enclosures W x D mm	Suitable for mounting TopTherm	Model No. TS
600 x 600	SK 3359. . . . SK 3382. . . . SK 3149.4 . . SK 3149.8 . .	**8801.300**[1]
800 x 600		**8801.320**
600 x 600	SK 3273.5. . SK 3383. . . . SK 3384. . . . SK 3385. . . . SK 3209. . . . SK 3220. . . . TS 8801.380	**8801.310**[1]
800 x 600		**8801.330**
1200 x 600		**8801.350**
800 x 800		**8801.920**
800 x 600		**8801.340**[2]
1200 x 600		**8801.360**

[1] When mounting the cooling units, there may be a collision with the eyebolts of the enclosure; for this reason, roof fastening screws are supplied loose with the roof plates.
[2] Attachment is from the inside using metal brackets and retaining clamps.

For mounting TopTherm	B1	B2	T1	T2	T3	Model No. TS
SK 3382. . . ./SK 3359. . . .	567.5	475	567.5	260	129.3	**8801.300**
	767.5	475	567.5	260	129.3	**8801.320**
SK 3209. . . ./SK 3383. . . ./SK 3210. . . ./ SK 3384. . . ./SK 3273. . . ./SK 3385. . . .	567.5	490	567.5	390	61.3	**8801.310**
	767.5	490	567.5	390	61.3	**8801.330**
	1167.5	490	567.5	390	61.3	**8801.350**
	767.5	490	767.5	390	161.3	**8801.920**
SK 3386. . . ./SK 3387. . . .	767.5	692	567.5	392	57.8	**8801.340**
	1167.5	692	567.5	392	57.8	**8801.360**





B = Width
T = Depth

Roof plates DK-TS

For mounting:
- TopTherm roof-mounted cooling units
- TopTherm air/water heat exchangers
- TopTherm roof-mounted fans
- Vent attachment TS

The cut-outs in the roof plate are arranged in such a way that the TopTherm roof-mounted cooling units are positioned centrally on the enclosure.

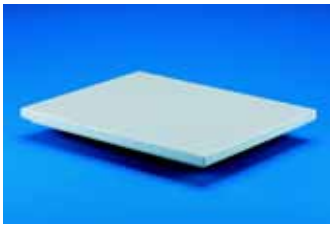
Material:
Sheet steel

Colour:
RAL 7035

For enclosures W x D mm	Suitable for mounting TopTherm	Model No. TS
600 x 900	SK 3209. . . . SK 3210. . . . SK 3272.5 . . SK 3383. . . . SK 3384. . . . SK 3385. . . .	**8801.410**
600 x 1000		**8801.420**
800 x 900		**8801.430**
800 x 1000		**8801.440**

For mounting TopTherm	B1 mm	B2 mm	T1 mm	T2 mm	T3 mm	Model No. TS
SK 3209. . . . SK 3210. . . . SK 3272.5 . . SK 3383. . . . SK 3384. . . . SK 3385. . . .	567.5	490	867.5	390	211.3	**8801.410**
	767.5	490	967.5	390	261.3	**8801.420**
	567.5	490	867.5	390	211.3	**8801.430**
	767.5	490	967.5	390	261.3	**8801.440**

General



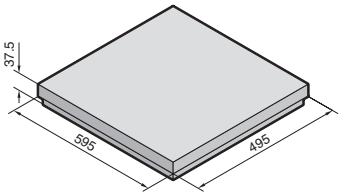
Vent attachment TS

For passive ventilation with labyrinthine air flow routing, to match the roofs for TopTherm roof-mounted cooling units.

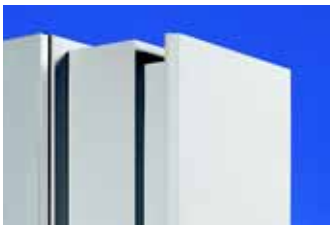
Colour:
RAL 7035

Protection category:
IP 43

Supply includes:
Assembly parts.



For roof plates with cut-out	Model No. TS
490 x 390 mm	**8801.380**



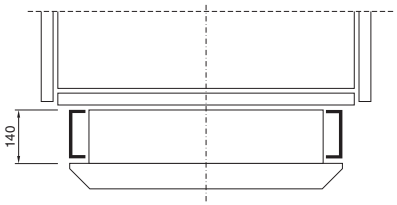
Trim frame

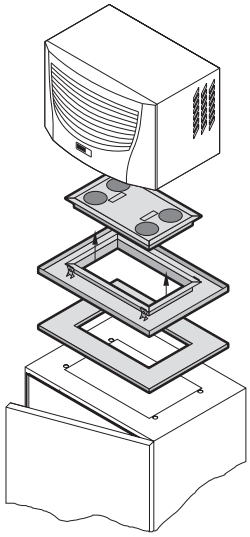
for slimline cooling units
Slimline cooling units can be internally or externally mounted on an enclosure door or wall. The trim frame presents a closed front for the cooling unit.

Material:
Sheet steel

Colour:
RAL 7035

For cooling unit	Model No. SK
SK 3366. . . . SK 3377. . . .	**3377.000**





Quick-change frame

for TopTherm roof-mounted cooling units
The quick-change frame is more than just an alternate frame. Together with the seal, the lower part of the frame is screw-fastened to the enclosure, making it possible to attach or remove the plug-in cooling unit to/from the top part of the quick-change frame. In case of servicing, this means minimal assembly times and hence minimal downtime. The quick-change frame offers effective protection against the ingress of oil into the enclosure in oily atmospheres, thanks to its integral drainage trough.

Material:
Sheet steel

Colour:
RAL 7035

Supply includes:
Quick-change frame, seal, quick-release fasteners.

For TopTherm cooling unit	Model No. SK
SK 3359. . . ./SK 3382. . . .	**3286.700**
SK 3209. . . ./SK 3210. . . . SK 3383. . . . SK 3384. . . . SK 3385. . . .	**3286.800**
SK 3386. . . . SK 3387. . . .	**3286.900**

Property rights:
German patent no. 41 10 323
French patent no. 2 675 317
GB patent no. 2 254 735

General

Electronic condensate evaporator

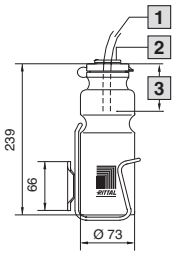
For external mounting on enclosures.
For use with all enclosure cooling units and air/water heat exchangers.
Evaporation performance:
[1] 2.4 l/d
[2] 4.2 l/d

Colour:
RAL 7035

Supply includes:
Electronic condensate evaporator, ready to connect.

