



## **The Future of Climate Control**



**Rittal the Authority for Comprehensive Climate Control**



# Focus On The Future

## Rittal climate control guarantees progress

Many companies talk about the future, Rittal is shaping it. We have chosen a forward-thinking approach for climate control development and environmental protection is the focus of our research.

Rittal has been the trendsetter in the climate control market for many years.

Since 1992 **Pro Ozone** has become the global term for environmentally friendly cooling technology. At one time the only environmental issue was to replace the coolants R22 and R12, that were destroying the ozone layer. Now we are dealing with the greenhouse effect, a result of the ozone layer

destruction. Rittal is searching for ways to replace the coolant R134a and reduce emissions.

During the operation of an air conditioner only 3% of the CO<sub>2</sub>-creation in the environment is the result of the coolant, the other 97% is the result of the electric power consumption. All Rittal climate control products have been **consistently** designed for **energy-efficiency**.

Our newest feature, **Rittal Liquid Cooling** offers an innovative approach to enclosure cooling with effective and progressive climate control options.



### History of successes for Rittal innovations

**1983** Beginning of Rittal's enclosure climate control production. The focus of our development and design at the time: Reducing strain on the environment with energy efficient and highly effective equipment.

**1988** First enclosure air conditioner equipped with microcontroller.

**1992** First air conditioner without the coolant R22/R12, Pro Ozone.

**1994** First Design-air conditioner line, with updated microcontroller.

**2002** Rittal TopTherm, the new generation of air conditioners and the beginning of Rittal's liquid cooling concept.

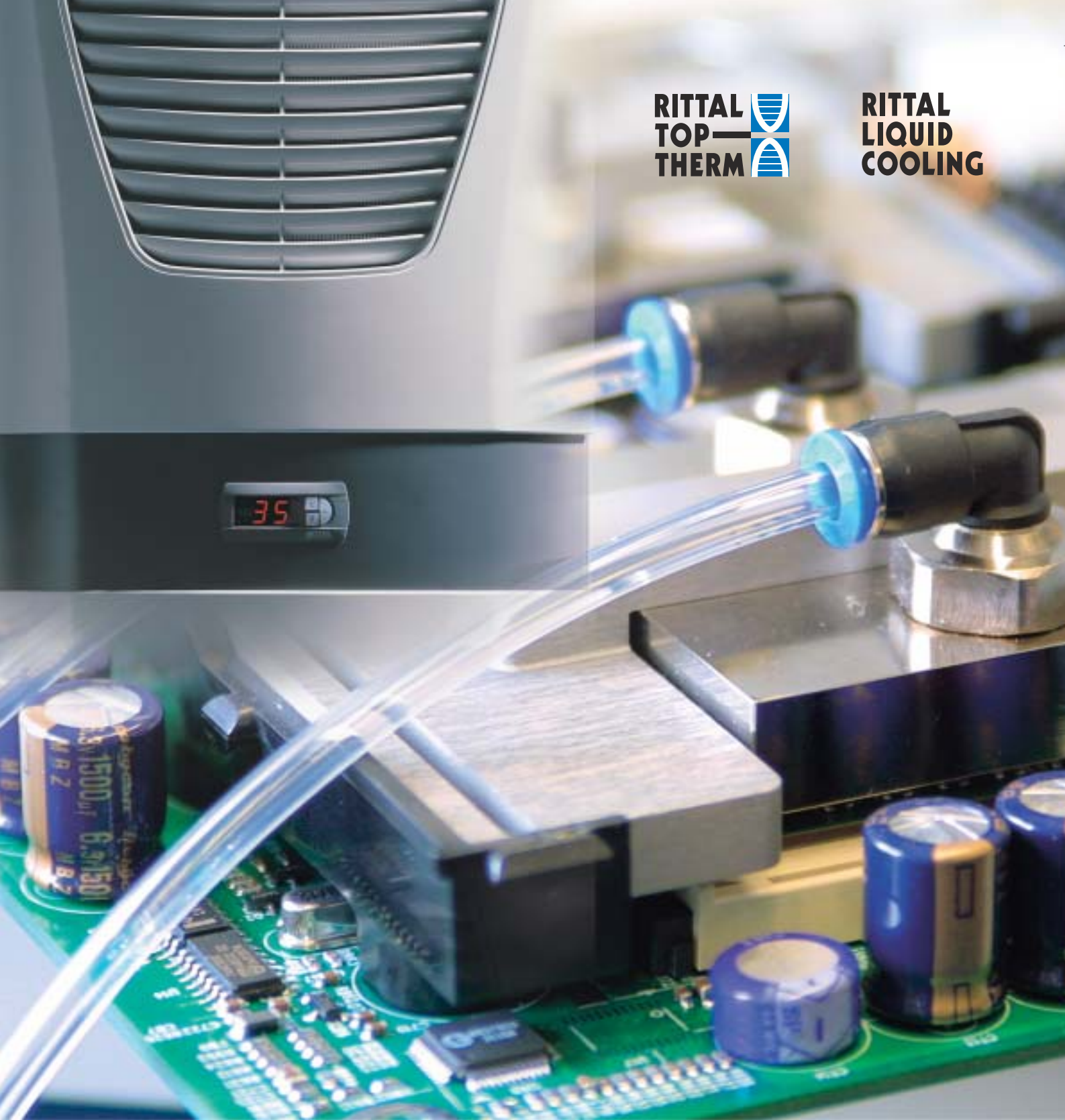
Rittal's CMC remote monitoring system provides surveillance of air conditioners and chiller systems via the Internet.

### Experience – Research – Development

Constant communication with our global customers, combined with Rittal's vast experience with climate control research and development, create **many options for your specific application**.

Rittal develops customized solutions, with the aid of its own accredited laboratories, computer supported flow models (CFD) and infrared-thermography.





#### **Better selection, better quality, better value**

Rittal has **expanded** the **successful TopTherm program** with the addition of several **new air conditioners** and **heat exchangers**. Our system wide cross-platform concept makes a variety of cost effective solutions possible. It facilitates special solutions for all sorts of individual needs and applications.

#### **New liquid cooling concepts**

New performance standards for CPUs, network components, hard drives and other hardware have been set. **Liquid can absorb and dissipate a thousand times more heat in comparison to air** by volume, therefore Rittal has established new dimensions in its development of cooling technology.

**Rittal looks to the future.**



# Perfect Climate, Stable Performance

## Customized climate control

Rittal's climate control offers perfect solutions for forward-thinking and comprehensive process control. Perfectly coordinated **enclosure systems, climate control technology and remote monitoring systems** provide state-of-the-art security and availability for your production facility.

Rittal is able to develop customized climate control solutions for virtually any application.

Identical installation cutouts for a variety of air conditioners, heat exchangers and fans, make the installation of climate control simple and **adaptable to your individual cooling needs.**

Rittal climate control –

We insist on top quality, great value, environmentally friendly and highly effective equipment.



**Rittal TopTherm air conditioners, in a performance class by itself.**

**Rittal TopTherm air conditioners are built to the highest standards. Functional design, high degree of effectiveness, targeted cold air routing, and centralized monitoring make TopTherm air conditioners top performers.**

- Technology: Ideal combination of comfort, safety and flexibility.
- Cooling performance: Generated and distributed effectively.
- Design: Form follows function, aesthetically pleasing and an eye-catching design.
- Service: Layout, project planning, and thermal analysis.



### Chiller systems multitask in cooling technology

The efficiency of chillers is ideal for applications where high cooling requirements exist. Chillers apply a comprehensive approach to process, machine and fluid cooling. Chillers are able to dissipate large heat loads with air/water heat exchangers and cooling elements from enclosures and components.

- All inclusive, service: Project planning, prototypes, quoting, installation and start-up and service agreement.
- Cost advantage: Globally available off-the-shelf components make economizing easy.





**Air/air heat exchangers** use the cooler ambient air to effectively dissipate heat from the enclosure by using hermetically sealed air circuits (using a counter current, or cross-flow concept). Ambient air and dust are unable to ingress the enclosure.

**Air/water heat exchangers** cool the enclosure interior by integration into an existing cooling water cycle or connection to a chiller. This makes efficient dissipation of high heat loads under the most extreme conditions possible.

**Filter fans** with a very low profile design, low noise and high output. Prerequisite: cool, relatively clean ambient air.

**19" Climate control:** Rack-mounted air conditioners, rack-mounted fans and blowers. Cooling is most effective when installed directly below the electronic equipment.

**Heaters** prevent the formation of condensation. This is especially valuable for outside locations or unheated rooms.

**Climate control accessories** make achieving the perfect climate solution even easier.



# Climate Control

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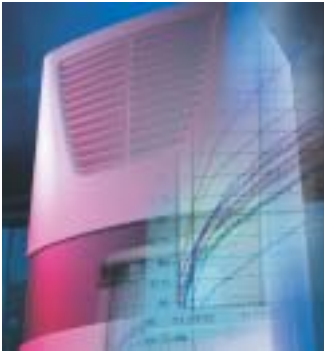
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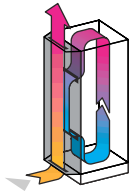
**Rittal's climate control creates the desired ambient conditions for virtually any application, including sensitive electronics.** A wide range of air conditioners, chillers, heat exchangers, filter fans and enclosure heaters protect against adverse physical and thermal conditions. Rittal also offers a wide range of system accessories.

## Enhanced operational reliability and a longer service life for electronics

- Climate controlled enclosure systems
- Air conditioners
- Chillers
- Heat exchangers
- Filter fan units
- Roof-mounted fans
- Rack-mounted climate control
- Enclosure heaters
- Cooling

Detailed information can be found on pages 22 – 118 or on our website: [www.rittal-corp.com](http://www.rittal-corp.com)

The current status of certifications may be found on our website: [www.rittal-corp.com](http://www.rittal-corp.com)



## 4.1 Climate Controlled Enclosures

Useful cooling capacity W (BTU)	Dimensions H x W x D mm (inches)	Voltage V, Hz	Part No. SK	Certifications				Page
				UL	CUL	DIN	GS	
1250 (4260)	1800 x 600 x 600 (70.9 x 23.6 x 23.6)	230, 50/60	8687.100	■	■		■	24
	2000 x 600 x 600 (78.7 x 23.6 x 23.6)		8607.100	■	■		■	24
	1800 x 600 x 600 (70.9 x 23.6 x 23.6)	400, 2~, 50/60	8687.840	■	■		■	24
	2000 x 600 x 600 (78.7 x 23.6 x 23.6)		8607.840	■	■		■	24
1510 (5150)	1800 x 800 x 600 (70.9 x 31.5 x 23.6)	230, 50/60	8887.150	■	■	■	■	24
	2000 x 800 x 600 (78.7 x 31.5 x 23.6)		8807.100	■	■	■	■	24
	1800 x 800 x 600 (70.9 x 31.5 x 23.6)	400, 2~, 50/60	8887.140	■	■	■	■	24
	2000 x 800 x 600 (78.7 x 31.5 x 23.6)		8807.140	■	■	■	■	24
2010 (6860)	1800 x 1200 x 600 (70.9 x 47.2 x 23.6)	230, 50/60	8287.170	■	■			25
			8807.180	■	■			25
	2000 x 1200 x 600 (78.7 x 47.2 x 23.6)		8207.170	■	■			25
			8207.180	■	■			25
2550 (8700)	1800 x 1200 x 600 (70.9 x 47.2 x 23.6)	400, 3~, 50/60	8807.260					25
	2000 x 1200 x 600 (78.7 x 47.2 x 23.6)		8807.250					25

Delivery times available on request.

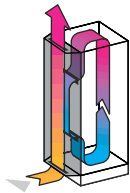
## 4.1 Climate Control Doors

For single-door TS8 modular enclosures with thermostat

Useful cooling capacity W (BTU)	For modular enclosure dimensions H x W mm (inches)	Voltage V, Hz	Part No. SK	Certifications				Page
				UL	CUL	DIN	GS	
1250 (4260)	1800 x 600 (70.9 x 23.6)	230, 50/60	3306.880 <sup>1)</sup>	■	■		■	26
	2000 x 600 (78.7 x 23.6)		3306.800 <sup>1)</sup>	■	■		■	26
	1800 x 600 (70.9 x 23.6)	400, 2~, 50/60	3306.884 <sup>1)</sup>	■	■		■	26
	2000 x 600 (78.7 x 23.6)		3306.840 <sup>1)</sup>	■	■		■	26
1680 (5740)	1800 x 600 (70.9 x 23.6)	230, 50/60	3307.880 <sup>1)</sup>					26
	2000 x 600 (78.7 x 23.6)		3307.800 <sup>1)</sup>					26
	1800 x 600 (70.9 x 23.6)	400, 2~, 50/60	3307.890 <sup>1)</sup>					26
	2000 x 600 (78.7 x 23.6)		3307.840					26
1510 (5150)	1800 x 800 (70.9 x 31.5)	230, 50/60	3308.880 <sup>1)</sup>	■	■	■	■	27
	2000 x 800 (78.7 x 31.5)		3308.800 <sup>1)</sup>	■	■	■	■	27
	1800 x 800 (70.9 x 31.5)	400, 2~, 50/60	3308.884 <sup>1)</sup>	■	■	■	■	27
	2000 x 800 (78.7 x 31.5)		3308.840 <sup>1)</sup>	■	■	■	■	27
2010 (6860)	1800 x 600 (70.9 x 23.6)	230, 50/60	3309.880 <sup>1)</sup>	■	■			28
	2000 x 600 (78.7 x 23.6)		3309.800	■	■			28
	1800 x 600 (70.9 x 23.6)	400, 2~, 50/60	3309.884 <sup>1)</sup>	■	■			28
	2000 x 600 (78.7 x 23.6)		3309.840 <sup>1)</sup>	■	■			28
2550 (8700)	1800 x 600 (70.9 x 23.6)	400, 3~, 50/60	3310.880 <sup>1)</sup>					28
	2000 x 600 (78.7 x 23.6)		3310.800					28

<sup>1)</sup> Delivery times available on request.



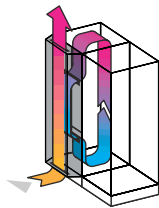
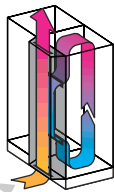


## 4.1 Climate Control Doors

For single-door TS8 modular enclosures with microcontroller

Useful cooling capacity W (BTU)	For modular enclosure dimensions H x W mm (inches)	Voltage V, Hz	Part No. SK	Certifications				Page
				UL	CUL	DIN	GS	
1250 (4260)	1800 x 600 (70.9 x 23.6)	230, 50/60	3306.580 <sup>1)</sup>	■	■			26
	2000 x 600 (78.7 x 23.6)	230, 50/60	3306.500 <sup>1)</sup>	■	■			26
	1800 x 600 (70.9 x 23.6)	400, 2~, 50/60	3306.590 <sup>1)</sup>	■	■			26
	2000 x 600 (78.7 x 23.6)	400, 2~, 50/60	3306.540 <sup>1)</sup>	■	■			26
1680 (5740)	1800 x 600 (70.9 x 23.6)	230, 50/60	3307.580 <sup>1)</sup>					26
	2000 x 600 (78.7 x 23.6)	230, 50/60	3307.500 <sup>1)</sup>					26
	1800 x 600 (70.9 x 23.6)	400, 2~, 50/60	3307.590 <sup>1)</sup>					26
	2000 x 600 (78.7 x 23.6)	400, 2~, 50/60	3307.540 <sup>1)</sup>					26
1510 (5150)	1800 x 800 (70.9 x 31.5)	230, 50/60	3308.580 <sup>1)</sup>	■	■			27
	2000 x 800 (78.7 x 31.5)	230, 50/60	3308.500	■	■			27
	1800 x 800 (70.9 x 31.5)	400, 2~, 50/60	3308.590 <sup>1)</sup>	■	■			27
	2000 x 800 (78.7 x 31.5)	400, 2~, 50/60	3308.540	■	■			27
2010 (6860)	1800 x 600 (70.9 x 23.6)	230, 50/60	3309.580 <sup>1)</sup>	■	■			28
	2000 x 600 (78.7 x 23.6)	230, 50/60	3309.500	■	■			28
	1800 x 600 (70.9 x 23.6)	400, 2~, 50/60	3309.590 <sup>1)</sup>					28
	2000 x 600 (78.7 x 23.6)	400, 2~, 50/60	3309.540					28
2550 (8700)	1800 x 600 (70.9 x 23.6)	400, 3~, 50/60	3310.580 <sup>1)</sup>					28
	2000 x 600 (78.7 x 23.6)	400, 3~, 50/60	3310.500 <sup>1)</sup>					28

<sup>1)</sup> Delivery times available on request.