Rated operating voltage	Model No. SK	
	for SK 3302/ SK 3303	for 400 mm wide cooling units
230 V, 50/60 Hz	**3301.560**[1]	**3301.570**[2]
115 V, 50/60 Hz	**3301.580**[1]	**3301.590**[2]

Detailed drawing,
see page 1297.



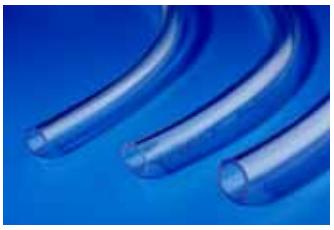
Condensate collecting bottle

For mounting on the enclosure.
For use with all enclosure cooling units and air/water heat exchangers.
Safety overflow at the side.
Capacity approximately 0.75 l.

1 Condensate discharge tube
2 Membrane grommet
3 Max. 70 mm

Packs of	Model No. SK
1	**3301.600**

Supply includes:
Condensate collecting bottle, bottle holder including assembly parts.



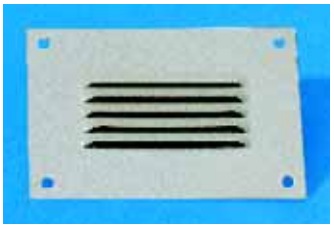
Condensate hose

For removing and forwarding condensate.
For connecting to enclosure cooling units.

Material:
PVC, transparent

Supply includes:
10 m hose.

For devices	Material thickness Ø	Model No. SK
SK 3302. . . ./SK 320.	8 x 1.5 mm	**3301.608**
SK 3303. . . ./SK 3361. . . .	10 x 1.5 mm	**3301.610**
SK 3273. . . ./SK 3304. . . ./ SK 3305. . . ./SK 3328. . . ./ SK 3329. . . ./SK 3332. . . ./ SK 3359. . . ./SK 3366. . . ./ SK 3377. . . ./SK 3382. . . ./ SK 3383. . . ./SK 3384. . . ./ SK 3385. . . ./SK 3386. . . ./ SK 3387. . . ./	12 x 2 mm	**3301.612**

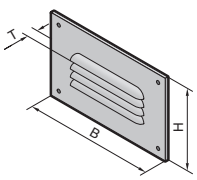


Integrated louvres

For ventilation by convection; easily retro-fitted using 4 screws.

Material:
Sheet steel

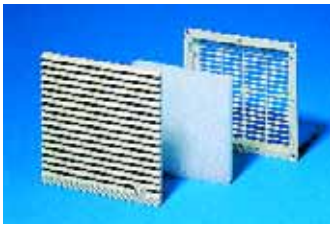
Colour:
RAL 7035



W (B) mm	H mm	D (T) mm	Packs of	Model No. SK
160	110	8	4	**2541.235**
210	100	8	4	**2542.235**
330	110	8	4	**2543.235**

To order in textured RAL 7032 please add extension .200 to the Model No., and for a primed version please add extension .300. Delivery times available on request.

Detailed drawing,
see page 1297.



Outlet filter

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

Material:
ABS,
material resistance to UL 94-V0.

Colour:
RAL 7035

Supply includes:
Outlet filter including filter mat.

Dimensions in mm	Model No. SK
116.5 x 22	**3321.207**
148.5 x 24.5	**3322.207**
204 x 30	**3323.207**
255 x 30	**3325.207**
323 x 30	**3326.207**

For RAL 7032, use order extension .200.

Note:
EMC version,
see page 694.

Accessories:

Spare filter mats,
see page 725.
Fine filter mats,
see page 725.

Hose-proof hoods

for fan-and-filter units/outlet filters
When the hose-proof hood is mounted above the fan-and-filter unit and outlet filter in conjunction with a fine filter mat, a protection category of IP 56 to EN 60 529/09.2000 is achieved.

Material:
Stainless steel

Protection category:
In conjunction with the fan-and-filter units/outlet filters, NEMA 3R + 12 is met.

For	Dimensions in mm	Model No. SK
SK 3321. . . .	150 x 260 x 40	**3321.800**[1)]
SK 3322. . . .	176 x 270 x 55	**3322.800**
SK 3323. . . .	233 x 410 x 55	**3323.800**
SK 3324. . . . SK 3325. . . .	282 x 500 x 85	**3324.800**
SK 3326. . . . SK 3327. . . .	350 x 560 x 110	**3326.800**

[1)] Delivery times available on request.

Front outlet grille 2 U

for centrifugal fans
This front outlet grille is required if a 482.6 mm (19″) cross-flow blower (SK 3144.000/ SK 3145.000) is used in the lower section of the electronic enclosure and the hot air is to be expelled to the outside from the upper section of the enclosure.
The design of the grille matches that of the intake grille in the cross-flow blower.
These grilles can also be used as simple inflow and outflow grilles with natural convection.

Packs of	Model No. SK
1	**3176.000**

Accessories:

Filter mat,
see page 723.

General

Filter holder

for roof ventilation
The use of a filter mat is required in order to increase the protection category of the roof vent (SK 3148.007).
Protection category IP 44 to EN 60 529/09.2000 is achieved.

Material:
Sheet steel

Supply includes:
Filter holder including filter mat.

W x H x D mm	Model No. SK
340 x 244 x 15	**3175.000**

Accessories:

Spare filter mat,
see page 725.

Overflow valve

Pressostat for use in the water cycle between the recooling system and the air/water heat exchanger. It prevents an increase in pump pressure in the recooling system against the closed magnetic valve of the air/water heat exchanger outside of the cooling cycle.

Material:
Brass

Design	Packs of	Model No. SK
1/2″_619_E bypass valve	1	**3301.900**
3/4″_619_E bypass valve	1	**3301.910**
1″_619_E bypass valve	1	**3301.920**

Flow regulator valve

For use with air/water heat exchangers, especially if more than one heat exchanger (n > 1) is used in the water cooling circuit. The correctly set valve then secures the same quantity of cooling medium. The valve is used for hydraulic balancing.

Material:
Brass

Design	Packs of	Model No. SK
3/4″ x 1/2″ for volumetric flow control	1	**3301.930**
3/4″ x 3/4″ for volumetric flow control	1	**3301.940**

Additives for recooling systems

Apart from the recooling systems for oil and emulsion, all other recooling systems are only suitable for the cooling of water or a water/glycol mixture. When filling the systems for the first time, water from the existing supply line is generally suitable, although care should be taken to ensure a consistent water quality.

However, as satisfactory results are only rarely achieved without water treatment, additives should always be added to the cooling water, irrespective of the installation site. As well as protecting against frost, these also serve to impair bacterial growth and achieve optimum corrosion protection.