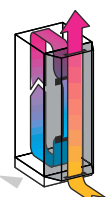


For two-door TS8 modular enclosures

Useful cooling capacity W (BTU)	For modular enclosure dimensions H x W mm (inches)	Voltage V, Hz	Device position	Part No. SK		Certifications				Page
				With thermostat	With micro-controller	UL	CUL	DIN	GS	
1250 (4260)	1800 x 1200 (70.9 x 47.2)	230, 50/60	right	3306.250	3306.550	■	■			29
		400, 2~, 50/60		3306.450	3306.650	■	■			29
	2000 x 1200 (78.7 x 47.2)	230, 50/60		3306.210	3306.510	■	■			29
		400, 2~, 50/60		3306.410	3306.610	■	■			29
	1800 x 1200 (70.9 x 47.2)	230, 50/60	left	3306.270	3306.570	■	■			29
		400, 2~, 50/60		3306.470	3306.670	■	■			29
	2000 x 1200 (78.7 x 47.2)	230, 50/60		3306.230	3306.530	■	■			29
		400, 2~, 50/60		3306.430	3306.630	■	■			29
1680 (5740)	1800 x 1200 (70.9 x 47.2)	230, 50/60	right	3307.250	3307.550					29
		400, 2~, 50/60		3307.450	3307.650					29
	2000 x 1200 (78.7 x 47.2)	230, 50/60		3307.210	3307.510					29
		400, 2~, 50/60		3307.410	3307.610					29
	1800 x 1200 (70.9 x 47.2)	230, 50/60	left	3307.270	3307.570					29
		400, 2~, 50/60		3307.470	3307.670					29
	2000 x 1200 (78.7 x 47.2)	230, 50/60		3307.230	3307.530					29
		400, 2~, 50/60		3307.430	3307.630					29
2010 (6860)	1800 x 1200 (70.9 x 47.2)	230, 50/60	right	3309.170	3309.570	■	■			30
		400, 2~, 50/60		3309.470	3309.670					30
	2000 x 1200 (78.7 x 47.2)	230, 50/60		3309.120	3309.520	■	■			30
		400, 2~, 50/60		3309.420	3309.620					30
	1800 x 1200 (70.9 x 47.2)	230, 50/60	left	3309.210	3309.510	■	■			30
		400, 2~, 50/60		3309.410	3309.610					30
	2000 x 1200 (78.7 x 47.2)	230, 50/60		3309.140	3309.530	■	■			30
		400, 2~, 50/60		3309.440	3309.640					30
2550 (8700)	1800 x 1200 (70.9 x 47.2)	400, 3~, 50/60	right	3310.250	3310.650					30
	2000 x 1200 (78.7 x 47.2)			3310.230	3310.630					30
	1800 x 1200 (70.9 x 47.2)	400, 3~, 50/60	left	3310.150	3310.550					30
	2000 x 1200 (78.7 x 47.2)			3310.130	3310.530					30

Delivery times available on request.



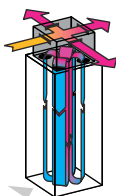


## 4.1 Climate Control Sidewalls

For TS8 modular enclosures

Useful cooling capacity W (BTU)	For modular enclosure dimensions H x W mm (inches)	Voltage V, Hz	Part No. SK	Page
1200 (4100)	1800 x 600 (70.9 x 23.6)	230, 50/60	<b>3331.116</b>	31
	2000 x 600 (78.7 x 23.6)		<b>3331.316</b>	31
	1800 x 600 (70.9 x 23.6)	400, 2~, 50/60	<b>3331.140<sup>1)</sup></b>	31
	2000 x 600 (78.7 x 23.6)		<b>3331.340<sup>1)</sup></b>	31
1450 (4950)	1800 x 600 (70.9 x 23.6)	230, 50/60	<b>3331.216<sup>1)</sup></b>	31
	2000 x 600 (78.7 x 23.6)		<b>3331.416</b>	31
	1800 x 600 (70.9 x 23.6)	400, 2~, 50/60	<b>3331.240<sup>1)</sup></b>	31
	2000 x 600 (78.7 x 23.6)		<b>3331.440<sup>1)</sup></b>	31

<sup>1)</sup> Delivery times available on request.

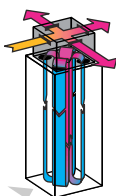


## 4.1 TopTherm Roof-Mounted Air Conditioners

Useful cooling capacity W (BTU)	Dimensions H x W x D mm (inches)	Voltage V, Hz	Part No. SK		Certifications				Page
			With basic controller	With comfort controller	UL	CUL	DIN	GS	
510 (1740)	415 x 597 x 375 (16.3 x 23.5 x 14.8)	230, 50/60	<b>3382.100</b>	<b>3382.500</b>	■	■			32
		115, 50/60	<b>3382.110</b>	<b>3382.510</b>	■	■			32
810 (2765)	415 x 597 x 375 (16.3 x 23.5 x 14.8)	230, 50/60	<b>3359.100</b>	<b>3359.500</b>	■	■			32
		115, 50/60	<b>3359.110</b>	<b>3359.510</b>	■	■			32
		400, 2~, 50/60	<b>3359.140</b>	<b>3359.540</b>	■	■			32
1080 (3690)	415 x 597 x 475 (16.3 x 23.5 x 18.7)	230, 50/60	<b>3383.100</b>	<b>3383.500</b>	■	■			33
		115, 50/60	<b>3383.110</b>	<b>3383.510</b>	■	■			33
		400, 2~, 50/60	<b>3383.140</b>	<b>3383.540</b>	■	■			33
1520 (5190)	415 x 597 x 475 (16.3 x 23.5 x 18.7)	230, 50/60	<b>3384.100</b>	<b>3384.500</b>	■	■			35
		115, 50/60	<b>3384.110</b>	<b>3384.510</b>	■	■			35
		400, 2~, 50/60	<b>3384.140</b>	<b>3384.540</b>	■	■			35
2130 (7270)	415 x 597 x 475 (16.3 x 23.5 x 18.7)	230, 50/60	<b>3385.100</b>	<b>3385.500</b>	■	■			35
		115, 50/60	<b>3385.110</b>	<b>3385.510</b>	■	■			35
		400, 2~, 50/60	<b>3385.140</b>	<b>3385.540</b>	■	■			35
3300 (11,270)	470 x 796 x 580 (18.5 x 31.3 x 22.8)	400, 3~, 50 460, 3~, 60	<b>3386.140</b>	<b>3386.540</b>	■	■			36
4200 (14,344)	470 x 796 x 580 (18.5 x 31.3 x 22.8)	400, 3~, 50 460, 3~, 60	<b>3387.140</b>	<b>3387.540</b>	■	■			36

Roof-mounted air conditioners in stainless steel version, see page 10.

To order air conditioners with integrated condensate evaporators, add .XX1 to the part number, ie. XXXX.XX1.



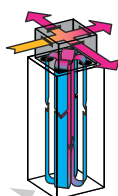
## 4.1 TopTherm Roof-Mounted Air Conditioners

For the office sector

Useful cooling capacity W (BTU)	Dimensions H x W x D mm (inches)	Voltage V, Hz	Part No. SK	Page
1200 (4100)	415 x 597 x 510 (16.3 x 23.5 x 20.1)	115, 50/60	<b>3273.515<sup>1)</sup></b>	34
		230, 50/60	<b>3273.500</b>	34

<sup>1)</sup> Delivery times available on request.





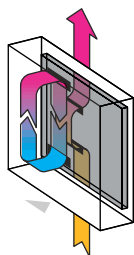
## 4.1 TopTherm Roof-Mounted Air Conditioners

### Stainless steel

Useful cooling capacity W (BTU)	Dimensions H x W x D mm (inches)	Voltage V, Hz	Part No. SK		Certifications				Page
			With basic controller	With comfort controller	UL	CUL	DIN	GS	
510 (1740)	415 x 597 x 375 (16.3 x 23.5 x 14.8)	230, 50/60	<b>3382.200</b>	<b>3382.600</b>	■	■			32
		115, 50/60	<b>3382.210</b>	<b>3382.610</b>	■	■			32
810 (2770)	415 x 597 x 375 (16.3 x 23.5 x 14.8)	230, 50/60	<b>3359.200</b>	<b>3359.600</b>					32
		115, 50/60	<b>3359.210</b>	<b>3359.610</b>					32
		400, 2~, 50/60	<b>3359.240</b>	<b>3359.640</b>					32
1080 (3690)	415 x 597 x 475 (16.3 x 23.5 x 18.7)	230, 50/60	<b>3383.200</b>	<b>3383.600</b>	■	■			33
		115, 50/60	<b>3383.210</b>	<b>3383.610</b>	■	■			33
		400, 2~, 50/60	<b>3383.240</b>	<b>3383.640</b>	■	■			33
1520 (5190)	415 x 597 x 475 (16.3 x 23.5 x 18.7)	230, 50/60	<b>3384.200</b>	<b>3384.600</b>	■	■			35
		115, 50/60	<b>3384.210</b>	<b>3384.610</b>	■	■			35
		400, 2~, 50/60	<b>3384.240</b>	<b>3384.640</b>	■	■			35
2130 (7274)	415 x 597 x 475 (16.3 x 23.5 x 18.7)	230, 50/60	<b>3385.200</b>	<b>3385.600</b>	■	■			35
		115, 50/60	<b>3385.210</b>	<b>3385.610</b>	■	■			35
		400, 2~, 50/60	<b>3385.240</b>	<b>3385.640</b>	■	■			35
3300 (11,270)	470 x 796 x 580 (18.5 x 31.3 x 22.8)	400, 3~, 50 460, 3~, 60	<b>3386.240</b>	<b>3386.640</b>	■	■			36
4200 (14,344)	470 x 796 x 580 (18.5 x 31.3 x 22.8)	400, 3~, 50 460, 3~, 60	<b>3387.240</b>	<b>3387.640</b>	■	■			36

Delivery times available on request.

To order air conditioners with integrated condensate evaporators, add .XX1 to the part number, ie. XXXX.XX1.



## 4.1 Wall-mounted Air Conditioners

### VIP small air conditioners

Useful cooling capacity W (BTU)	Dimensions H x W x D mm (inches)	Voltage V, Hz	Condenser design	Part No. SK	Certifications				Page
					UL	CUL	DIN	GS	
270 (920)	353.5 x 526 x 105 (13.9 x 20.7 x 4.1)	230, 50/60	left	<b>3201.100</b>	■	■			37
			right	<b>3202.100</b>	■	■			37



## 4.1 TopTherm Wall-Mounted Air Conditioners

### Mini air conditioner, in horizontal format

Useful cooling capacity W (BTU)	Dimensions H x W x D mm (inches)	Voltage V, Hz	Part No. SK	Certifications				Page
				UL	CUL	DIN	GS	
320 (1090)	340 x 525 x 153 (13.4 x 20.7 x 6.0)	230, 50/60	<b>3302.300</b>			■		38
		115, 60	<b>3302.310</b>			■		38





## 4.1 TopTherm Wall-Mounted Air Conditioners

Useful cooling capacity W (BTU)	Dimensions H x W x D mm (inches)	Voltage V, Hz	Part No. SK		Certifications				Page
			With basic controller	With comfort controller	UL	CUL	DIN	GS	
320 (1090)	550 x 280 x 140 (21.7 x 11.0 x 5.5)	230, 50/60	<b>3302.100</b>	–	■	■			39
		115, 60	<b>3302.110</b>	–	■	■			39
610 (2080)	550 x 280 x 200 (21.7 x 11.0 x 7.9)	230, 50/60	<b>3303.100</b>	<b>3303.500</b>	■	■			39
		115, 60	<b>3303.110</b>	<b>3303.510</b>	■	■			39
780 (2665)	550 x 280 x 280 (21.7 x 11.0 x 11.0)	230, 50/60	<b>3361.100</b>	<b>3361.500</b>					40
		115, 60	<b>3361.110</b>	<b>3361.510</b>					40
		400, 2~, 50/60	<b>3361.140</b>	<b>3361.540</b>					40
1060 (3600)	950 x 400 x 260 (37.4 x 15.7 x 10.2)	230, 50/60	<b>3304.100</b>	<b>3304.500</b>	■	■			41
		115, 50/60	<b>3304.110</b>	<b>3304.510</b>	■	■			41
		400, 3~, 50/60, 3~, 60	<b>3304.140</b>	<b>3304.540</b>	■	■			41
1510 (5150)	950 x 400 x 260 (37.4 x 15.7 x 10.2)	230, 50/60	<b>3305.100</b>	<b>3305.500</b>	■	■			41
		115, 50/60	<b>3305.110</b>	<b>3305.510</b>	■	■			41
		400, 3~, 50/60, 3~, 60	<b>3305.140</b>	<b>3305.540</b>	■	■			41
2350 (8000)	1580 x 400 x 290 (62.2 x 15.7 x 11.4)	230, 50/60	<b>3328.100</b>	<b>3328.500</b>	■	■			42
		115, 50/60	<b>3328.110</b>	<b>3328.510</b>	■	■			42
		400, 3~, 50/60, 3~, 60	<b>3328.140</b>	<b>3328.540</b>	■	■			42
2750 (9390)	1580 x 400 x 290 (62.2 x 15.7 x 11.4)	230, 50/60	<b>3329.100</b>	<b>3329.500</b>	■	■			42
		115, 50/60	<b>3329.110</b>	<b>3329.510</b>	■	■			42
		400, 3~, 50/60, 3~, 60	<b>3329.140</b>	<b>3329.540</b>	■	■			42
4400 (15,000)	1580 x 500 x 340 (62.2 x 19.7 x 13.4)	400, 3~, 50/60, 3~, 60	<b>3332.140</b>	<b>3332.540</b>	■	■			43

To order air conditioners with integrated condensate evaporators, add .XX1 to the part number, ie. XXXX.XX1.



## Stainless steel

Useful cooling capacity W (BTU)	Dimensions H x W x D mm (inches)	Voltage V, Hz	Part No. SK		Certifications				Page
			With basic controller	With comfort controller	UL	CUL	DIN	GS	
320 (1090)	550 x 280 x 140 (21.7 x 11.0 x 5.5)	230, 50/60	<b>3302.200</b>	–	■	■			39
		115, 60	<b>3302.210</b>	–	■	■			39
610 (2080)	550 x 280 x 200 (21.7 x 11.0 x 7.9)	230, 50/60	<b>3303.200</b>	<b>3303.600</b>	■	■			39
		115, 60	<b>3303.210</b>	<b>3303.610</b>	■	■			39
780 (2665)	550 x 280 x 280 (21.7 x 11.0 x 11.0)	230, 50/60	<b>3361.200</b>	<b>3361.600</b>					40
		115, 60	<b>3361.210</b>	<b>3361.610</b>					40
		400, 2~, 50/60	<b>3361.240</b>	<b>3361.640</b>					40
1060 (3600)	950 x 400 x 260 (37.4 x 15.7 x 10.2)	230, 50/60	<b>3304.200</b>	<b>3304.600</b>	■	■			41
		115, 50/60	<b>3304.210</b>	<b>3304.610</b>	■	■			41
		400, 3~, 50/60, 3~, 60	<b>3304.240</b>	<b>3304.640</b>	■	■			41
1510 (5150)	950 x 400 x 260 (37.4 x 15.7 x 10.2)	230, 50/60	<b>3305.200</b>	<b>3305.600</b>	■	■			41
		115, 50/60	<b>3305.210</b>	<b>3305.610</b>	■	■			41
		400, 3~, 50/60, 3~, 60	<b>3305.240</b>	<b>3305.640</b>	■	■			41
2350 (8000)	1580 x 400 x 290 (62.2 x 15.7 x 11.4)	230, 50/60	<b>3328.200</b>	<b>3328.600</b>	■	■			42
		115, 50/60	<b>3328.210</b>	<b>3328.610</b>	■	■			42
		400, 3~, 50/60, 3~, 60	<b>3328.240</b>	<b>3328.640</b>	■	■			42
2750 (9390)	1580 x 400 x 290 (62.2 x 15.7 x 11.4)	230, 50/60	<b>3329.200</b>	<b>3329.600</b>	■	■			42
		115, 50/60	<b>3329.210</b>	<b>3329.610</b>	■	■			42
		400, 3~, 50/60, 3~, 60	<b>3329.240</b>	<b>3329.640</b>	■	■			42
4400 (15,000)	1580 x 500 x 340 (62.2 x 19.7 x 13.4)	400, 3~, 50/60, 3~, 60	<b>3332.240</b>	<b>3332.640</b>	■	■			43

Delivery times available on request.

To order air conditioners with integrated condensate evaporators, add .XX1 to the part number, ie. XXXX.XX1.





## 4.1 TopTherm Wall-Mounted Air Conditioners

### Slimline

Useful cooling capacity W (BTU)	Dimensions H x W x D mm (inches)	Voltage V, Hz	Part No. SK		Page
			With basic controller	With comfort controller	
1500 (5123)	1580 x 450 x 165 (62.2 x 17.7 x 6.5)	230, 50/60	<b>3377.100<sup>1)</sup></b>	<b>3377.500<sup>1)</sup></b>	44
		115, 50/60	<b>3377.110<sup>1)</sup></b>	<b>3377.510<sup>1)</sup></b>	44
		400/460, 3~, 50/60	<b>3377.140<sup>1)</sup></b>	<b>3377.540<sup>1)</sup></b>	44
1500 (5123)	1580 x 450 x 195 (62.2 x 17.7 x 7.7)	230, 50/60	<b>3366.100</b>	<b>3366.500</b>	44
		115, 50/60	<b>3366.110</b>	<b>3366.510</b>	44
		400/460, 3~, 50/60	<b>3366.140</b>	<b>3366.540</b>	44

<sup>1)</sup> Delivery times available on request.



### Slimline, Stainless steel

Useful cooling capacity W (BTU)	Dimensions H x W x D mm (inches)	Voltage V, Hz	Part No. SK		Page
			With basic controller	With comfort controller	
1500 (5123)	1580 x 450 x 165 (62.2 x 17.7 x 6.5)	230, 50/60	<b>3377.200</b>	<b>3377.600</b>	44
		115, 50/60	<b>3377.210</b>	<b>3377.610</b>	44
		400/460, 3~, 50/60	<b>3377.240</b>	<b>3377.640</b>	44
1500 (5123)	1580 x 450 x 195 (62.2 x 17.7 x 7.7)	230, 50/60	<b>3366.200</b>	<b>3366.600</b>	44
		115, 50/60	<b>3366.210</b>	<b>3366.610</b>	44
		400/460, 3~, 50/60	<b>3366.240</b>	<b>3366.640</b>	44

Delivery times available on request.



## 4.1 TopTherm Wall-Mounted Air Conditioners

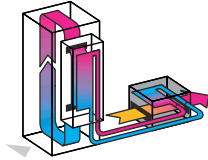
### NEMA 4X version

Useful cooling capacity W (BTU)	Dimensions H x W x D mm (inches)	Voltage V, Hz	Part No. SK		Certifications				Page
			With basic controller	With comfort controller	UL	CUL	DIN	GS	
610 (2080)	550 x 280 x 200 (21.7 x 11.0 x 7.9)	230, 50/60	<b>3303.104</b>	<b>3303.504</b>	■	■			45
		115, 50/60	<b>3303.114</b>	<b>3303.514</b>	■	■			45
1060 (3620)	950 x 400 x 260 (37.4 x 15.7 x 10.2)	230, 50/60	<b>3304.104</b>	<b>3304.504</b>	■	■			45
		115, 50/60	<b>3304.114</b>	<b>3304.514</b>	■	■			45
		400, 3~, 50/60	<b>3304.144</b>	<b>3304.544</b>	■	■			45
1510 (5150)	950 x 400 x 260 (37.4 x 15.7 x 10.2)	230, 50/60	<b>3305.104</b>	<b>3305.504</b>	■	■			45
		115, 50/60	<b>3305.114</b>	<b>3305.514</b>	■	■			45
		400, 3~, 50/60	<b>3305.144</b>	<b>3305.544</b>	■	■			45
2350 (8000)	1580 x 400 x 290 (62.2 x 15.7 x 11.4)	230, 50/60	<b>3328.104</b>	<b>3328.504</b>	■	■			46
		115, 50/60	<b>3328.114</b>	<b>3328.514</b>	■	■			46
		400, 3~, 50/60	<b>3328.144</b>	<b>3328.544</b>	■	■			46
2750 (9390)	1580 x 400 x 290 (62.2 x 15.7 x 11.4)	230, 50/60	<b>3329.104</b>	<b>3329.504</b>	■	■			46
		115, 50/60	<b>3329.114</b>	<b>3329.514</b>	■	■			46
		400, 3~, 50/60	<b>3329.144</b>	<b>3329.544</b>	■	■			46

Delivery times available on request.



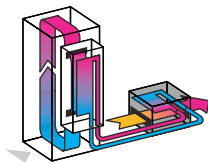




## 4.2 Chillers

### Mini

Useful cooling capacity W (BTU)	Dimensions H x W x D mm (inches)	Voltage V, Hz	Part No. SK		Page
			Roof-mount	Wall-mount	
1120 (3825)	950 x 400 x 310 (37.4 x 15.7 x 12.2)	400, 3~, 50/60/ 460, 3~, 60	—	<b>3360.100</b>	52
2800 (9560)	1580 x 400 x 290 (62.2 x 15.7 x 11.4)	400, 3~, 50/60/ 460, 3~, 60	—	<b>3360.250</b>	52
4500 (15,370)	1580 x 500 x 340 (62.2 x 19.7 x 13.4)	400, 3~, 50/60/ 460, 3~, 60	—	<b>3360.400</b>	52
1070 (3650)	400 x 600 x 430 (15.7 x 23.6 x 16.9)	230, 50/60	<b>3318.600</b>	—	50
			<b>3318.610</b>	—	50
1660 (5670)	400 x 600 x 430 (15.7 x 23.6 x 16.9)	230, 50/60	<b>3319.600</b>	—	50
			<b>3319.610</b>	—	50
3400 (11,610)	680 x 600 x 625 (26.8 x 23.6 x 24.6)	400, 3~, 50/60/ 460, 3~, 60	<b>3320.600</b>	—	51
5400 (18,440)	680 x 600 x 625 (26.8 x 23.6 x 24.6)	400, 3~, 50/60/ 460, 3~, 60	<b>3334.600</b>	—	51

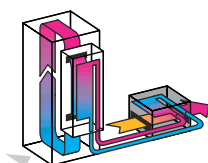


### Freestanding enclosure

Useful cooling capacity W (BTU)	Dimensions H x W x D mm (inches)	Voltage V, Hz	Part No. SK	Page
2100 (7172)	725 x 470 x 540 (28.5 x 18.5 x 21.3)	400, 3~, 50	<b>3336.100</b>	53
2580 (8811)	965 x 485 x 650 (38.0 x 19.1 x 25.6)	400, 3~, 50	<b>3336.200</b>	53
3360 (11,475)	965 x 485 x 650 (38.0 x 19.1 x 25.6)	400, 3~, 50	<b>3336.300</b>	53
5040 (17,213)	1180 x 595 x 800 (46.5 x 23.4 x 31.5)	400, 3~, 50	<b>3336.500</b>	53
6160 (21,038)	1180 x 595 x 800 (46.5 x 23.4 x 31.5)	400, 3~, 50	<b>3336.600</b>	53
7700 (26,297)	1180 x 595 x 800 (46.5 x 23.4 x 31.5)	400, 3~, 50	<b>3336.650</b>	53
12600 (43,030)	1178 x 615 x 1160 (46.4 x 24.2 x 45.7)	400, 3~, 50 460, 3~, 60	<b>3336.700</b>	54
18700 (63,865)	1178 x 615 x 1160 (46.4 x 24.2 x 45.7)	400, 3~, 50 460, 3~, 60	<b>3336.710</b>	54
20100 (68,645)	1178 x 615 x 1160 (46.4 x 24.2 x 45.7)	400, 3~, 50 460, 3~, 60	<b>3336.720</b>	54
23350 (76,330)	1178 x 715 x 1360 (46.4 x 28.1 x 53.5)	400, 3~, 50 460, 3~, 60	<b>3336.730</b>	54
25400 (86,745)	1178 x 715 x 1360 (46.4 x 28.1 x 53.5)	400, 3~, 50 460, 3~, 60	<b>3336.740</b>	54
32250 (110,140)	1178 x 715 x 1360 (46.4 x 28.1 x 53.5)	400, 3~, 50 460, 3~, 60	<b>3336.750</b>	54

Delivery times available on request.



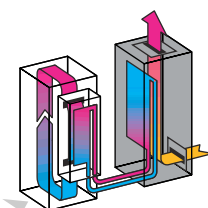


## 4.2 Chillers

### Freestanding enclosure for oil

Useful cooling capacity W (BTU)	Dimensions H x W x D mm (inches)	Voltage V, Hz	Part No. SK	Page
2550 (8709)	965 x 485 x 650 (38.0 x 19.1 x 25.6)	400, 3~, 50	<b>3337.200</b>	55
3400 (11,612)	965 x 485 x 650 (38.0 x 19.1 x 25.6)	400, 3~, 50	<b>3337.300</b>	55
5150 (17,588)	1180 x 595 x 800 (46.5 x 23.4 x 31.5)	400, 3~, 50	<b>3337.500</b>	55
6700 (22,882)	1180 x 595 x 800 (46.5 x 23.4 x 31.5)	400, 3~, 50	<b>3337.600</b>	55
7900 (26,980)	1180 x 595 x 800 (46.5 x 23.4 x 31.5)	400, 3~, 50	<b>3337.650</b>	55
10600 (36,201)	1178 x 615 x 1160 (46.4 x 24.2 x 45.7)	400, 3~, 50 460, 3~, 60	<b>3337.700</b>	56
15150 (51,740)	1178 x 615 x 1160 (46.4 x 24.2 x 45.7)	400, 3~, 50 460, 3~, 60	<b>3337.710</b>	56
17200 (58,741)	1178 x 615 x 1160 (46.4 x 24.2 x 45.7)	400, 3~, 50 460, 3~, 60	<b>3337.720</b>	56
19250 (65,742)	1178 x 715 x 1360 (46.4 x 28.1 x 53.5)	400, 3~, 50 460, 3~, 60	<b>3337.730</b>	56
21600 (73,768)	1178 x 715 x 1360 (46.4 x 28.1 x 53.5)	400, 3~, 50 460, 3~, 60	<b>3337.740</b>	56
26100 (89,136)	1178 x 715 x 1360 (46.4 x 28.1 x 53.5)	400, 3~, 50 460, 3~, 60	<b>3337.750</b>	56

Delivery times available on request.

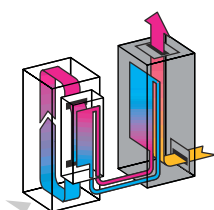


### In the TS8 modular enclosure system

Useful cooling capacity W (BTU)	Dimensions H x W x D mm (inches)	Voltage V, Hz	Part No. SK	Page
6000 (20,249)	2000 x 600 x 600 (78.7 x 23.6 x 23.6)	400, 3~, 50	<b>3335.060</b>	57
7500 (25,614)	2000 x 600 x 600 (78.7 x 23.6 x 23.6)	400, 3~, 50	<b>3335.075</b>	57
10000 (34,152)	2000 x 800 x 600 (78.7 x 31.5 x 23.6)	400, 3~, 50	<b>3335.100</b>	58
12000 (40,982)	2000 x 800 x 600 (78.7 x 31.5 x 23.6)	400, 3~, 50	<b>3335.120</b>	58
15000 (51,228)	2000 x 800 x 600 (78.7 x 31.5 x 23.6)	400, 3~, 50	<b>3335.150</b>	58
20000 (68,304)	2000 x 1200 x 600 (78.7 x 47.2 x 23.6)	400, 3~, 50	<b>3335.200</b>	58
25000 (83,379)	2000 x 1200 x 600 (78.7 x 47.2 x 23.6)	400, 3~, 50	<b>3335.250</b>	58

Delivery times available on request.



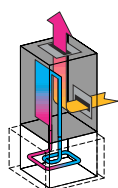


## 4.2 Chillers

### In an industrial enclosure

Useful cooling capacity W (BTU)	Dimensions H x W x D mm (inches)	Voltage V, Hz	Part No. SK	Page
38430 (131,245)	1400 x 815 x 1560 (55.1 x 32.1 x 61.4)	400, 3~, 50 460, 3~, 60	<b>3339.100</b>	59
43480 (148,492)	1400 x 815 x 1560 (55.1 x 32.1 x 61.4)	400, 3~, 50 460, 3~, 60	<b>3339.200</b>	59
20600 (70,349)	1000 x 1800 x 2000 (39.3 x 70.9 x 78.7)	400, 3~, 50	<b>3339.250</b>	59
36800 (125,672)	1000 x 1800 x 2000 (39.3 x 70.9 x 78.7)	400, 3~, 50	<b>3339.280</b>	59
66700 (227,792)	2000 x 1550 x 2500 (78.7 x 61.0 x 98.4)	400, 3~, 50	<b>3339.300</b>	59
75900 (259,212)	2000 x 1550 x 2500 (78.7 x 61.0 x 98.4)	400, 3~, 50	<b>3339.400</b>	59
50000 (170,750)	1550 x 2000 x 3400 (61.1 x 78.7 x 133.9)	400, 3~, 50	<b>3339.450</b>	59
172200 (588,094)	2200 x 1630 x 3400 (86.57 x 64.2 x 133.9)	400, 3~, 50	<b>3339.500</b>	59

Delivery times available on request.



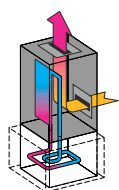
## 4.2 Immersible Chillers

### For oil

Useful cooling capacity W (BTU)	Dimensions H x W x D mm (inches)	Voltage V, Hz	Part No. SK	Page
2700 (9120)	1650 x 785 x 785 (65.0 x 30.9 x 30.9)	400, 3~, 50 460, 3~, 60	<b>3338.020</b>	60
3600 (12,295)	1650 x 785 x 785 (65.0 x 30.9 x 30.9)	400, 3~, 50 460, 3~, 60	<b>3338.040</b>	60
5200 (17,760)	1650 x 785 x 785 (65.0 x 30.9 x 30.9)	400, 3~, 50 460, 3~, 60	<b>3338.060</b>	60
6300 (21,515)	1650 x 785 x 785 (65.0 x 30.9 x 30.9)	400, 3~, 50 460, 3~, 60	<b>3338.080</b>	60
9500 (32,445)	1650 x 785 x 785 (65.0 x 30.9 x 30.9)	400, 3~, 50 460, 3~, 60	<b>3338.100</b>	61
11800 (40,300)	1650 x 785 x 785 (65.0 x 30.9 x 30.9)	400, 3~, 50 460, 3~, 60	<b>3338.120</b>	61
13400 (45,760)	1650 x 785 x 785 (65.0 x 30.9 x 30.9)	400, 3~, 50 460, 3~, 60	<b>3338.140</b>	61
15200 (51,910)	1650 x 785 x 785 (65.0 x 30.9 x 30.9)	400, 3~, 50 460, 3~, 60	<b>3338.160</b>	61
17100 (58,400)	1650 x 785 x 785 (65.0 x 30.9 x 30.9)	400, 3~, 50 460, 3~, 60	<b>3338.180</b>	61
19400 (66,255)	1650 x 785 x 785 (65.0 x 30.9 x 30.9)	400, 3~, 50 460, 3~, 60	<b>3338.200</b>	61
23200 (79,230)	1650 x 785 x 1830 (65.0 x 30.9 x 72.04)	400, 3~, 50 460, 3~, 60	<b>3338.220</b>	62
34500 (117,825)	1650 x 785 x 1830 (65.0 x 30.9 x 72.04)	400, 3~, 50 460, 3~, 60	<b>3338.240</b>	62
39100 (133,415)	1650 x 785 x 1830 (65.0 x 30.9 x 72.0)	400, 3~, 50 460, 3~, 60	<b>3338.260</b>	62
49800 (170,075)	1650 x 1830 x 1830 (65.0 x 72.0 x 72.0)	400, 3~, 50 460, 3~, 60	<b>3338.280</b>	62
54400 (185,785)	1650 x 1830 x 1830 (65.0 x 72.0 x 72.0)	400, 3~, 50 460, 3~, 60	<b>3338.300</b>	62
67900 (231,890)	1650 x 1830 x 1830 (65.0 x 72.0 x 72.0)	400, 3~, 50 460, 3~, 60	<b>3338.320</b>	62
81300 (277,655)	1650 x 1830 x 1830 (65.0 x 72.0 x 72.0)	400, 3~, 50 460, 3~, 60	<b>3338.340</b>	62
87200 (297,805)	1650 x 1830 x 1830 (65.0 x 72.0 x 72.0)	400, 3~, 50 460, 3~, 60	<b>3338.360</b>	62

Delivery times available on request.