Rifrost	Antifreeze/water mixture	Container	Model No. SK
Outdoor	1 : 2	10 l	**3301.950**
		25 l	**3301.955**
		200 l	**3301.957**[1)]
Standard	1 : 4	10 l	**3301.960**
		25 l	**3301.965**
		200 l	**3301.967**[1)]

[1)] Delivery times available on request.

Supply includes:
10 l canister, 25 l canister or 200 l barrel.

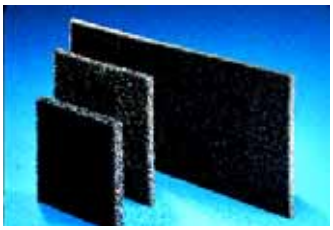
Filter technology for cooling units

Filter mats for centrifugal fans

Made of chopped-fibre mat with a progressive structure. Temperature-resistant to 100°C, self-extinguishing category F1 to DIN 53 438.
Dust-laden air side: Open structure.
Clean air end: Closed structure.
Reliable filtering of virtually all types of dust from a particle size of 10 µm.

Material:
Chemical fibre

For centrifugal fans/front outlet grilles 2 U	W x H x D mm	Packs of	Model No. SK
SK 3144.000/SK 3145.000/SK 3176.000	425 x 85 x 8	5	**3177.000**



Filter mats for cooling units

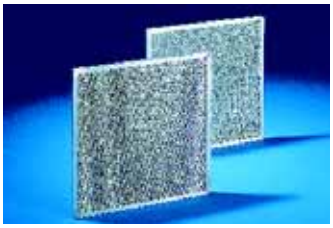
Rittal cooling units are low-maintenance and are supplied without filter mats. Filter mats may be used for extreme conditions.

Material:
Open-celled polyurethane foamed plastic with excellent physical and mechanical properties. Temperature-resistant from –40°C to +80°C. Thickness: 10 mm.

For TopTherm cooling units	W x H x D mm	Packs of	Model No. SK
SK 3302.300/SK 3302.310	190 x 95 x 10	3	**3286.110**
SK 3302. . . ./SK 3303. . . ./SK 3361. . . .	265 x 200 x 10	3	**3286.300**
SK 3304. . . ./SK 3305. . . ./SK 3328. . . ./SK 3329. . . ./ SK 3332. . . ./SK 3366. . . .	344 x 268 x 10	3	**3286.400**
SK 3273. . . ./SK 3382. . . ./SK 3383. . . ./SK 3384. . . ./ SK 3385. . . ./SK 3359. . . .	530 x 255 x 10	3	**3286.500**
SK 3386. . . ./SK 3387. . . .	720 x 300 x 10	3	**3286.600**
SK 3377. . . .	205 x 210 x 10	3	**3253.010**

For discontinued cooling units	W x H x D mm	Packs of	Model No. SK
SK 3296. . . ./SK 3272.100/SK 3290. . . ./SK 3280.100/ SK 3299. . . ./SK 3261. . . .	539 x 332 x 10	3	**3286.100**
SK 3265.100/SK 3266.100	270 x 332 x 10	3	**3267.100**
SK 3256. . . .	395 x 300 x 10	3	**3254.000**
SK 3293. . . ./SK 3281.100/SK 3298. . . ./SK 3279.100/ SK 3260. . . ./SK 3269. . . ./SK 3262.100/SK 3393. . . ./ SK 3381.100/SK 3391. . . .	334 x 313 x 10	3	**3294.100**
SK 3255. . . ./SK 3395. . . .	350 x 245 x 10	3	**3253.000**
SK 3394. . . .	315 x 200 x 10	3	**3285.000**
SK 3292.134/SK 3278.134	325 x 250 x 10	3	**3286.000**

Filter technology for cooling units



Metal filter for cooling units

Particularly when cooling units are used in dusty and damp environments, it is advisable to use washable metal filters.
If air or steam condenses on the metal surfaces, any particles that may be present will adhere to the metal and are easily washed out with water or grease-dissolving detergents.

Material:
Aluminium
Thickness: 10 mm

For TopTherm cooling units	W x H x D mm	Packs of	Model No. SK
SK 3302.300/SK 3302.310	190 x 95 x 10	1	**3286.120**
SK 3302.100/SK 3302.110/SK 3303. . . ./SK 3361. . . .	265 x 200 x 10	1	**3286.310**
SK 3304. . . ./SK 3305. . . ./SK 3328. . . ./SK 3329. . . ./ SK 3332. . . ./SK 3366. . . .	344 x 288 x 10	1	**3286.410**
SK 3273. . . ./SK 3382. . . ./SK 3383. . . ./SK 3384. . . ./ SK 3385. . . ./SK 3359. . . .	530 x 255 x 10	1	**3286.510**
SK 3386. . . ./SK 3387. . . .	720 x 300 x 10	1	**3286.610**
SK 3377. . . .	225 x 200 x 10	1	**3253.220**

For discontinued cooling units	W x H x D mm	Packs of	Model No. SK
SK 3296. . . ./SK 3272.100/SK 3290. . . ./SK 3280.100	520 x 290 x 10	1	**3286.210**
SK 3299. . . ./SK 3261. . . .	520 x 315 x 10	1	**3286.200**
SK 3265.100/SK 3266.100	265 x 320 x 10	1	**3267.200**
SK 3256. . . .	315 x 365 x 10	1	**3254.200**
SK 3293. . . ./SK 3281.100/SK 3298. . . ./SK 3279.100/ SK 3260. . . ./SK 3269. . . ./SK 3262.100/SK 3393. . . ./ SK 3381.100/SK 3391. . . .	300 x 328 x 10	1	**3294.200**
SK 3255. . . ./SK 3395. . . .	348 x 210 x 10	1	**3253.200**
SK 3394. . . .	375 x 415 x 10	1	**3285.200**

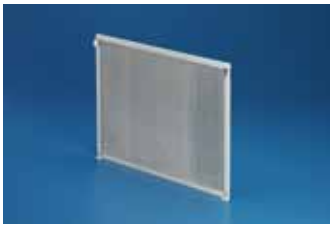
For TopTherm climate control door/section door	W x H x D mm	Packs of	Model No. SK
SK 3300.040/SK 3300.050/SK 3300.060/SK 3300.070/ SK 3300.080/SK 3300.090/SK 3300.110/SK 3300.120	425 x 78 x 10	1	**3284.210**

For climate control doors	W x H x D mm	Packs of	Model No. SK
SK 3306. . . ./SK 3307. . . ./SK 3309. . . ./SK 3310. . . .	424 x 100 x 10	1	**3284.200**
SK 3308. . . .	624 x 100 x 10	1	**3288.200**

For climate control side panel	W x H x D mm	Packs of	Model No. SK
SK 3331. . . .	380 x 150 x 10	1	**3289.200**

For Mini recooling systems	W x H x D mm	Packs of	Model No. SK
SK 3318.600/SK 3318.610/SK 3319.600/SK 3319.610	530 x 255 x 10	1	**3286.510**
SK 3320.600/SK 3334.600	500 x 558 x 8	1	**3286.520**
SK 3360. . . .	344 x 268 x 10	1	**3286.410**

Filter technology for cooling units



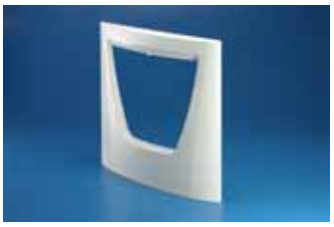
Lint screen

Especially for the use of cooling units and air/air heat exchangers where there is a high proportion of lint in the ambient air.

Material:
Stainless steel mesh

For devices	Packs of	Model No. SK
SK 3304. . . . /SK 3305. . . . / SK 3328. . . . /SK 3329. . . . / SK 3338. . . .	1	**3329.904**

Delivery times available on request.

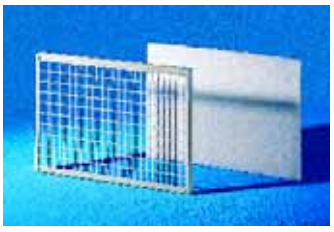


Louvred grille for lint screen

Material:
ABS

For	Packs of	Model No. SK
SK 3329.904	1	**3329.903**

Delivery times available on request.



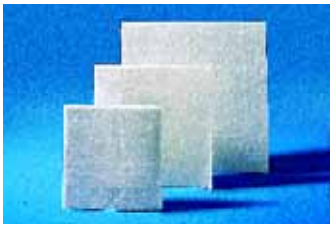
Spare filter mats for fan-and-filter units

Made of chopped-fibre mat with a progressive structure.
Temperature-resistant to 100°C, self-extinguishing category F1 to DIN 53 438.
Dust-laden air side: Open structure.
Clean air end: Closed structure.
Reliable filtering of virtually all types of dust from a particle size of 10 µm.

Material:
Chemical fibre

For fan-and-filter units	W x H x D mm	Packs of	Model No. SK
SK 3321. . . .	89 x 89 x 10	5	**3321.700**
SK 3322. . . .	120 x 120 x 12	5	**3322.700**
SK 3323. . . .	173 x 173 x 17	5	**3171.100**
SK 3324. . . /SK 3325. . . .	221 x 221 x 17	5	**3172.100**
SK 3326. . . .	289 x 289 x 17	5	**3173.100**
SK 3327. . . .	286 x 286 x 10	5	**3327.700**

For filter holders	W x H x D mm	Packs of	Model No. SK
SK 3175.000	338 x 242 x 20	3	**3174.000**



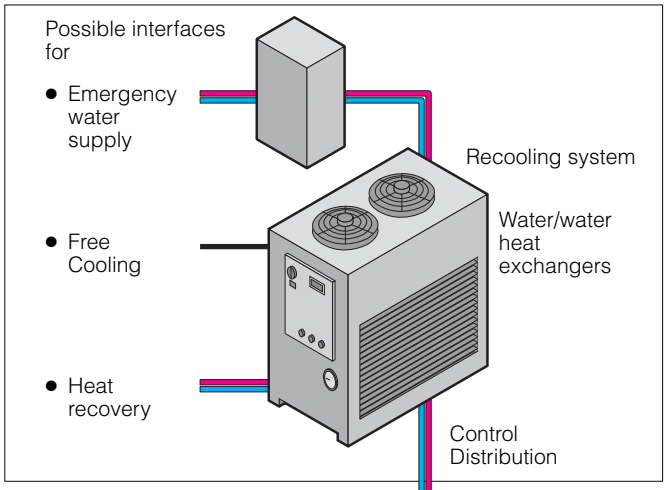
Fine filter mats for fan-and-filter units

Made of chopped-fibre mat with a progressive structure. Temperature-resistant to 100°C, self-extinguishing category F1 to DIN 53 438.
Dust-laden air side: Open structure.
Clean air end: Closed structure.
Reliable filtering of virtually all types of dust from a particle size of 10 µm.

Material:
Chemical fibre

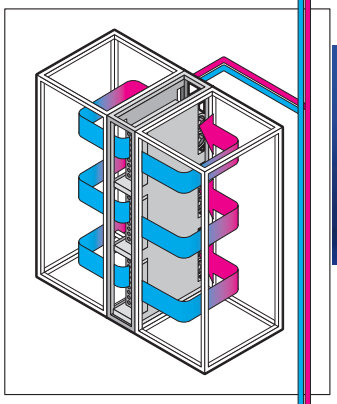
For fan-and-filter units/outlet filters	W x H x D mm	Packs of	Model No. SK
SK 3323. . . .	173 x 173 x 12	5	**3181.100**
SK 3324. . . /SK 3325. . . .	221 x 221 x 12	5	**3182.100**
SK 3326. . . /SK 3327. . . .	289 x 289 x 12	5	**3183.100**

Applications



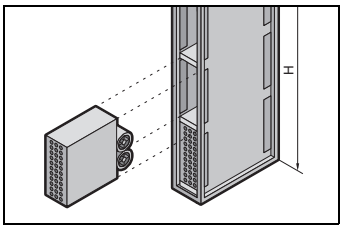
Modular climate control concepts – to your specific requirements!

Rittal solves the problem of climate control for high heat losses per rack with liquid cooling components. Extremely high heat loads are dissipated from the enclosures, IT and server racks via air/water heat exchangers. Additionally, data centres may be extended in a temperature-neutral way.



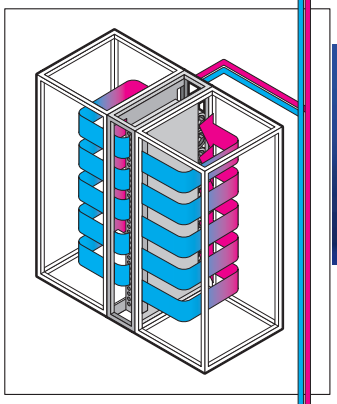
LCP Standard

Bayable with TS 8 server racks
As the height and depth are identical, it may be bayed either in the middle of an enclosure suite or at the end, for added assembly and service friendliness.