## 4.2 Immersible Chillers

For emulsion

Useful cooling capacity W (BTU)	Dimensions H x W x D mm (inches)	Voltage V, Hz	Part No. SK	Page
2700 (9220)	1650 x 785 x 785 (65.0 x 30.9 x 30.9)	400, 3~, 50 460, 3~, 60	<b>3338.500</b>	63
3600 (12,295)	1650 x 785 x 785 (65.0 x 30.9 x 30.9)	400, 3~, 50 460, 3~, 60	<b>3338.520</b>	63
5200 (17,760)	1650 x 785 x 785 (65.0 x 30.9 x 30.9)	400, 3~, 50 460, 3~, 60	<b>3338.540</b>	63
6300 (21,515)	1650 x 785 x 785 (65.0 x 30.9 x 30.9)	400, 3~, 50 460, 3~, 60	<b>3338.560</b>	63
9500 (32,445)	1650 x 785 x 785 (65.0 x 30.9 x 30.9)	400, 3~, 50 460, 3~, 60	<b>3338.580</b>	64
11800 (40,300)	1650 x 785 x 785 (65.0 x 30.9 x 30.9)	400, 3~, 50 460, 3~, 60	<b>3338.600</b>	64
13400 (45,765)	1650 x 785 x 785 (65.0 x 30.9 x 30.9)	400, 3~, 50 460, 3~, 60	<b>3338.620</b>	64
15200 (51,910)	1650 x 785 x 785 (65.0 x 30.9 x 30.9)	400, 3~, 50 460, 3~, 60	<b>3338.640</b>	64
17100 (58,400)	1650 x 785 x 785 (65.0 x 30.9 x 30.9)	400, 3~, 50 460, 3~, 60	<b>3338.660</b>	64
19400 (66,255)	1650 x 785 x 785 (65.0 x 30.9 x 30.9)	400, 3~, 50 460, 3~, 60	<b>3338.680</b>	64
23200 (79,230)	1650 x 785 x 1830 (65.0 x 30.9 x 72.0)	400, 3~, 50 460, 3~, 60	<b>3338.700</b>	65
34500 (117,825)	1650 x 785 x 1830 (65.0 x 30.9 x 72.0)	400, 3~, 50 460, 3~, 60	<b>3338.720</b>	65
39100 (133,535)	1650 x 785 x 1830 (65.0 x 30.9 x 72.0)	400, 3~, 50 460, 3~, 60	<b>3338.740</b>	65
49800 (170,075)	1650 x 1830 x 1830 (65.0 x 72.0 x 72.0)	400, 3~, 50 460, 3~, 60	<b>3338.760</b>	65
54400 (185,785)	1650 x 1830 x 1830 (65.0 x 72.0 x 72.0)	400, 3~, 50 460, 3~, 60	<b>3338.780</b>	65
67900 (231,890)	1650 x 1830 x 1830 (65.0 x 72.0 x 72.0)	400, 3~, 50 460, 3~, 60	<b>3338.800</b>	65
81300 (277,655)	1650 x 1830 x 1830 (65.0 x 72.0 x 72.0)	400, 3~, 50 460, 3~, 60	<b>3338.820</b>	65
87200 (297,805)	1650 x 1830 x 1830 (65.0 x 72.0 x 72.0)	400, 3~, 50 460, 3~, 60	<b>3338.840</b>	65

Delivery times available on request.

## 4.3 Air/Water Heat Exchangers

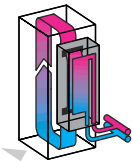
Micro, for wall-mounting

Useful cooling capacity W (BTU)	Dimensions H x W x D mm (inches)	Voltage V, Hz	Part No. SK	Page
300 (1025)	300 x 150 x 85 (11.8 x 5.9 x 3.3)	230, 50/60	<b>3212.230</b>	68
		115, 50/60	<b>3212.115<sup>1)</sup></b>	68
		24 V (DC)	<b>3212.024</b>	68

<sup>1)</sup> Delivery times available on request.





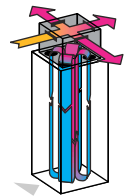


## 4.3 Air/Water Heat Exchangers

### Wall-mounted

Useful cooling capacity W (BTU)	Dimensions H x W x D mm (inches)	Voltage V, Hz	Part No. SK	Certifications				Page
			Wall mount	UL	CUL	DIN	GS	
600 (2049)	500 x 200 x 100 (19.7 x 7.9 x 3.9)	230, 50/60	<b>3214.100</b>					69
1000 (3415)	520 x 298 x 135 (20.5 x 11.7 x 5.3)	230, 50/60	<b>3217.100</b>	■	■			69
1250 (4269)	950 x 200 x 100 (37.4 x 7.9 x 3.9)	230, 50/60	<b>3215.100</b>					70
1540 (5259)	825 x 380 x 105 (32.4 x 15.0 x 4.1)	230, 50/60	<b>3247.000</b>	■	■			70
2250 (7384)	950 x 400 x 200 (37.4 x 15.7 x 7.9)	230, 50/60	<b>3218.104<sup>1)</sup></b>					71
3000 (10,246)	950 x 400 x 200 (37.4 x 15.7 x 7.9)	230, 50/60	<b>3218.100</b>	■	■			71
4500 (15,368)	1400 x 450 x 250 (55.1 x 17.7 x 9.8)	230, 50/60	<b>3216.100</b>	■	■			71
7000 (23,905)	450 x 1800 x 300 (17.7 x 70.9 x 11.8)	400, 3~, 50/60	<b>3216.480</b>					71

<sup>1)</sup> Delivery times available on request.

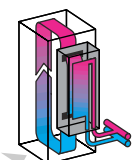


## 4.3 TopTherm Air/Water Heat Exchangers

### Roof-mounted

Useful cooling capacity W (BTU)	Dimensions H x W x D mm (inches)	Voltage V, Hz	Part No. SK		Page
			With basic controller	With comfort controller	
1875 (6403)	415 x 597 x 475 (16.3 x 23.5 x 18.7)	230, 50/60	<b>3209.104<sup>1)</sup></b>	<b>3209.504<sup>1)</sup></b>	72
		115, 50/60	<b>3209.114<sup>1)</sup></b>	<b>3209.514<sup>1)</sup></b>	72
		400, 2~, 50/60	<b>3209.144<sup>1)</sup></b>	<b>3209.544<sup>1)</sup></b>	72
2500 (8538)	415 x 597 x 475 (16.3 x 23.5 x 18.7)	230, 50/60	<b>3209.100</b>	<b>3209.500</b>	72
		115, 50/60	<b>3209.110</b>	<b>3209.510</b>	72
		400, 2~, 50/60	<b>3209.140<sup>1)</sup></b>	<b>3209.540<sup>1)</sup></b>	72
3000 (10,246)	415 x 597 x 475 (16.3 x 23.5 x 18.7)	230, 50/60	<b>3210.104<sup>1)</sup></b>	<b>3210.504<sup>1)</sup></b>	73
		115, 50/60	<b>3210.114<sup>1)</sup></b>	<b>3210.514<sup>1)</sup></b>	73
		400, 2~, 50/60	<b>3210.144<sup>1)</sup></b>	<b>3210.544<sup>1)</sup></b>	73
4000 (13,661)	415 x 597 x 475 (16.3 x 23.5 x 18.7)	230, 50/60	<b>3210.100</b>	<b>3210.500</b>	73
		115, 50/60	<b>3210.110</b>	<b>3210.510</b>	73
		400, 2~, 50/60	<b>3210.140<sup>1)</sup></b>	<b>3210.540<sup>1)</sup></b>	73

<sup>1)</sup> Delivery times available on request.



## 4.3 Air/Water Heat Exchangers

### As a sidewall for TS8 modular enclosures

Useful cooling capacity W (BTU)	For modular enclosure dimensions H x D mm (inches)	Dimensions H x W x D mm (inches)	Voltage V, Hz	Part No. SK	Page
700 (2391)	1800 x 600 (70.9 x 23.6)	1800 x 600 x 95 (70.9 x 23.6 x 3.7)	230, 50/60	<b>3316.180</b>	74
700 (2391)	2000 x 600 (78.7 x 23.6)	2000 x 600 x 95 (78.7 x 23.6 x 3.7)	230, 50/60	<b>3316.200</b>	74

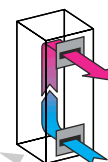




## 4.3 TopTherm Air/Air Heat Exchangers

### Wall-mounting

Specific thermal capacity	Dimensions H x W x D mm (inches)	Voltage V, Hz	Part No. SK	Certifications				Page
				UL	CUL	DIN	GS	
12.0 W/C	200 x 400 x 146 (7.8 x 15.7 x 4.8)	230, 50/60	<b>3125.800</b>					77
17.5 W/C	550 x 280 x 150 (21.7 x 11.0 x 5.9)	230, 50/60	<b>3126.100</b>	■	■			75
30.0 W/C	950 x 400 x 205 (37.4 x 15.7 x 8.1)	230, 50/60	<b>3127.100</b>	■	■			75
45.0 W/C	950 x 400 x 225 (37.4 x 15.7 x 8.9)	230, 50/60	<b>3128.100</b>	■	■			75
60.0 W/C	950 x 400 x 225 (37.4 x 15.7 x 8.9)	230, 50/60	<b>3129.100</b>	■	■			75
62.0 W/C	400 x 1360 x 110 (15.7 x 53.0 x 4.3)	230, 50/60	<b>3129.800</b>					77
90.0 W/C	1580 x 400 x 215 (62.2 x 15.7 x 8.5)	230, 50/60	<b>3130.100</b>	■	■			76

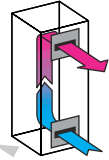
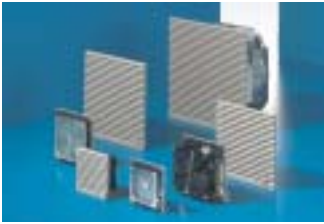


## 4.4 Filter Fan Unit

Air displacement, unimpeded air flow	Voltage V, Hz	Part No. SK	Certifications					Page
			UL	CUL	DIN	GS	CSA	
20/25 m³/h (12/15 cfm)	230, 50/60	<b>3321.107</b>	■	■				79
	115, 50/60	<b>3321.117</b>	■	■				79
20 m³/h (12 cfm)	24 (DC)	<b>3321.027</b>	■	■				79
	48 (DC)	<b>3321.047<sup>1)</sup></b>	■	■				79
55/66 m³/h (32/39 cfm)	230, 50/60	<b>3322.107</b>	■	■			■	79
	115, 50/60	<b>3322.117</b>	■	■			■	79
55 m³/h (32 cfm)	24 (DC)	<b>3322.027</b>	■	■				79
	48 (DC)	<b>3322.047<sup>1)</sup></b>	■	■				79
105/120 m³/h (62/71 cfm)	230, 50/60	<b>3323.107</b>	■	■			■	80
	115, 50/60	<b>3323.117</b>	■	■			■	80
105 m³/h (62 cfm)	24 (DC)	<b>3323.027</b>	■	■			■	80
	48 (DC)	<b>3323.047<sup>1)</sup></b>	■	■				80
160/180 m³/h (94/106 cfm)	230, 50/60	<b>3324.107</b>	■	■			■	80
	115, 50/60	<b>3324.117</b>	■	■			■	80
180 m³/h (106 cfm)	24 (DC)	<b>3324.027</b>	■	■			■	80
	48 (DC)	<b>3324.047<sup>1)</sup></b>	■	■				80
230/265 m³/h (135/156 cfm)	230, 50/60	<b>3325.107</b>	■	■			■	81
	115, 50/60	<b>3325.117</b>	■	■			■	81
230 m³/h (135 cfm)	24 (DC)	<b>3325.027</b>	■	■			■	81
	48 (DC)	<b>3325.047<sup>1)</sup></b>	■	■				81
550/600 m³/h (324/353 cfm)	230, 50/60	<b>3326.107</b>	■	■			■	82
	115, 50/60	<b>3326.117</b>	■	■			■	82
700/720 m³/h (412/424 cfm)	230, 50/60	<b>3327.107</b>	■	■				82
	115, 50/60	<b>3327.117</b>	■	■				82
	400/460, 3~., 50/60	<b>3327.147</b>	■	■				82
1160 m³/h (680 cfm)	230, 50/60	<b>9964.986</b>						
	115, 50/60	<b>9964.980</b>						

<sup>1)</sup> Delivery times available on request.

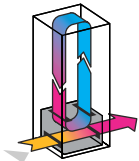




## 4.4 Filter Fan Unit – EMC

Air displacement, unimpeded air flow	Voltage V, Hz	Part No. SK	Certifications					Page
			UL	CUL	DIN	GS	CSA	
20/25 m³/h (12/15 cfm)	230, 50/60	<b>3321.607</b>	■	■				83
	115, 50/60	<b>3321.617<sup>1)</sup></b>	■	■				83
55/66 m³/h (32/39 cfm)	230, 50/60	<b>3322.607</b>	■	■				83
	115, 50/60	<b>3322.617<sup>1)</sup></b>	■	■				83
105/120 m³/h (62/71 cfm)	230, 50/60	<b>3323.607</b>	■	■				83
	115, 50/60	<b>3323.617<sup>1)</sup></b>	■	■				83
160/180 m³/h (94/106 cfm)	230, 50/60	<b>3324.607</b>	■	■				84
	115, 50/60	<b>3324.617<sup>1)</sup></b>	■	■				84
230/265 m³/h (135/156 cfm)	230, 50/60	<b>3325.607</b>	■	■				84
	115, 50/60	<b>3325.617</b>	■	■				84
550/600 m³/h (324/353 cfm)	230, 50/60	<b>3326.607</b>	■	■				84
	115, 50/60	<b>3326.617<sup>1)</sup></b>	■	■				84
700/720 m³/h (412/424 cfm)	230, 50/60	<b>3327.607</b>	■	■				84
	115, 50/60	<b>3327.617<sup>1)</sup></b>	■	■				84

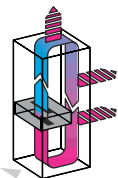
<sup>1)</sup> Delivery times available on request.



## 4.5 Rack-Mounted Air Conditioners

Useful cooling capacity W (BTU)	Dimensions H x W x D mm (inches)	Voltage V, Hz	Part No. SK	Page
1000 (3415)	265.9 x 445 x 542 (10.5 x 17.5 x 21.3)	115, 50/60	<b>3278.134<sup>1)</sup></b>	87
		230, 50/60	<b>3292.134</b>	87

<sup>1)</sup> Delivery times available on request.

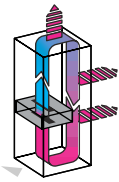


## 4.5 Rack-Mounted Fan

Air displacement, unimpeded air flow	No. of fans	Distance between axes mm (inches)	Voltage V, Hz	Part No. SK	Certifications					Page
					UL	CUL	DIN	GS	VDE	
250 m³/h (147 cfm)	3	85 (3.3)	36 (DC) – 72 (DC)	<b>9769.002<sup>1)</sup></b>						88
320 m³/h (188 cfm)	2	85 (3.3)	24 (DC)	<b>3340.024<sup>1)</sup></b>	■	■			■	88
	2	85 (3.3)	115 (AC), 50/60	<b>3340.115<sup>1)</sup></b>	■	■			■	88
	2	85 (3.3)	230 (AC), 50/60	<b>3340.230</b>	■	■			■	88
480 m³/h (283 cfm)	3	85 (3.3)	24 (DC)	<b>3341.024<sup>1)</sup></b>	■	■			■	88
	3	105 (4.1)	24 (DC)	<b>3342.024</b>	■	■			■	88
	3	85 (3.3)	115 (AC), 50/60	<b>3341.115</b>	■	■			■	88
	3	105 (4.1)	115 (AC), 50/60	<b>3342.115<sup>1)</sup></b>	■	■			■	88
	3	85 (3.3)	230 (AC), 50/60	<b>3341.230</b>	■	■			■	88
	3	105 (4.1)	230 (AC), 50/60	<b>3342.230</b>	■	■			■	88
	3	105 (4.1)	24 (DC) 115 – 230 (AC), 50/60	<b>3342.500</b>	■	■			■	88

<sup>1)</sup> Delivery times available on request.