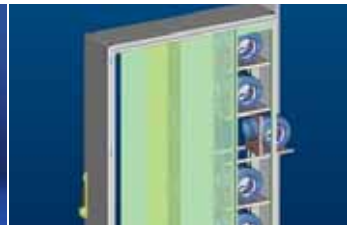
Up to 20 kW useful cooling output
The useful cooling output is achieved with a modular configuration (1 – 3 modules) or with the complete LCP Plus systems. Active condensate management supports inlet temperatures from +6°C to +20°C.

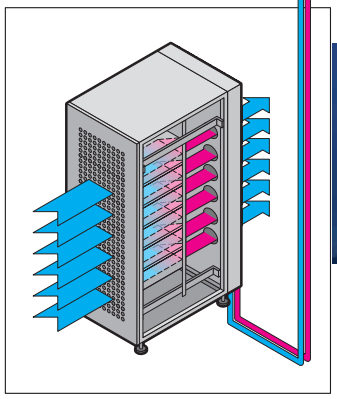
Safe insertion, simple assembly
The separation of cooling and rack prevents water from penetrating the server rack. A recooling system supplies the required cooling fluid.



LCP Plus

Up to 40 kW useful cooling output
Useful cooling outputs of 30 kW (rack height 2000 mm) or 40 kW (rack height 2400 mm) are achieved with 6 or 8 high-performance fans, which may be exchanged without the need for tools. Overall, the LCP Plus has been optimised for use in data centres. Even with the enclosure doors open, e. g. during servicing work on servers, climate control is guaranteed. Ideal water supply: Rittal recooling systems.





LCP Extend

Installation while operational
Air/water heat exchanger (12 kW) to support climate control of the room.

Water connection variants
Water connection either at the bottom or top. Connection to the existing cooling circuit (optionally via water/water heat exchanger) or to recooling systems.

Rittal Liquid Cooling Package, useful cooling output 10 kW – 40 kW

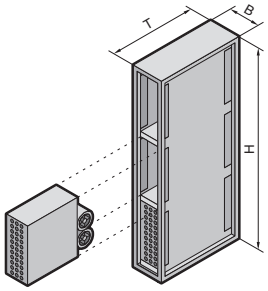
LCP Standard

Air/water heat exchanger, bayable with server racks based on TS 8 (H x D 2000 x 1000/1200 mm). The useful cooling output of max. 20 kW can be achieved by installing additional modules.

The separation of cooling and rack prevents water from penetrating the server rack, and makes it easy to assemble and very service-friendly.

LCPs are easy to handle (max. 2 m) and may be transported in lifts and through doors. The low weight means a minimal load area.

Technical specifications:
- Up to 20 kW useful cooling output
- Max. air volume 3000 m³/h
- TÜV GS, UL/CUL, DIN 3168



Width (B) 300 mm
Height (H) 2000 mm
Depth (T) 1000/1200 mm

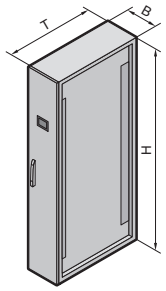
LCP Plus

Air/water heat exchanger, bayable with server racks based on TS 8 (H x D 2000 x 1200 mm). Complete unit with 30 kW useful cooling output.

The separation of cooling and rack prevents water from penetrating the server rack, and makes it easy to assemble and very service-friendly.

LCPs are easy to handle (max. 2 m) and may be transported in lifts and through doors. The low weight means a minimal load area.

Technical specifications:
- Up to 30 kW useful cooling output
- Max. air volume 4800 m³/h
- TÜV GS, UL/CUL, DIN 3168



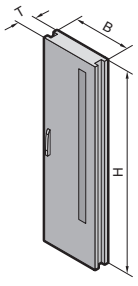
Width (B) 300 mm
Height (H) 2000/2400 mm
Depth (T) 1200 mm

LCP Extend

Air/water heat exchanger for retrofitting to racks while operational.

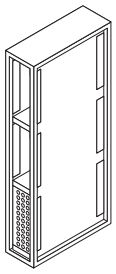
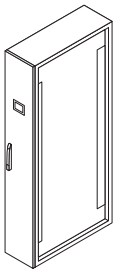
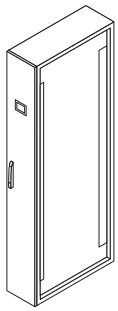
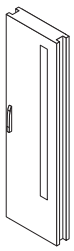
The stand-alone unit replaces the rear door (for other brands on request).

Technical specifications:
- Up to 12 kW useful cooling output
- Max. air volume 3000 m³/h
- Water connection either at the bottom or top



Width (B) 520 mm
Height (H) 1910 mm
Depth (T) 160 mm

Rittal Liquid Cooling Package, useful cooling output 10 kW – 40 kW

Model No. SK	**3301.230**[1]	**3301.420**	**3301.480**	**Available on request**	**3301.490**[1]
Description	LCP Standard		LCP Plus	LCP Plus	LCP Extend
Rated operating voltage	230, 50/60		230 V, 1~, 50/60 Hz 400 V, 3~, 50/60 Hz	230 V, 1~, 50/60 Hz 400 V, 3~, 50/60 Hz	230 V, 1~, 50/60 Hz 400 V, 3~, 50/60 Hz
Dimensions in mm W H D	300 2000 1000	300 2000 1200	300 2000 1200	300 2400 1200	520 1910 160
Usable U	42		42	51	42
Useful cooling output	**Up to 20 kW**		**Up to 30 kW**	**Up to 40 kW**	**12 kW**
Rated current	3.8 A/4.4 A		9.3 A/10.4 A	Technical specifications available on request.	2.4 A/3.0 A
Pre-fuse	10 A/10 A		16 A/16 A		6 A/6 A
Cooling medium	Water (for specifications see Internet)				Water (for specifications see Internet)
Water inlet temperature	+6°C to +20°C				+15°C
Permissible operating pressure p. max.	5 bar		5 bar		5 bar
Protection category to EN 60 529/09.2000	IP 30				IP 20
Duty cycle	100 %				100 %
Electrical connection	Connection cable		Connection cable		Connection cable
Water connection	$^3/_4$″ external thread		1″ external thread		$^3/_4$″ external thread
Weight	Max. 160 kg		230 kg		130 kg
Colour	RAL 7035				RAL 7035
Air throughput of fans	3000 m³/h		4800 m³/h		3000 m³/h
Temperature control	4-way fan control				Fan control
	Electronically controlled magnetic valve		2-way stop valve		
Additional module					
Useful cooling output max. 6.6 kW	3301.250		–	–	–

Special voltages and sizes available on request. Technical modifications reserved.
Rack heights of 2200 mm are achieved with an optional add-on cover.
[1] Also available with 115 V, Model No. **3301.210.**

To ensure proper use of LCP Standard and LCP Plus, the racks being cooled should be sealed against the ingress of ambient air wherever possible:

Description	Dimensions in mm		Packs of	**Model No.**
Side panel, screw-fastened	H x D	2000 x 1000	2	**8100.235**
Glazed door	W x H	600 x 2000	1	**8610.600**
		800 x 2000	1	**8610.800**
Sheet steel door, solid	W x H	600 x 2000	1	**7824.205**
		800 x 2000	1	**7824.207**
Divided partitioning plate for retrospective sealing in the base area	W x D	600 x 1000	1	**7825.300**
		800 x 1000	1	**7825.302**
Divided roof plate for cable entry	W x D	600 x 1000	1	**7826.605**[1]
		800 x 1000	1	**7826.805**[1]

[1] Retrospective installation is not possible.

Other accessories:
Recooling system,
see page 656.

Quick-release fastener,
see page 730.

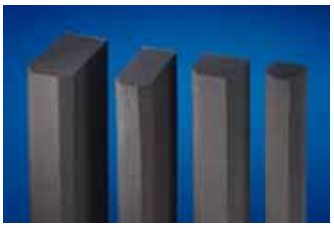
Base/plinth,
see page 892.

Service,
available on request.

Water/water heat exchanger,
available on request.

Accessories Page 710 **Recooling systems** From page 656 **Server enclosures** From page 774

Accessories for Rittal Liquid Cooling Package



Vertical shielding

To block the airflow on the left and right of the 482.6 mm (19″) level.
Length: 1900 mm, self-adhesive on one side.

Material:
Cellular PU foam, flame-inhibiting to UL 94 (HF1)

For sealing between	For enclosure width mm	Model No. SK
Side panel and 482.6 mm (19″) level	600	**3301.380**
	800	**3301.390**
LCP and 482.6 mm (19″) level	600	**3301.370**
	800	**3301.320**

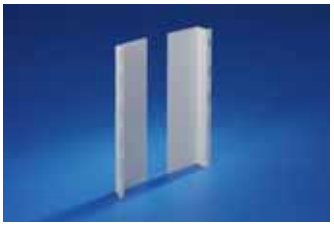
Packs of 1

Horizontal shielding

Allows horizontal shielding of the airflow with a partially configured 482.6 mm (19″) rack.

Material:
Sheet steel, spray-finished in RAL 7035

For enclosure width mm	Packs of	Model No. SK
600	1	**3301.330**
800	1	**3301.340**



Covers

For sealing air inlet and outlet openings of the LCP that are not required.

Material:
Sheet steel, spray-finished in RAL 7035

Packs of	Model No. SK
2	**3301.310**

Vent valve

For effective cooling of individual LCP modules (SK 3301.250). With quick-release system for simple installation in the water inlet of the LCP, including stop valve.

Packs of	Model No. SK
1	**3301.400**

Accessories for Rittal Liquid Cooling Package

Connection hose

1 m long, flexible connection hose, may be shortened, including union nuts on both sides for connecting the LCP to existing pipe work.

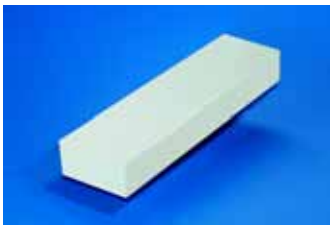
For LCP	Thread	Model No. SK
SK 3301.230/.420	3/4″	**3301.350**
SK 3301.480	1″	**3301.351**

Packs of 2

Quick-release fastener

The shut-off quick-release fasteners on both sides facilitate easy disconnection of the LCP to the existing pipe work (3/4″ external thread) and connection hose SK 3301.350.

Packs of	Model No. SK
1 connector 1 coupling	**3301.360**



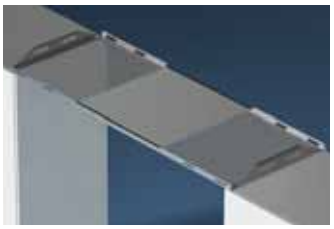
Add-on cover

For height compensation with 2200 mm high racks in conjunction with the LCP (H = 2000 mm).

Material:
Sheet steel, spray-finished in RAL 7035

For LCP	Model No. SK
SK 3301.210 SK 3301.230	**3301.221**
SK 3301.420 SK 3301.480	**3301.421**

Delivery times available on request.



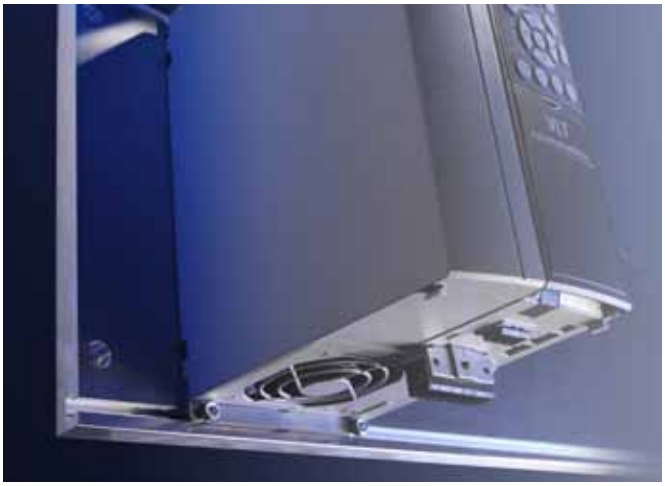
Aisle cover

for server racks

This aisle cover is used to cover the “cold aisle” between two server racks in a data centre. This serves to increase the effectiveness of the hot aisle/cold aisle cooling method. The expelled cold air is no longer able to escape upwards into the room, and is prevented from mixing with existing warm air. In this way, the cold airflow is available to the active 482.6 mm (19″) installed equipment without restriction. The aisle cover is extendible for aisle widths up to a maximum of 1.80 m.

For server racks	Packs of	Model No. SK
600 mm wide	1	**3301.430**
800 mm wide	1	**3301.440**

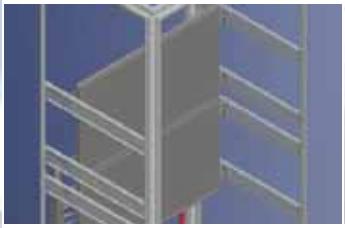
Features



Power electronic components can be cooled particularly effectively and directly using the liquid cooled DCP mounting plate. Heat losses are cleverly dissipated from the enclosure or housing without compromising the high enclosure protection category in any way. Furthermore, liquid cooling is both quiet and 1000 times more efficient than heat dissipation via air.