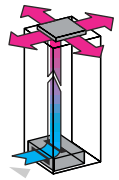




## 4.5 Vario Rack-Mounted Fan

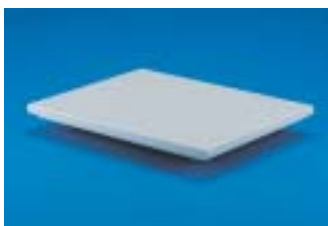
Air displacement, unimpeded air flow	No. of fans	Distance between axes mm (inches)	Voltage V, Hz	Part No. SK	Certifications					Page
					UL	CUL	DIN	GS	VDE	
320 m³/h (188 cfm)	2	85 (3.3)	24 (DC)	<b>3350.024<sup>1)</sup></b>	■	■			■	88
	2	85 (3.3)	115 (AC), 50/60	<b>3350.115<sup>1)</sup></b>	■	■			■	88
	2	85 (3.3)	230 (AC), 50/60	<b>3350.230</b>	■	■			■	88
480 m³/h (283 cfm)	3	85 (3.3)	24 (DC)	<b>3351.024<sup>1)</sup></b>	■	■			■	88
	3	105 (4.1)	24 (DC)	<b>3352.024<sup>1)</sup></b>	■	■			■	88
	3	85 (3.3)	115 (AC), 50/60	<b>3351.115<sup>1)</sup></b>	■	■			■	88
	3	105 (4.1)	115 (AC), 50/60	<b>3352.115<sup>1)</sup></b>	■	■			■	88
	3	85 (3.3)	230 (AC), 50/60	<b>3351.230</b>	■	■			■	88
	3	105 (4.1)	230 (AC), 50/60	<b>3352.230</b>	■	■			■	88
	3	105 (4.1)	24 (DC) 115 – 230 (AC), 50/60	<b>3352.500<sup>1)</sup></b>	■	■			■	88

<sup>1)</sup> Delivery times available on request.



## 4.5 Centrifugal Fan

Air displacement, unimpeded air flow	Dimensions H x W x D mm (inches)	Voltage V, Hz	Part No. SK	Page
320 m³/h (188 cfm)	87 x 482 x 158 (3.4 x 19.0 x 6.2)	115, 50/60	<b>3145.000</b>	89
		230, 50/60	<b>3144.000</b>	89



## 4.5 Roof-Mounted Fan and Vent Attachment

For TS8 modular enclosures

Air displacement, unimpeded air flow	Voltage V, Hz	Required mounting cutout W x D mm (inches)	Part No. SK	Page
400 m³/h (235 cfm)	115, 50/60	475 x 260 (18.7 x 10.2)	<b>3149.410</b>	90
	230, 50/60	475 x 260 (18.7 x 10.2)	<b>3149.420</b>	90
	400, 3~, 50/60 460, 3~, 60	475 x 260 (18.7 x 10.2)	<b>3149.440</b>	90
800 m³/h (471 cfm)	115, 50/60	475 x 260 (18.7 x 10.2)	<b>3149.810</b>	90
	230, 50/60	475 x 260 (18.7 x 10.2)	<b>3149.820</b>	90
	400, 3~, 50/60 460, 3~, 60	475 x 260 (18.7 x 10.2)	<b>3149.840</b>	90
Without motor		490 x 390 (19.3 x 15.4)	<b>8801.380</b>	90



## 4.5 Roof-Mounted Fans

Air displacement, unimpeded air flow	Voltage V, Hz	Required mounting cutout W x D mm (inches)	Part No. SK	Page
360 m³/h (212 cfm)	230, 50/60	345 x 265 (13.6 x 10.4)	<b>3149.007</b>	90
	115, 50/60		<b>3169.007</b>	90
Without fan motor		345 x 265 (13.6 x 10.4)	<b>3148.007</b>	90
625 m³/h (360 cfm)	230, 50/60	345 x 265 (13.6 x 10.4)	<b>9966.815 + 9967.776</b>	
625 m³/h (360 cfm)	115, 50/60	345 x 265 (13.6 x 10.4)	<b>9966.814 + 9967.775 EMC</b>	

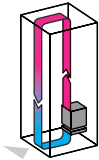




## 4.5 Roof-Mounted Fans

For TS/FR(i) for the office sector

Air displacement, unimpeded air flow	Voltage V, Hz	Version		Dimensions H x W x D mm (inches)	Part No. SK	Certifications					Page
		With roof plate	Without roof plate			UL	CUL	DIN	GS	CSA	
1,500 m³/h (883 cfm)	115, 50/60	■		240 x 800 x 800 (9.4 x 31.5 x 31.5)	<b>3164.610</b>						91
	230, 50/60	■			<b>3164.620</b>						91
1,500 m³/h (883 cfm)	115, 50/60	■		240 x 800 x 900 (9.4 x 31.5 x 35.4)	<b>3164.810</b>						91
	230, 50/60	■			<b>3164.820</b>						91
1,500 m³/h (883 cfm)	115, 50/60		■	227 x 511 x 511 (8.9 x 20.1 x 20.1)	<b>3164.115</b>						91
	230, 50/60		■		<b>3164.230</b>						91



## 4.6 Enclosure Heaters

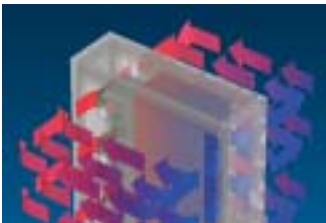
Continuous thermal output for T <sub>u</sub> = 20°C (68°F) W	Voltage V, Hz	Part No. SK	Certifications					Page
			UL	CUL	DIN	GS	VDE	
10	110 – 240 (AC/DC)	<b>3105.000</b>	■	■			■	98
20	110 – 240 (AC/DC)	<b>3106.000</b>	■	■			■	98
30	110 – 240 (AC/DC)	<b>3115.000</b>	■	■			■	98
50	110 – 240 (AC/DC)	<b>3116.000</b>	■	■			■	98
130	110 – 240 (AC/DC)	<b>3107.000 + 3108.000</b>	■	■			■	98
300	230, 50/60	<b>3102.000 (incl. fan)</b>	■	■			■	98
300	115, 50/60	<b>3102.110</b>	■	■			■	98



## 4.6 Enclosure Heaters

For CS outdoor enclosures

Continuous thermal output T <sub>u</sub> = 20°C (68°F) W	Voltage V, Hz	Installation		Dimensions H x W x D mm (inches)	Part No. CS	Certifications					Page
		In the enclosure	19" rails			UL	CUL	DIN	GS	VDE	
1000	230, 50/60	■	–	82 x 325 x 220 (3.2 x 12.8 x 8.7)	<b>9769.015</b>	■	■				99
600	230, 50/60	–	■	87.2 x 482.6 x 236 (3.4 x 19.0 x 9.3)	<b>9769.023</b>						99



## 4.8 Liquid Cooling Package

Cooling capacity W (BTU)	Dimensions H x W x D mm (inches)	Voltage V, Hz	Part No. SK	Page
<b>Enclosure + 3 modules</b>				
4000 (13,661)	2000 x 300 x 1000 (78.7 x 11.8 x 39.4)	230, 50/60	<b>3301.230</b>	115
4000 (13,661)	2000 x 300 x 1000 (78.7 x 11.8 x 39.4)	115, 50/60	<b>3301.210</b>	115
<b>Cooling module, single</b>				
4000 (13,661)	250 x 550 x 950 (9.8 x 21.7 x 37.4)	230, 50/60	<b>3301.250</b>	115



## 4.8 Rack-Mounted Chiller

Specific thermal capacity W (BTU)	Dimensions H x W x D mm (inches)	Voltage V, Hz	Part No. SK	Page
1000 (3415)	442 x 175 x 751 (17.4 x 6.9 x 29.6)	230, 50/60	<b>3301.260</b>	116

Delivery times available on request.



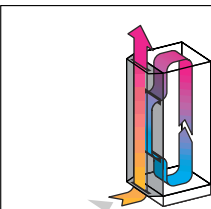
# Air Conditioners

## Features



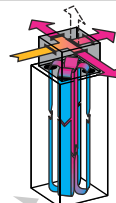
Rittal Climate Control offers comprehensive process protection for virtually any application. This includes the cooling of sensitive electronics in enclosures and cases for industrial process control, and server and network technology, regardless of ambient conditions. But Rittal's climate control systems are not isolated solutions, with Rittal, everything is interconnected. Perfectly linked and controlled cooling technology combined with eco-friendly, energy-efficient equipment, create the perfect environment for your equipment.

### Selection criteria



#### Integrated cooling technology

The combination of enclosure and cooling components provides excellent cooling, cost savings and reduced assembly time.



#### Roof-mounted air conditioners

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, right, and optionally upwards. This allows enclosures to be bayed together or to be installed close to the wall.



#### Wall-mounted air conditioners

Depending on the space and design requirements, internal mounting, partial internal mounting and external mounting are all possible. Effective cold air dissipation throughout the enclosure is achieved by large distances between the air intake and outlet openings.

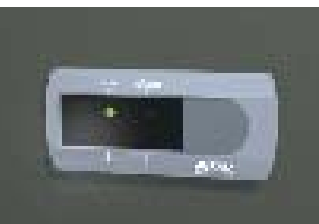
### Intelligent control



Rittal offers basic and comfort control versions for operational reliability. Both versions offer a comprehensive range of functions. Essential control electronics are well protected and cooled in the inner circuit.

Both versions have the following properties:

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



#### Basic controller:

- Visualization of the operating status by a LED display
- Switching hysteresis: 5 K
- Floating fault signal contact in case of over temperature
- Set-point adjustable from the outside by a potentiometer (setting range 20° – 55°C (68° – 131°F))



#### Comfort controller:

- Switching hysteresis: 2 – 10 K preset to 5 K
- System alarm, individually configurable for 2 floating fault signal contacts
- Visualization 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 (CMC)





### Integrated cooling technology



#### Infinite possibilities

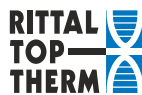
The TS8 modular enclosure system platform offers full compatibility in terms of baying techniques, lock systems and interior installation.

#### Quick exchange of the door and sidewall

The symmetrical design allows the climate control door to be easily changed.

#### Exchangeable in a flash

With all integrated cooling technology models, the cooling module can be quickly exchanged in just a few steps.



### Roof-mounted air conditioners



#### Flexible performance

Only 3 mounting cutouts for 6 different output categories in 28 design versions.

#### Targeted air routing in the enclosure

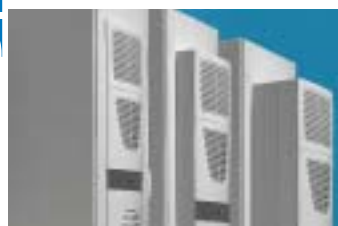
The internal air circulation is targeted and effective: The heated air is extracted centrally. Air exhaust occurs in the four corners, based on your specific requirements.

#### Flexible condensate management

All roof-mounted air conditioners with comfort controller are equipped with a condensate warning feature. A condensate pump and condensate evaporator may be integrated.



### Wall-mounted air conditioners



#### Wall-mounted air conditioners – Practical and stylish

The mounting cutout is selected depending on the mounting type: external, internal or partial internal mount. This makes optimum use of the available space.

#### Effective air routing inside the enclosure

The large distance between the air intake and outlet in the internal circuit makes wall-mounted air conditioners particularly effective. This ensures optimum air dissipation inside the enclosure, and air short-circuits are avoided.

#### Developed for easy servicing, inside and out

The assemblies, their arrangement and the divided internal case construction make all types of maintenance and servicing work much easier.

#### Benefits:

- Useful cooling capacity from 225 to 4000 W (768 to 13,661 BTU)
- Extensive control and monitoring features, even with the basic version
- Three-phase air conditioners support multiple voltages as standard
- Uniform, output-related, cross-system mounting

cutouts, to match TopTherm air/air heat exchangers

- Targeted, individual air routing
- No assembly work and low investment costs, due to the complete solution consisting of an enclosure and integrated air conditioner<sup>1)</sup>
- May be integrated directly into TS8 bayed enclosure suites<sup>1)</sup>

#### Important:

- Use a base/plinth of at least 100 mm (3.9") high to ensure unhindered air entry<sup>1)</sup>
- Avoid overloading the roof-plate by using stays (see TS8 system accessories)

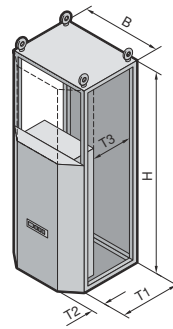
- Air intake and outlet openings in the internal and external circuit must not be blocked.

<sup>1)</sup> Only for integrated cooling technology.



# Climate Controlled Enclosures

## Enclosures, single-door, useful cooling capacity 1250/1510 W (4270/5150 BTU)



B = Width  
T = Depth

### Property rights:

German patent no. 196 09 794  
European patent no. 0 886 994  
with validity for ES, FR, GB, IT,  
NL, SE  
Taiwanese patent no. N 11 05 287  
US patent no. 6,134,109  
South Korean patent  
no. 3 295 093

### Configuration:

Enclosure frame with rear-wall, roof and climate control door, including TS8 hinges, door opening angle approximately 110°, painted, including pre-assembled cooling module, right door hinge, may be changed to opposite side, 4 eyebolts, pre-fitted, mounting panel, three-part gland panels, depth stay as shipping brace.



### Also required:

For correct functioning of the external circuit:  
Base/plinth, 100 or 200 mm (3.9 or 7.9") high.



### 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.

### Certifications,

see page 7.

### Detailed drawing,

see page 119.

### Performance diagrams,

available on the Internet,  
log onto [www.rittal-corp.com](http://www.rittal-corp.com).

Part No. SK <sup>1)</sup>	8687.100	8607.100	8687.840	8607.840	8887.150	8807.100	8887.140	8807.140
Voltage V, Hz	230, 50/60		400, 2~, 50/60		230, 50/60		400, 2~, 50/60	
Dimensions in mm (inches)	H	1800 (70.9)	2000 (78.7)	1800 (70.9)	2000 (78.7)	1800 (70.9)	2000 (78.7)	1800 (70.9)
	B	600 (23.6)	600 (23.6)	600 (23.6)	600 (23.6)	800 (31.5)	800 (31.5)	800 (31.5)
	T1	600 (23.6)	600 (23.6)	600 (23.6)	600 (23.6)	600 (23.6)	600 (23.6)	600 (23.6)
	T2	100 (3.9)	100 (3.9)	100 (3.9)	100 (3.9)	100 (3.9)	100 (3.9)	100 (3.9)
Maximum installation depth up to mounting panel in mm (inches)	T3	478 (18.8)						
Suitable for baying with TS8 modular enclosures in mm (inches)	T	600 (23.6)						
Useful cooling capacity $\dot{Q}_k$ to DIN 3168 in W (BTU)	L 35 L 35	1100/1250 (3756/4269)			1500/1510 (5123/5157)			
	L 35 L 50	820/1000 (2800/3412)			1065/1240 (3637/4235)			

Maximum rated current		3.2 A/3.8 A		1.9 A/2.2 A		4.0 A/4.5 A		2.3 A/2.6 A	
Starting current		11.0 A/12.0 A		6.3 A/6.9 A		9.0 A/10.0 A		5.2 A/5.7 A	
Pre-fuse T		10.0 A/10.0 A		6.0 A/6.0 A		10.0 A/10.0 A		6.0 A/6.0 A	
Power consumption P <sub>el</sub> to DIN 3168	L 35 L 35 L 35 L 50	525/630 W 605/725 W		540/650 W 625/750 W		650/750 W 750/850 W		670/780 W 780/880 W	
Refrigeration coefficient ε = Q <sub>K</sub> /P <sub>el</sub>	L 35 L 35	2.1				2.3			
Refrigerant		R134a, 675 g (24 oz)				R134a, 700 g (25 oz)			
Maximum allowable operating pressure		23 bar (334 psi)							
Temperature and setting range		+20°C to +55°C (68°F to 131°F)							
Ratings to EN 60 529/10.91	External circuit	IP 24 (NEMA 2)							
	Internal circuit	IP 54 (NEMA 12)							
Duty cycle		100 %							
Type of connection		Terminal strip							
Weight in kg (lbs)		155 (341.7)	163 (359.3)	158 (348.3)	166 (366.0)	182 (401.2)	192 (423.3)	185 (407.9)	195 (429.9)
Color		RAL 7035 (light gray) <sup>2)</sup>							
Air displacement of fans	External circuit	580 m³/h (341.4 cfm)				600 m³/h (353.1 cfm)			
	Internal circuit	420 m³/h (247.2 cfm)				480 m³/h (282.5 cfm)			
Temperature control		Internal thermostat (factory setting +35°C (95°F))							

<b>Also required</b>		PU							
Base/plinth components front/rear, 100 mm (3.9")	1 set	8601.600	8601.800						
Base/plinth trim, side, 100 mm (3.9")	1 set	8601.060							
Sidewalls	2	8186.235	8106.235	8186.235	8106.235	8186.235	8106.235	8186.235	8106.235

<sup>1)</sup> Delivery times available on request.