The Rittal DCP Cold Plate has received type-tested certification from the TÜV inspection authority and is approved for pressures up to 10 bar.

User benefits

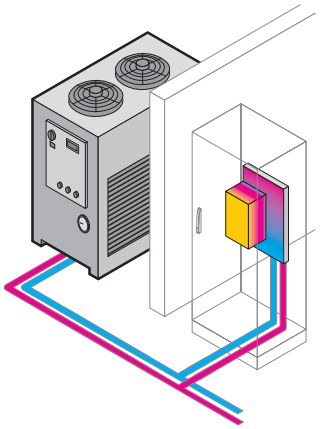


Flexible installation
Height and depth-variable mounting positions thanks to compatibility with the TS 8 system punchings.

Secure construction
Fluid distributor with fast-action vent valve.

Benefits:

- High surface quality (Ra = 1.2 µm) to reduce thermal resistance
- No vibrations from compressors and fans
- Ideal for precision machine tools
- No noise generation
- No top-mounted parts on the enclosure
- Enclosure may be installed in the machine base and in niches
- The protection category of the enclosure is preserved
- Mounting surface on both sides may be used as a contact surface for heat dissipation
- Space-saving configuration of electronic components in the enclosure



Application of the complete system:
DCP with recooling system with optional, ambient temperature control to avoid condensation.

Fastening system

Attachment directly in the T-slot
Direct and fast mounting using sliding nuts for components with suitable dimensions. Direct earthing or equipotential bonding points are provided on the Cold Plate.

Attachment with variable clamping system
Permitting fast mechanical installation without drilling, independently of the original attachment points, on components of a wide variety of models and makes.

Attachment with tapped holes
Power electronics can be mounted at any position over the whole surface by drilling tapped holes up to max. 12 mm in depth.

Cold Plate

Front

Rear

Cold Plate without T-slot

Liquid-cooled partial mounting plate with drilling surface
Whole surface can be used by the customer for own tapped holes (blind holes) to a maximum drilling depth of 12 mm.

Reverse:
Pressed-in copper or stainless steel tubes, dependent on the application, in closed recooling systems or existing (open) water circuit. Cooling water connection: G 1/4″.

Supply includes:
Mounting accessories for system integration into TS 8.

Accessories:

Accessories for fluid distribution connection, see page 733.

TS punched section with mounting flange 17 x 73 mm for the outer mounting level, see page 1023.

Recooling systems for closed cooling circuits, see from page 656.

Further technical information is available at www.rittal.com/dcp.

For installation in		Dimensions in mm	Material	Output[1]	Packs of	Model No. DCP
Enclosure width mm	Enclosure depth (side) mm					
600	600	499 x 399 x 25	CU	2500 W	1	**8616.610**
600	600	499 x 399 x 25	VA	2500 W	1	**8616.630**
800	800	699 x 399 x 25	CU	3000 W	1	**8616.810**
800	800	699 x 399 x 25	VA	3000 W	1	**8616.830**
1000	1000	899 x 399 x 25	CU	5000 W	1	**8616.010**
1000	1000	899 x 399 x 25	VA	5000 W	1	**8616.030**
1200	–	1099 x 399 x 25	CU	6000 W	1	**8616.210**
1200	–	1099 x 399 x 25	VA	6000 W	1	**8616.230**

[1] With 25°C fluid inlet temperature, T_u = 40°C and DCP surface temperature ≈ 40°C

Front

Rear

Cold Plate with T-slot

Liquid-cooled partial mounting plate for fastening with a variable clamping system
Fast mounting of converters with system fastening and additional possibility for tapped holes (blind holes) to a maximum drilling depth of 8 mm. Average T-channel spacing: 378 mm.

Rear:
Pressed-in copper or stainless steel tubes, dependent on the application, in closed recooling systems or existing (open) water infrastructure. Cooling water connection: G 1/4″.

Supply includes:
Mounting accessories for system integration into TS 8.

Accessories:

Accessories for fluid distribution connection, see page 733.

TS punched section with mounting flange 17 x 73 mm for the outer mounting level, see page 1023.

Recooling systems for closed cooling circuits, see from page 656.

Further technical information is available at www.rittal.com/dcp.

For installation in		Dimensions in mm	Material	Output[1]	Packs of	Model No. DCP
Enclosure width mm	Enclosure depth (side) mm					
600	600	499 x 399 x 20	CU	2500 W	1	**8616.600**
600	600	499 x 399 x 20	VA	2500 W	1	**8616.620**
800	800	699 x 399 x 20	CU	3000 W	1	**8616.800**
800	800	699 x 399 x 20	VA	3000 W	1	**8616.820**
1000	1000	899 x 399 x 20	CU	5000 W	1	**8616.000**
1000	1000	899 x 399 x 20	VA	5000 W	1	**8616.020**
1200	–	1099 x 399 x 20	CU	6000 W	1	**8616.200**
1200	–	1099 x 399 x 20	VA	6000 W	1	**8616.220**

[1] With 25°C fluid inlet temperature, T_u = 40°C and DCP surface temperature ≈ 40°C

Cold Plate/accessories

Cold Plate for frequency converters

Manufacturer-specific

Siemens SINAMICS S120 series
For the design of SINAMICS drive modules in the S120 series, please contact your local Siemens agent.

Danfoss frequency converters VLT® Automation Drive FC300 of enclosure sizes
A2 (0.37 – 4 kW/380 – 500 V)
A3 (5.5 – 7.5 kW/380 – 500 V)
with a channel spacing of 257 mm may be used.

For installation in		Dimensions in mm	Material	Packs of	Model No. DCP
Enclosure width mm	Enclosure depth mm				
Siemens SINAMICS S120					
600	600	499 x 449 x 20	CU	1	**8616.640**
600	600	499 x 449 x 20	VA	1	**8616.641**
800	800	699 x 449 x 20	CU	1	**8616.840**
800	800	699 x 449 x 20	VA	1	**8616.841**
Danfoss VLT® Automation Drive FC300					
600	600	499 x 299 x 20	CU	1	**8616.650**
600	600	499 x 299 x 20	VA	1	**8616.651**
800	800	699 x 299 x 20	CU	1	**8616.850**
800	800	699 x 299 x 20	VA	1	**8616.851**

Special sizes available on request. Reverse: Pressed-in copper or stainless steel tubes, dependent on the application, in closed recooling systems or existing (open) water infrastructure. Cooling water connection: G $^{1}/_{4}$″.

System attachment

for frequency converters
For mounting frequency converters on the Cold Plate.