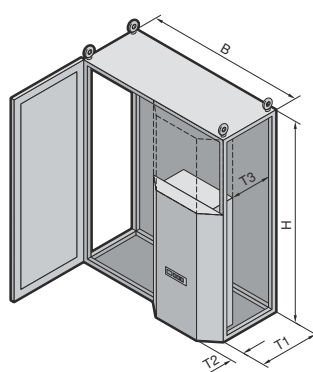
<sup>2)</sup> RAL 7032 (pebble gray) on request.

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



# Climate Controlled Enclosures

## Enclosures, two-door, useful cooling capacity 2000/2550 W (6865/8708 BTU)



### Property rights:

German patent no. 196 09 794  
European patent no. 0 886 994  
with validity for ES, FR, GB, IT,  
NL, SE  
Taiwanese patent no. N 11 05 287  
US patent no. 6,134,109  
South Korean patent  
no. 3 295 093

B = Width  
T = Depth

### Configuration:

Enclosure frame with rear-wall, roof and climate control door, including TS8 hinges, door opening angle approximately 110°, lockable door with standard hinges, painted, including pre-assembled cooling module, 4 eyebolts, pre-fitted, mounting panel, three-part gland panels, depth stays as shipping braces.



### Also required:

For correct functioning of the external circuit:  
Base/plinth, 100 or 200 mm (3.9 or 7.9") high.



### 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.

**Certifications,**  
see page 7.

**Detailed drawing,**  
see page 119.

**Performance diagrams,**  
available on the Internet,  
log onto [www.rittal-corp.com](http://www.rittal-corp.com).

Part No. SK <sup>1)</sup>		8287.170	8807.180	8207.170	8207.180	8807.260	8807.250
Device position		right	left	right	left	left	
Voltage V, Hz		230, 50/60				400, 3~, 50/60	
Dimensions in mm (inches)	H	1800 (70.9)	1800 (70.9)	2000 (78.7)		1800 (70.9)	2000 (78.7)
	B	1200 (47.2)	1200 (47.2)	1200 (47.2)		1200 (47.2)	1200 (47.2)
	T1	600 (23.6)	600 (23.6)	600 (23.6)		600 (23.6)	600 (23.6)
	T2	100 (3.9)	100 (3.9)	100 (3.9)		100 (3.9)	100 (3.9)
Maximum installation depth to mounting panel in mm (inches)	T3	445 (17.5)	445 (17.5)	445 (17.5)		415 (16.3)	415 (16.3)
Suitable for baying with TS8 modular enclosures in mm (inches)	T	600 (23.6)					
Useful cooling capacity $\dot{Q}_k$ to DIN 3168 in W (BTU)	L 35 L 35	2000/2010 (6830/6865)				2500/2550 (8538/8708)	
	L 35 L 50	1420/1650 (4850/5635)				1650/1750 (5635/5977)	

Maximum rated current		5.8 A/6.3 A		3.0 A/3.2 A	
Starting current		26.0 A/29.0 A		14.0 A/16.0 A	
Pre-fuse T		16.0 A/16.0 A		6.0 A/6.0 A	
Power consumption P <sub>el</sub> to DIN 3168	L 35 L 35 L 35 L 50	960/1070 W 1030/1180 W		1330/1640 W 1580/2000 W	
Refrigeration coefficient ε = Q <sub>k</sub> /P <sub>el</sub>	L 35 L 35	2.1		1.9	
Refrigerant		R134a, 925 g (32.6 oz)		R134a, 975 g (34.4 oz)	
Maximum allowable operating pressure		28 bar (406 psi)			
Temperature and setting range		+20°C to +55°C (68°F to 131°F)			
Rating to EN 60 529/10.91	External circuit	IP 24 (NEMA 2)			
	Internal circuit	IP 54 (NEMA 12)			
Duty cycle		100 %			
Type of connection		Terminal strip			
Weight in kg (lbs)		231 (509.2)	246 (542.3)	231 (509.2)	245 (540.1)
Color		RAL 7035 (light gray) <sup>2)</sup>			
Air displacement of fans	External circuit	630 m³/h (371 cfm)		700 m³/h (412 cfm)	
	Internal circuit	520 m³/h (306 cfm)		620 m³/h (365 cfm)	
Temperature control		Internal thermostat (factory setting +35°C (95°F))			

### Also required

PU

Base/plinth components front/rear, 100 mm (3.9")	1 set	8601.200			
Base/plinth trim, side, 100 mm (3.9")	1 set	8601.060			
Sidewalls	1 set	8186.235	8106.235	8186.235	8106.235

<sup>1)</sup> Delivery times available on request.

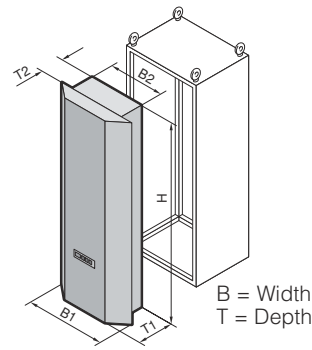
<sup>2)</sup> RAL 7032 (pebble gray) on request.

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



# Climate Control Doors

For 600 mm (23.6") wide TS8 modular enclosures, useful cooling capacity 1250/1680 W (4269/5738 BTU)



## Property rights:

German patent no. 196 09 794  
European patent no. 0 886 994  
with validity for ES, FR, GB, IT,  
NL, SE  
Taiwanese patent  
no. N 11 05 287  
US patent no. 6,134,109  
South Korean patent  
no. 0 299 406  
Japanese patent no. 3 295 093

## Configuration:

Climate control door unit with  
pre-fitted cooling module,  
including TS8 hinges, door  
opening angle approximately  
110°.

## Note:

Climate control doors for two-  
door TS8 modular enclosures  
see pages 29/30.



## Also required:

Base/plinth, 100 or 200 mm  
(3.9 or 7.9") high.



## Optionally available:

Automatic condensate  
evaporation.

## Certifications,

see pages 7/8.

## Detailed drawing,

see page 120.

## Performance diagrams,

available on the Internet,  
log onto [www.rittal-corp.com](http://www.rittal-corp.com).

Part No. SK with thermostat	3306.880 <sup>1)</sup>	3306.800 <sup>1)</sup>	3306.884 <sup>1)</sup>	3306.840 <sup>1)</sup>	3307.880 <sup>1)</sup>	3307.800 <sup>1)</sup>	3307.890 <sup>1)</sup>	3307.840
Part No. SK with microcontroller	3306.580 <sup>1)</sup>	3306.500 <sup>1)</sup>	3306.590 <sup>1)</sup>	3306.540 <sup>1)</sup>	3307.580 <sup>1)</sup>	3307.500 <sup>1)</sup>	3307.590 <sup>1)</sup>	3307.540 <sup>1)</sup>
Voltage V, Hz	230, 50/60		400, 2~, 50/60		230, 50/60		400, 2~, 50/60	
Dimensions in mm (inches)	H	1777 (70)	1977 (77.9)	1777 (70)	1977 (77.9)	1777 (70)	1977 (77.9)	1777 (77.9)
	B1	592 (23.3)	592 (23.3)	592 (23.3)	592 (23.3)	592 (23.3)	592 (23.3)	592 (23.3)
	B2	461 (18.1)	461 (18.1)	461 (18.1)	461 (18.1)	461 (18.1)	461 (18.1)	461 (18.1)
	T1	157 (6.2)	157 (6.2)	157 (6.2)	157 (6.2)	190 (7.5)	190 (7.5)	190 (7.5)
	T2	57 (2.2)	57 (2.2)	57 (2.2)	57 (2.2)	90 (3.5)	90 (3.5)	90 (3.5)
Dimensions to fit TS8 modular enclosures in mm (inches)	H	1800 (70.9)	2000 (78.7)	1800 (70.9)	2000 (78.7)	1800 (70.9)	2000 (78.7)	2000 (78.7)
	B	600 (23.6)	600 (23.6)	600 (23.6)	600 (23.6)	600 (23.6)	600 (23.6)	600 (23.6)
Useful cooling capacity $\dot{Q}_K$ to DIN 3168 in W (BTU)	L 35 L 35 L 35 L 50	1100/1250 (3756/4269) 820/1000 (2800/3415)			1500/1680 (5123/5738) 1110/1120 (3791/3825)			

Maximum rated current		3.2 A/3.8 A		1.9 A/2.2 A		4.2 A/4.8 A		2.4 A/2.8 A	
Starting current		11.0 A/12.0 A		6.3 A/6.9 A		22.0 A/24.0 A		12.7 A/13.8 A	
Pre-fuse T		10.0 A/10.0 A		6.0 A/6.0 A		16.0 A/16.0 A		10.0 A/10.0 A	
Power consumption P <sub>el</sub> to DIN 3168	L 35 L 35 L 35 L 50	525 W/630 W 605 W/725 W		540 W/650 W 625 W/750 W		560 W/710 W 670 W/840 W		570 W/725 W 680 W/860 W	
Refrigeration coefficient ε = Q <sub>K</sub> /P <sub>el</sub>	L 35 L 35	2.1							
Refrigerant		R134a, 675 g (23.8 oz)				R134a, 800 g (28.2 oz)			
Maximum allowable operating pressure		23 bar (334 psi)				26 bar (377 psi)			
Temperature and setting range		+20°C to +55°C (68°F to 131°F)							
Ratings to EN 60 529/10.91	External circuit	IP 24 (NEMA 2)							
	Internal circuit	IP 54 (NEMA 12)							
Duty cycle		100 %							
Type of connection		Terminal strip							
Weight in kg (lbs)		58 (127.9)	60 (132.2)	61 (134.5)	63 (138.9)	72 (158.7)		75 (165.3)	
Color		RAL 7035 (light gray) <sup>2)</sup>							
Air displacement of fans	External circuit	580 m³/h (341 cfm)				600 m³/h (353 cfm)			
	Internal circuit	420 m³/h (247 cfm)				480 m³/h (283 cfm)			
Temperature control		Internal thermostat or microcontroller control (factory setting +35°C (95°F))							
Accessories		PU							Page
Metal filters	1	3284.200						112	
Door-operated switch	1	4127.000						–	
Temperature indicator	1	3114.100						103	
Air diverter	1	3213.300				–		102	

<sup>1)</sup> Delivery times available on request.

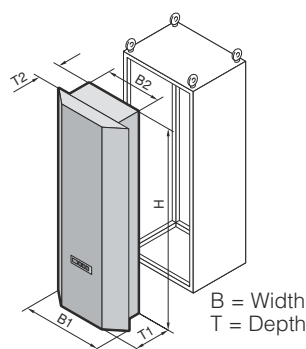
<sup>2)</sup> RAL 7032 (pebble gray) on request.

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



# Climate Control Doors

For 800 mm (31.5") wide TS8 modular enclosures, useful cooling capacity 1510 W (5150 BTU)



## Property rights:

German patent no. 196 09 794  
European patent no. 0 886 994  
with validity for ES, FR, GB, IT,  
NL, SE  
Taiwanese patent no. N 11 05 287  
US patent no. 6,134,109  
South Korean patent  
no. 0 299 406  
Japanese patent no. 3 295 093

## Configuration:

Climate control door unit with  
pre-fitted cooling module, in-  
cluding TS8 hinges, door open-  
ing angle approximately 110°.



## Also required:

Base/plinth, 100 or 200 mm  
(3.9 or 7.9") high.



## Optionally available:

Automatic condensate  
evaporation.

## Certifications,

see pages 7/8.

**Detailed drawing,**  
see page 120.

## Performance diagrams,

available on the Internet,  
log onto [www.rittal-corp.com](http://www.rittal-corp.com).

Part No. SK with thermostat	3308.880 <sup>1)</sup>	3308.800 <sup>1)</sup>	3308.884 <sup>1)</sup>	3308.840 <sup>1)</sup>
Part No. SK with microcontroller	3308.580 <sup>1)</sup>	3308.500	3308.590 <sup>1)</sup>	3308.540
Voltage V, Hz	230, 50/60		400, 2~, 50/60	
Dimensions in mm (inches)	H	1777 (70.0)	1977 (77.9)	1777 (70.0)
	B1	792 (31.2)	792 (31.2)	792 (31.2)
	B2	661 (26.2)	661 (26.2)	661 (26.2)
	T1	157 (6.2)	157 (6.2)	157 (6.2)
	T2	57 (2.2)	57 (2.2)	57 (2.2)
Dimensions to fit TS8 modular enclosures in mm (inches)	H	1800 (70.9)	2000 (78.7)	1800 (70.9)
	B	800 (31.5)	800 (31.5)	800 (31.5)
Useful cooling capacity $\dot{Q}_k$ to DIN 3168 in W (BTU)	L 35 L 35	1500/1510(5123/5157)		
	L 35 L 50	1065/1240 (3637/4235)		

Maximum rated current		4.0 A/4.5 A		2.3 A/2.6 A	
Starting current		9.0 A/10.0 A		5.2 A/5.7 A	
Pre-fuse T		10.0 A/10.0 A		6.0 A/6.0 A	
Power consumption P <sub>el</sub> to DIN 3168	L 35 L 35 L 35 L 50	650 W/750 W 750 W/850 W		670 W/780 W 780 W/880 W	
Refrigeration coefficient ε = Q <sub>k</sub> /P <sub>el</sub>	L 35 L 35	2.3			
Refrigerant		R134a, 700 g (24.7 oz)			
Maximum allowable operating pressure		23 bar (334 psi)			
Temperature and setting range		+20°C to +55°C (68°F to 131°F)			
Ratings to EN 60 529/10.91	External circuit	IP 24 (NEMA 2)			
	Internal circuit	IP 54 (NEMA 12)			
Duty cycle		100 %			
Type of connection		Terminal strip			
Weight in kg (lbs)		65 (143.3)	67 (147.7)	68 (149.9)	70 (154.3)
Color		RAL 7035 (light gray) <sup>2)</sup>			
Air displacement of fans	External circuit	600 m³/h (353 cfm)			
	Internal circuit	480 m³/h (283 cfm)			
Temperature control		Internal thermostat or microcontroller control (factory setting +35°C (95°F))			

Accessories	PU		Page
Metal filters	1	3288.200	112
Door-operated switch	1	4127.000	–
Temperature indicator	1	3114.100	103
Air diverter	1	Available on request.	–

<sup>1)</sup> Delivery times available on request.

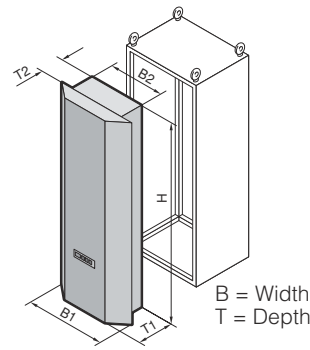
<sup>2)</sup> RAL 7032 (pebble gray) on request.

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



# Climate Control Doors

For 600 mm (23.6") wide TS8 modular enclosures, useful cooling capacity 2010/2550 W (6865/8709 BTU)



## Property rights:

German patent no. 196 09 794  
European patent no. 0 886 994  
with validity for ES, FR, GB, IT,  
NL, SE  
Taiwanese patent no. N 11 05 287  
US patent no. 6,134,109  
South Korean patent  
no. 0 299 406  
Japanese patent no. 3 295 093

## Configuration:

Climate control door unit with  
pre-fitted cooling module, in-  
cluding TS8 hinges, door open-  
ing angle approximately 110°.

## Note:

Climate control doors for two-  
door TS8 enclosures,  
see pages 29/30.



## Also required:

Base/plinth, 100 or 200 mm  
(3.9 or 7.9") high.



## Optionally available:

Automatic condensate  
evaporation.

## Certifications,

see pages 7/8.

## Detailed drawing,

see page 120.

## Performance diagrams,

available on the Internet,  
log onto [www.rittal-corp.com](http://www.rittal-corp.com).

Part No. SK with thermostat	3309.880 <sup>1)</sup>	3309.800	3309.884 <sup>1)</sup>	3309.840 <sup>1)</sup>	3310.880 <sup>1)</sup>	3310.800
Part No. SK with microcontroller	3309.580 <sup>1)</sup>	3309.500	3309.590 <sup>1)</sup>	3309.540	3310.580 <sup>1)</sup>	3310.500 <sup>1)</sup>
Voltage V, Hz	230, 50/60		400, 2~, 50/60		400, 3~, 50/60	
Dimensions in mm (inches)	H	1777 (70.0)	1977 (77.9)	1777 (70.0)	1977 (77.9)	1777 (77.9)
	B1	592 (23.3)	592 (23.3)	592 (23.3)	592 (23.3)	592 (23.3)
	B2	461 (18.1)	461 (18.1)	461 (18.1)	461 (18.1)	461 (18.1)
	T1	190 (7.5)	190 (7.5)	190 (7.5)	220 (8.7)	220 (8.7)
	T2	90 (3.5)	90 (3.5)	90 (3.5)	120 (4.7)	120 (4.7)
Dimensions to fit TS8 modular enclosures in mm (inches)	H	1800 (70.9)	2000 (78.7)	1800 (70.9)	2000 (78.7)	2000 (78.7)
	T	600 (23.6)	600 (23.6)	600 (23.6)	600 (23.6)	600 (23.6)
Useful cooling capacity $\dot{Q}_k$ to DIN 3168 in W (BTU)	L 35 L 35	2000/2010 (6830/6865)				2500/2550 (8538/8709)
	L 35 L 50	1420/1650 (4850/5635)				1650/1750 (4850/19,245)

Maximum rated current		5.8 A/6.3 A		3.4 A/3.6 A		3.0 A/3.2 A									
Starting current		26.0 A/29.0 A		15.0 A/16.5 A		14.0 A/16.0 A									
Pre-fuse T		16.0 A/16.0 A		10.0 A/10.0 A		6.0 A/6.0 A									
Power consumption P <sub>el</sub> to DIN 3168	L 35 L 35	960 W/1070 W		985 W/1100 W		1330 W/1640 W									
	L 35 L 50	1030 W/1180 W		1055 W/1210 W		1580 W/2000 W									
Cooling coefficient ε = Q̇ <sub>K</sub> /P <sub>el</sub>		L 35 L 35		2.1		1.9									
Refrigerant		R134a, 925 g (32.6 oz)				R134a, 975 g (34.4 oz)									
Maximum allowable operating pressure		28 bar (406 psi)													
Temperature and setting range		+20°C to +55°C (68°F to 131°F)													
Ratings to EN 60 529/10.91	External circuit	IP 24 (NEMA 2)													
	Internal circuit	IP 54 (NEMA 12)													
Duty cycle		100 %													
Type of connection		Terminal strip													
Weight in kg (lbs)		72 (158.7)		74 (163.1)		75 (165.3)		77 (169.8)		74 kg (163.1)		76 (167.6)			
Color		RAL 7035 (light gray) <sup>2)</sup>													
Air displacement of fans	External circuit	630 m³/h (371 cfm)								700 m³/h (412 cfm)					
	Internal circuit	520 m³/h (306 cfm)								620 m³/h (365 cfm)					
Temperature control		Internal thermostat or microcontroller control (factory setting +35°C (95°F))													
Accessories		PU												Page	
Metal filters		1		3284.200								112			
Door-operated switch		1		4127.000								–			
Temperature indicator		1		3114.100								103			

<sup>1)</sup> Delivery times available on request.

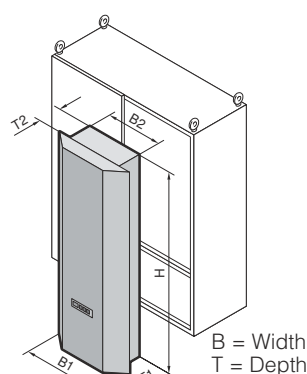
<sup>2)</sup> RAL 7032 (pebble gray) on request.

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



# Climate Control Doors

For 1200 mm (47.2") wide TS8 modular enclosure, useful cooling capacity 1250/1680 W (4269/5738 BTU)



## Property rights:

German patent no. 196 09 794  
European patent no. 0 886 994  
with validity for ES, FR, GB, IT,  
NL, SE  
Taiwanese patent no. N 11 05 287  
US patent no. 6,134,109  
South Korean patent  
no. 0 299 406  
Japanese patent no. 3 295 093

## Configuration:

Climate control door unit with pre-fitted cooling module, including TS8 hinges, door opening angle approximately 110°.

## Note:

With the device positioned on the right, one pack consists of a climate control door for installing in the right side of the enclosure, and a lockable door for the left.

With the device positioned on the left, one pack consists of a climate control door for installing on the left side of the enclosure. The existing lockable door on the right may be used.

Climate control doors for single-door TS8 modular enclosures, see pages 26 – 30.



## Also required:

Base/plinth, 100 or 200 mm (3.9 or 7.9") high.



## Optionally available:

Automatic condensate evaporation.

## Certifications,

see page 8.

## Detailed drawing,

see page 120.

## Performance diagrams,

available on the Internet, log onto [www.rittal-corp.com](http://www.rittal-corp.com).

Part No. SK with thermostat <sup>1)</sup>	left	3306.270	3306.230	3306.470	3306.430	3307.270	3307.230	3307.470	3307.430
	right	3306.250	3306.210	3306.450	3306.410	3307.250	3307.210	3307.450	3307.410
Part No. SK with microcontroller <sup>1)</sup>	left	3306.570	3306.530	3306.670	3306.630	3307.570	3307.530	3307.670	3307.630
	right	3306.550	3306.510	3306.650	3306.610	3307.550	3307.510	3307.650	3307.610
Voltage V, Hz		230, 50/60		400, 2~, 50/60		230, 50/60		400, 2~, 50/60	
Dimensions in mm (inches)	H	1777 (70)	1977 (77.9)	1777 (70)	1977 (77.9)	1777 (70)	1977 (77.9)	1777 (70.0)	1977 (77.9)
	B1	592 (23.3)	592 (23.3)	592 (23.3)	592 (23.3)	592 (23.3)	592 (23.3)	592 (23.3)	592 (23.3)
	B2	461 (18.1)	461 (18.1)	461 (18.1)	461 (18.1)	461 (18.1)	461 (18.1)	461 (18.1)	461 (18.1)
	T1	157 (6.2)	157 (6.2)	157 (6.2)	157 (6.2)	190 (7.5)	190 (7.5)	190 (7.5)	190 (7.5)
	T2	57 (2.2)	57 (2.2)	57 (2.2)	57 (2.2)	90 (3.5)	90 (3.5)	90 (3.5)	90 (3.5)
Dimensions to fit TS8 modular enclosures in mm (inches)	H	1800 (70.9)	2000 (78.7)	1800 (70.9)	2000 (78.7)	1800 (70.9)	2000 (78.7)	1800 (70.9)	2000 (78.7)
	B	1200 (47.2)	1200 (47.2)	1200 (47.2)	1200 (47.2)	1200 (47.2)	1200 (47.2)	1200 (47.2)	1200 (47.2)
Useful cooling capacity $\dot{Q}_K$ to DIN 3168 in W (BTU)	L 35 L 35	1100/1250 (3756/4269)				1500/1680 (5123/5738)			
	L 35 L 50	820/1000 (2800/3412)				1110 W/1120 W (3791/3825)			

Maximum rated current		3.2 A/3.8 A		1.9 A/2.2 A		4.2 A/4.8 A		2.4 A/2.8 A	
Starting current		11.0 A/12.0 A		6.3 A/6.9 A		22.0 A/24.0 A		12.7 A/13.8 A	
Pre-fuse T		10.0 A/10.0 A		6.0 A/6.0 A		16.0 A/16.0 A		10.0 A/10.0 A	
Power consumption P <sub>el</sub> to DIN 3168	L 35 L 35 L 35 L 50	525 W/630 W 605 W/725 W		540 W/650 W 625 W/750 W		560 W/710 W 670 W/840 W		570 W/725 W 680 W/860 W	
Cooling coefficient ε = Q̇ <sub>K</sub> /P <sub>el</sub>		L 35 L 35		2.1					
Refrigerant		R134a, 675 g (23.8 oz)				R134a, 800 g (28.2 oz)			
Maximum allowable operating pressure		23 bar (334 psi)				26 bar (377 psi)			
Temperature and setting range		+20°C to +55°C (68°F to 131°F)							
Ratings to EN 60 529/10.91	External circuit	IP 24 (NEMA 2)							
	Internal circuit	IP 54 (NEMA 12)							
Duty cycle		100 %							
Type of connection		Terminal strip							
Weight in kg (lbs)		58 (127.9)	60 (132.2)	61 (134.5)	63 kg (138.9)	72 (158.7)		75 (165.3)	
Color		RAL 7035 (light gray) <sup>2)</sup>							
Air displacement of fans	External circuit	580 m³/h (341 cfm)				600 m³/h (353 cfm)			
	Internal circuit	420 m³/h (247 cfm)				480 m³/h (283 cfm)			
Temperature control		Internal thermostat or microcontroller control (factory setting +35°C (95°F))							

Accessories	PU		Page
Metal filters	1	3284.200	112
Door-operated switch	1	4127.000	–
Temperature indicator	1	3114.100	103
Air diverter	1	3213.300	102

<sup>1)</sup> Delivery times on request. <sup>2)</sup> RAL 7032 (pebble gray) on request. Special voltages available on request. Technical modifications reserved.

Accessories Page 100

Climate Control

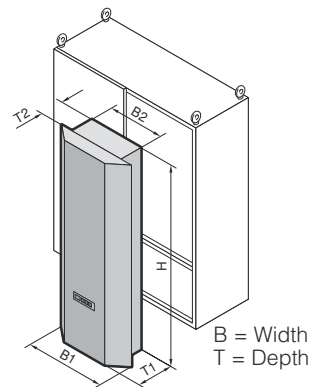
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4.1

Climate Control Doors



# Climate Control Doors

For 1200 mm (47.2") wide TS8 modular enclosures, useful cooling capacity 2010/2550 W (6865/8708 BTU)



## Property rights:

German patent no. 196 09 794  
European patent no. 0 886 994  
with validity for ES, FR, GB, IT, NL, SE  
Taiwanese patent no. N 11 05 287  
US patent no. 6,134,109  
South Korean patent  
no. 0 299 406  
Japanese patent no. 3 295 093

## Configuration:

Climate control door unit with pre-fitted cooling module, including TS8 hinges, door opening angle approximately 110°.

## Note:

With the device positioned on the right, one pack consists of a climate control door for installing in the right side of the enclosure, and a lockable door for the left.

With the device positioned on the left, one pack consists of a climate control door for installing on the left side of the enclosure. The existing lockable door on the right may be used.

Climate control doors for single-door TS8 modular enclosures, see pages 26 – 30.



## Also required:

Base/plinth, 100 or 200 mm (3.9 or 7.9") high.



## Optionally available:

Automatic condensate evaporation.

## Certifications,

see page 8.

## Detailed drawing,

see page 120.

## Performance diagrams,

available on the Internet, log onto [www.rittal-corp.com](http://www.rittal-corp.com).

Part No. SK with thermostat <sup>1)</sup>	left	3309.210	3309.140	3309.410	3309.440	3310.150	3310.130
Part No.	right	3309.170	3309.120	3309.470	3309.420	3310.250	3310.230
Part No. SK with microcontroller <sup>1)</sup>	left	3309.510	3309.530	3309.610	3309.640	3310.550	3310.530
Part No.	right	3309.570	3309.520	3309.670	3309.620	3310.650	3310.630
Voltage V, Hz		230, 50/60		400, 2~, 50/60		400, 3~, 50/60	
Dimensions in mm (inches)	H	1777 (70)	1977 (77.9)	1777 (70)	1977 (77.9)	1777 (70.0)	1977 (77.9)
	B1	592 (23.3)	592 (23.3)	592 (23.3)	592 (23.3)	592 (23.3)	592 (23.3)
	B2	461 (18.1)	461 (18.1)	461 (18.1)	461 (18.1)	461 (18.1)	461 (18.1)
	T1	190 (7.5)	190 (7.5)	190 (7.5)	190 (7.5)	220 (8.7)	220 (8.7)
	T2	90 (3.5)	90 (3.5)	90 (3.5)	90 (3.5)	120 (4.7)	120 (4.7)
Dimensions to fit TS8 modular enclosures in mm (inches)	H	1800 (70.9)	2000 (78.7)	1800 (70.9)	2000 (78.7)	1800 (70.9)	2000 (78.7)
	B	1200 (47.2)	1200 (47.2)	1200 (47.2)	1200 (47.2)	1200 (47.2)	1200 (47.2)
Useful cooling capacity $\dot{Q}_k$ to DIN 3168 in W (BTU)	L 35 L 35	2000/2010 (6830/6865)				2500/2550 (8538/8708)	
	L 35 L 50	1420/1650 (4850/5635)				1650/1750 (5635/5977)	

Maximum rated current		5.8 A/6.3 A		3.4 A/3.6 A		3.0 A/3.2 A	
Starting current		26.0 A/29.0 A		15.0 A/16.5 A		14.0 A/16.0 A	
Pre-fuse T		16.0 A/16.0 A		10.0 A/10.0 A		6.0 A/6.0 A	
Power consumption P <sub>el</sub> to DIN 3168	L 35 L 35	960 W/1070 W		985 W/1100 W		1330 W/1640 W	
	L 35 L 50	1030 W/1180 W		1055 W/1210 W		1580 W/2000 W	
Cooling coefficient ε = Q̇ <sub>K</sub> /P <sub>el</sub>		L 35 L 35		2.1		1.9	
Refrigerant		R134a, 925 g (32.6 oz)				R134a, 975 g (34.4 oz)	
Maximum allowable operating pressure		28 bar (406 psi)					
Temperature and setting range		+20°C to +55°C (68°F to 131°F)					
Ratings to EN 60 529/10.91	External circuit	IP 24 (NEMA 2)					
	Internal circuit	IP 54 (NEMA 12)					
Duty cycle		100 %					
Type of connection		Terminal strip					
Weight in kg (lbs)		72 (158.7)	74 (163.1)	75 (165.3)	77 (169.8)	74 (163.1)	76 (167.6)
Color		RAL 7035 (light gray) <sup>2)</sup>					
Air displacement of fans	External circuit	630 m³/h (371 cfm)				700 m³/h (412 cfm)	
	Internal circuit	520 m³/h (306 cfm)				620 m³/h (365 cfm)	
Temperature control		Internal thermostat or microcontroller control (factory setting +35°C (95°F))					
Accessories		PU					Page
Metal filters		1	3284.200				112
Door-operated switch		1	4127.000				–
Temperature indicator		1	3114.100				103

<sup>1)</sup> Delivery times on request.

<sup>2)</sup> RAL 7032 (pebble gray) on request.

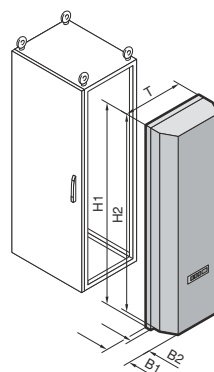
Special voltages available on request. We reserve the right to make technical modifications.

**Accessories** Page 100



# Climate Control Sidewalls

For 600 mm (23.6") deep TS8 modular enclosures, useful cooling capacity 1200/1450 W (4098/4952 BTU)



B = Width  
T = Depth

**Configuration:**  
Climate control sidewall with pre-fitted cooling module.



## Also required:

Base/plinth, 100 or 200 mm (3.9 or 7.9") high.