Supply includes:
Wire clamp system, T-slot blocks.

For the attachment of frequency converters	Packs of	Model No. DCP
with all-round clamping surface	1	**8616.700**
with side clamping surfaces	1	**8616.710**
with clamping surfaces top and bottom	1	**8616.720**

Fluid distribution manifold

in stainless steel
For the connection of up to 4 Cold Plate units.

Supply includes:
2 fluid distributors (inlet and return),
screw plugs G1/4″, G3/8″,
connector sleeves G1/2″,
including seals.

Packs of	Model No. DCP
1 set	**8616.750**

Accessories:

Flex hose, see page 733,
quick-action vent valve, see page 734,
temperature sensor, see page 734.

Direct fluid connection

For connection of the Cold Plate through the rear or side panel of the enclosure.

Supply includes:
2 connector sleeves G1/2″,
2 mini stop valves G1/2″,
2 reducers G1/2″ – G1/4″,
including seals.

Packs of	Model No. DCP
1 set	**8616.751**

Accessories:

Flex hose, see page 733,
double-nipple coupling, see page 734.

Flexible hose

For connection of the Cold Plate to a fluid distribution manifold or direct fluid connection.

Supply includes:
2 flexible hoses G1/4″ with stainless steel braid, including seals.

Packs of	Length mm	Model No. DCP
1 set	500	**8616.760**
1 set	1000	**8616.761**

Accessories:

Elbow coupling, see page 734

Accessories

Quick-action vent valve

To vent the complete Direct Cooling Package system.
Easily mounted on the fluid distributor.

Supply includes:
Quick-action vent valve G3/8″,
including seal.

Packs of	Model No. DCP
1	**8616.762**

Elbow coupling

For horizontal or vertical connection of the Cold Plate.

Supply includes:
4 L-form 90° fittings G1/4″,
seals.

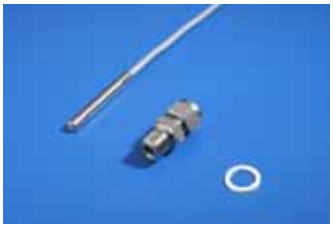
Packs of	Model No. DCP
1 set	**8616.763**

Double-nipple coupling

For connection of the flexible hose to the fluid distribution manifold.

Supply includes:
4 double-nipple fittings G1/4″,
seals.

Packs of	Model No. DCP
1 set	**8616.764**



Temperature sensor TF25

For monitoring of the inlet and return temperatures in the fluid distributor.

Supply includes:
Temperature sensor TF25 (NTC, 10 kΩ),
stainless steel cable gland G1/4″,
including seal.

Packs of	Model No. DCP
1	**8616.765**

Other versions available on request.

Splash protection, optional

Splash protection comprising side panels, front panel and base drain tray can be supplied as an option.

Rittal DCP CoolingUnit

The CoolingUnit is available in two variants. As a stand-alone unit with press-fitted cooler tubes, or as an add-on in conjunction with a Rittal Cold Plate. The optional housing for the cooler ensures even more efficient air routing and thus reliable cooling of the air inside the enclosure.

Function principle:
The warm air inside the enclosure is drawn up by a powerful radial fan and passed through the cooler.

The unit can be operated either indirectly, i. e. mounted on a Rittal Cold Plate, or as a fully autonomous system with its own cooling water circulation. The latter supports direct mounting on the mounting plate in the immediate vicinity of major heat loss sources. In this variant, additional copper or stainless steel tubes are press-fitted into the cooler.

Convincing arguments:
- Direct cooling of power electronics on a Rittal Cold Plate and lowering of the enclosure internal temperature.
- Decentralised cooling of high-performance power electronics
- No change to the existing protection category of the enclosure

DCP CoolingUnit – AddOn

Power	Dimensions W x H x D mm	Packs of	Model No. DCP
400 W	252 x 572 x 205	1	**8616.500**
800 W	252 x 572 x 205[1)]	1	**8616.510**

[1)] Space required behind the DCP = 110 mm
Delivery times available on request.

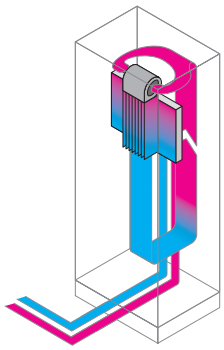
DCP CoolingUnit – Standalone

Power	Dimensions W x H x D mm	Packs of	Model No. DCP
500 W	252 x 572 x 205	1	**8616.550**
900 W	252 x 572 x 205	1	**8616.560**

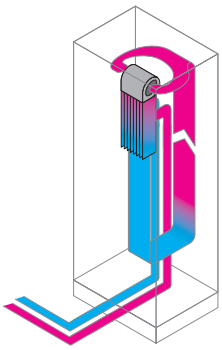
CoolingUnit as stand-alone with its own fluid connection (2 x G1/4″).
Delivery times available on request.

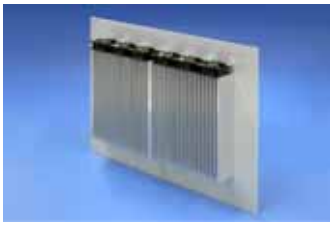
Further technical information is available at www.rittal.com/dcp.

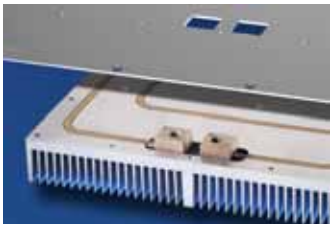
Add-on



Stand-alone







Rittal DCP PanelCooling

This integrated PanelCooling solution was developed by Rittal for optimum, space-saving cooling of operating housings. Heat losses of approx. 150 – 350 W can be dissipated without the need for external add-ons. The high protection category of the enclosure is retained, thanks to the fluid connection at the rear of the panel.

Function principle:
The fan unit with six individual fans ensures optimum air circulation at the cooler for efficient dissipation of the heat losses arising in the housing. The unit can be connected either to an existing coolant circuit or else to an external recooling system.

Convincing arguments:
- High performance with minimal space requirements
- No reduction of the original protection category
- No external add-ons necessary

Operating housing cooling e. g. for the Comfort Panel and for special enclosures such as stainless steel enclosures for the food and consumables industry.
Cooling units may be ordered for heat losses of up to 350 W on a project-specific basis.

Power	Dimensions W x H x D mm	Packs of	Model No. DCP
150 W	300 x 250 x 50	1	**8616.300**
350 W	400 x 300 x 60	1	**8616.310**

Delivery times available on request.

Further technical information is available at www.rittal.com/dcp.