## 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.

**Certifications,**  
see page 8.

**Performance diagrams,**  
available on the Internet,  
log onto [www.rittal-corp.com](http://www.rittal-corp.com).

Part No. SK		3331.116	3331.316	3331.140 <sup>1)</sup>	3331.340 <sup>1)</sup>	3331.216 <sup>1)</sup>	3331.416	3331.240 <sup>1)</sup>	3331.440 <sup>1)</sup>
Voltage V, Hz		230, 50/60		400, 2~, 50/60		230, 50/60		400, 2~, 50/60	
Dimensions in mm (inches)	H1	1797 (70.7)	1997 (78.6)	1797 (70.7)	1997 (78.6)	1797 (70.7)	1997 (78.6)	1797 (70.7)	1997 (78.6)
	H2	1782 (70.2)	1982 (78.1)	1782 (70.2)	1982 (78.1)	1782 (70.2)	1982 (78.1)	1782 (70.2)	1982 (78.1)
	B1	171 (6.7)	171 (6.7)	171 (6.7)	171 (6.7)	171 (6.7)	171 (6.7)	171 (6.7)	171 (6.7)
	B2	157 (6.2)	157 (6.2)	157 (6.2)	157 (6.2)	157 (6.2)	157 (6.2)	157 (6.2)	157 (6.2)
	T	562 (22.1)	562 (22.1)	562 (22.1)	562 (22.1)	562 (22.1)	562 (22.1)	562 (22.1)	562 (22.1)
Dimensions to fit TS8 modular enclosures in mm (inches)	H	1800 (70.9)	2000 (78.7)	1800 (70.9)	2000 (78.7)	1800 (70.9)	2000 (78.7)	1800 (70.9)	2000 (78.7)
	T	600 (23.6)	600 (23.6)	600 (23.6)	600 (23.6)	600 (23.6)	600 (23.6)	600 (23.6)	600 (23.6)
<b>Useful cooling capacity <math>\dot{Q}_k</math> to DIN 3168 in W (BTU)</b>		<b>L 35 L 35</b>	<b>L 35 L 50</b>	<b>1100/1200 (3756/4098)</b>		<b>1400/1450 (4781/4952)</b>		<b>1010/1060 (3449/3620)</b>	

Maximum rated current		4.0 A/4.6 A		2.3 A/2.7 A		4.0 A/4.6 A		2.3 A/2.7 A			
Starting 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 <sub>el</sub> to DIN 3168		L 35 L 35 L 35 L 50		670 W/850 W 800 W/1000 W		690 W/870 W 820 W/1020 W		710 W/910 W 810 W/1030 W		725 W/930 W 830 W/1050 W	
Cooling coefficient ε = Q <sub>K</sub> /P <sub>el</sub>		L 35 L 35		1.6				2.0		1.9	
Refrigerant		R134a, 825 g (29.1 oz)						R134a, 875 g (30.9 oz)			
Maximum allowable operating pressure		25 bar (363 psi)						24 bar (348 psi)			
Temperature and setting range		+20°C to +50°C (68°F to 122°F)									
Ratings to EN 60 529/10.91		External circuit		IP 34 (NEMA 2)							
		Internal circuit		IP 54 (NEMA 12)							
Duty cycle		100 %									
Type of connection		Terminal strip									
Weight in kg (lbs)		58 (127.9)		62 (136.7)		58 (127.9)		62 (136.7)			
Color		RAL 7035 (light gray) <sup>2)</sup>									
Air displacement of fans		External circuit		550 m³/h (324 cfm)							
		Internal circuit		275 m³/h (162 cfm)							
Temperature control		Internal thermostat (factory setting +35°C (95°F))									

Accessories	PU		Page
Metal filters	1	3289.200	112
Door-operated switch	1	4127.000	–
Temperature indicator	1	3114.100	103
Air diverter	1	3213.300	102

<sup>1)</sup> Delivery times available on request.

<sup>2)</sup> RAL 7032 (pebble gray) on request.

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

Accessories Page 100

Climate Control

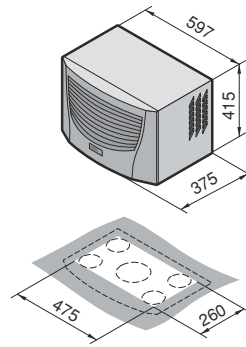
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4.1

Climate Control Sidewalls



# Roof-Mounted Air Conditioners

Useful cooling capacity 510/810 W (1742/2766 BTU)



## Property rights:

German registered design  
no. 402 02 324  
German registered design  
no. 402 02 325



## Configuration:

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

## Note:

Air conditioners with comfort  
controller may be integrated into  
a superordinate remote monitor-  
ing system with an optional  
interface board **SK 3124.200**  
(RS 232, RS 485, RS 422 and  
PLC interface).



## Accessories:

Roof plate for TS8 modular  
enclosure with mounting cutout,  
see page 107.



## Optionally available:

With automatic condensate  
evaporation.

## Certifications,

see pages 9/10.

## Detailed drawing,

see page 121.

## Performance diagrams,

available on the Internet,  
log onto [www.rittal-corp.com](http://www.rittal-corp.com).

<b>Part No. SK with basic controller, RAL 7035 (light gray)</b>	<b>3382.100</b>	<b>3382.110</b>	<b>3359.100</b>	<b>3359.110</b>	<b>3359.140</b>
<b>Part No. SK with comfort controller, RAL 7035 (light gray)</b>	<b>3382.500</b>	<b>3382.510</b>	<b>3359.500</b>	<b>3359.510</b>	<b>3359.540</b>
<b>Part No. SK with basic controller, stainless steel<sup>1)</sup></b>	<b>3382.200</b>	<b>3382.210</b>	<b>3359.200</b>	<b>3359.210</b>	<b>3359.240</b>
<b>Part No. SK with comfort controller, stainless steel<sup>1)</sup></b>	<b>3382.600</b>	<b>3382.610</b>	<b>3359.600</b>	<b>3359.610</b>	<b>3359.640</b>
Voltage V, Hz	230, 50/60	115, 50/60	230, 50/60	115, 50/60	400, 2~, 50/60
Dimensions in mm (inches)	H x W x D 415 x 597 x 375 (16.3 x 23.5 x 14.8)				
<b>Useful cooling capacity <math>\dot{Q}_K</math> to DIN 3168 in W (BTU)</b>	<b>L 35 L 35</b>	<b>500/510 (1708/1742)</b>	<b>750/810 (2561/2766)</b>		
	<b>L 35 L 50</b>	<b>270/370 (922/1264)</b>	<b>545/590 (1861/2015)</b>		

To order air conditioners with integrated condensate evaporators, add .XX1 to the part number, ie. XXXX.XX1.

Rated current maximum		2.7 A/2.9 A	5.5 A/6.0 A	3.0 A/3.9 A	6.0 A/7.8 A	1.7 A/2.2 A
Starting 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/10.0 A	10.0 A/10.0 A	16.0 A/16.0 A	10.0 A/10.0 A
Power consumption P <sub>el</sub> to DIN 3168	L 35 L 35 L 35 L 50	360 W/410 W 410 W/450 W	370 W/420 W 420 W/470 W	410 W/520 W 490 W/600 W	420 W/535 W 500 W/615 W	
Cooling coefficient ε = Q̇ <sub>K</sub> /P <sub>el</sub>	L 35 L 35	1.4		1.8		
Refrigerant		R134a, 250 g (8.8 oz)		R134a, 300 g (10.6 oz)		
Maximum allowable operating pressure		25 bar (363 psi)				
Temperature and setting range		+20°C to +55°C (68°F to 131°F)				
Ratings to EN 60 529/10.91	External circuit	IP 34 (NEMA 2)				
	Internal circuit	IP 54 (NEMA 12)				
Duty cycle		100 %				
Type of connection		Plug-in terminal strip				
Weight in kg (lb)		30 (66.1)	35 (77.1)	32 (70.5)	37 (81.5)	
Air displacement of fans (unimpeded air flow)	External circuit	910 m³/h (536 cfm)				
	Internal circuit	440 m³/h (259 cfm)				
Temperature control		Basic or comfort controller (factory setting +35°C (95°F))				

Accessories	PU		Page
Filter mats	3	3286.500	111
Metal filters	1	3286.510	112
Quick-change frame	1	3286.700	108
Door-operated switch	1	4127.000	–
SK bus system for comfort controller	1	3124.100	106
RiDiag II including cables for comfort controller	1	3159.100	–
Interface card for comfort controller	1	3124.200	105
Air ducting system	1	3286.870	101
Cover stoppers for interior air outlet	2	3286.780	101
Condensate hose	1	3301.612	108

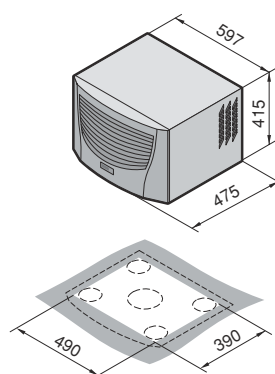
<sup>1)</sup> Delivery times on request.

Special voltages available on request. Technical modifications reserved.



# Roof-Mounted Air Conditioners

Useful cooling capacity 1080 W (3688 BTU)



## Property rights:

German registered design  
no. 402 02 324  
German registered design  
no. 402 02 325



## Configuration:

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

## Note:

Integration of the air conditioners with comfort controller, into a superordinate remote monitoring system, can be achieved with an optional interface board **SK 3124.200** (RS 232, RS 485, RS 422 and PLC interface).



## Accessories:

Roof plate for TS8 modular enclosure with mounting cutout, see page 107.



## Optionally available:

With automatic condensate evaporation.

## Certifications,

see pages 9/10.

**Detailed drawing,**  
see page 121.

**Performance diagrams,**  
available on the Internet,  
log onto [www.rittal-corp.com](http://www.rittal-corp.com).

<b>Part No. SK with basic controller, RAL 7035 (light gray)</b>	<b>3383.100</b>	<b>3383.110</b>	<b>3383.140</b>
<b>Part No. SK with comfort controller, RAL 7035 (light gray)</b>	<b>3383.500</b>	<b>3383.510</b>	<b>3383.540</b>
<b>Part No. SK with basic controller, stainless steel<sup>1)</sup></b>	<b>3383.200</b>	<b>3383.210</b>	<b>3383.240</b>
<b>Part No. SK with comfort controller, stainless steel<sup>1)</sup></b>	<b>3383.600</b>	<b>3383.610</b>	<b>3383.640</b>
Voltage V, Hz	230, 50/60	115, 50/60	400, 2~, 50/60
Dimensions in mm (inches)	H x W x D	415 x 597 x 475 (16.3 x 23.5 x 18.7)	
<b>Useful cooling capacity <math>\dot{Q}_K</math> to DIN 3168 in W (BTU)</b>	<b>L 35 L 35 L 35 L 50</b>	<b>1000/1080 (3415/3688) 760/820 (2596/2800)</b>	

**To order air conditioners with integrated condensate evaporators, add .XX1 to the part number, ie. XXXX.XX1.**

Rated current maximum		4.3 A/4.5 A	8.3 A/8.7 A	2.4 A/2.4 A
Starting 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/10.0 A	16.0 A/16.0 A	10.0 A/10.0 A
Power consumption P <sub>el</sub> to DIN 3168	L 35 L 35	550 W/650 W	580 W/660 W	
	L 35 L 50	660 W/750 W	670 W/755 W	
Cooling coefficient ε = Q̇ <sub>K</sub> /P <sub>el</sub>		L 35 L 35	1.8	
Refrigerant		R134a, 500 g (17.6 oz)		
Maximum allowable operating pressure		25 bar (363 psi)		
Temperature and setting range		+20°C to +55°C (68°F to 131°F)		
Ratings to EN 60 529/10.91	External circuit	IP 34 (NEMA 2)		
	Internal circuit	IP 54 (NEMA 12)		
Duty cycle		100 %		
Type of connection		Plug-in terminal strip		
Weight in kg (lb)		40 (88.2)	46 (101.4)	46 (101.4)
Air displacement of fans	External circuit	1760 m³/h (1036 cfm)		
	Internal circuit	440 m³/h (259 cfm)		
Temperature control		Basic or comfort controller (factory setting +35°C (95°F))		

<b>Accessories</b>	<b>PU</b>		<b>Page</b>
Filter mats	3	3286.500	111
Metal filters	1	3286.510	112
Quick-change frame	1	3286.800	108
Door-operated switch	1	4127.000	–
SK bus system for comfort controller	1	3124.100	106
RiDiag II including cables for comfort controller	1	3159.100	–
Interface card for comfort controller	1	3124.200	105
Air ducting system	1	3286.870	101
Cover stoppers for interior air outlet	2	3286.880	101
Condensate hose	1	3301.612	108

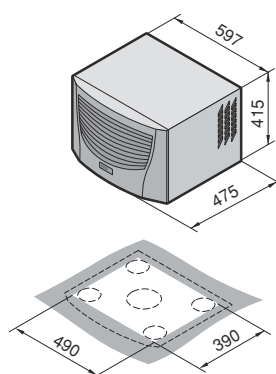
<sup>1)</sup> Delivery times on request.

Special voltages available on request. Technical modifications reserved.



# Roof-Mounted Air Conditioners

Useful cooling capacity 1200 W (4098 BTU)



## Property rights:

German registered design  
no. 402 02 324  
German registered design  
no. 402 02 325



**Designed for office applications.** Low noise level (considerably quieter than air conditioners for industrial applications).

## Configuration:

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

## Note:

Integration of the air conditioners with comfort controller, into a superordinate remote monitoring system, can be achieved with an optional interface board **SK 3124.200** (RS 232, RS 485, RS 422 and PLC interface).



## Accessories:

Roof plate for TS8 modular enclosures with mounting cutout, see page 107.

## Certifications,

see page 9.

**Detailed drawing,**  
see page 121.

**Performance diagrams,**  
available on the Internet,  
log onto [www.rittal-corp.com](http://www.rittal-corp.com).

Part No. SK with comfort controller		3273.500	3273.515 <sup>1)</sup>
Voltage V, Hz		230, 50/60	115, 50/60
Dimensions in mm (inches)		H x W x D 415 x 597 x 475 (16.3 x 23.5 x 18.7)	
Useful cooling capacity $\dot{Q}_k$ to DIN 3168 in W (BTU)		L 35 L 35 1100/1200 (3756/4098) L 35 L 50 850/870 (2903/2971)	
Rated current maximum		5.2 A/5.4 A	11.0 A/11.5 A
Starting current		15.5 A/16.5 A	32.0 A/35.0 A
Pre-fuse T		10.0 A/10.0 A	20.0 A/20.0 A
Power consumption $P_{el}$ to DIN 3168		L 35 L 35 890 W/910 W L 35 L 50 960 W/1100 W	920 W/940 W 990 W/1140 W
Cooling coefficient $\epsilon = \dot{Q}_k/P_{el}$		L 35 L 35 1.2	
Refrigerant		R134a, 700 g (24.7 oz)	
Maximum allowable operating pressure		25 bar (363 psi)	
Temperature and setting range		+20°C to +55°C (68°F to 131°F)	
Ratings to EN 60 529/10.91	External circuit	IP 34 (NEMA 2)	
	Internal circuit	IP 54 (NEMA 12) <sup>2)</sup>	
Duty cycle		100 %	
Type of connection		Plug-in terminal strip	
Weight in kg (lb)		42 (92.6)	47 (103.6)
Color		RAL 7035 (light gray)	
Air displacement of fans	External circuit	1760 m³/h (1036 cfm)	
	Internal circuit	440 m³/h (259 cfm)	
Temperature control		Basic or comfort controller (factory setting +35°C (95°F))	
Accessories		PU	Page
Filter mats	3	3286.100	111
Metal filters	1	3286.210	112
Door-operated switch	1	4127.000	–
SK bus system for comfort controller	1	3124.100	106
RiDiag II including cables for comfort controller	1	3159.100	–
Interface card for comfort controller	1	3124.200	105
Air-ducting system	1	3286.870	101
Cover stoppers for interior air outlet	2	3286.980	101
Condensate hose	1	3301.612	108

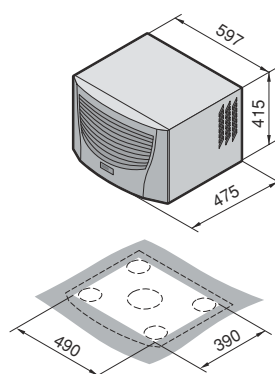
<sup>1)</sup> Delivery times available on request.

<sup>2)</sup> In order to avoid increased condensation, we recommend enclosures with a ratings of at least IP 54 (NEMA 12). Special voltages available on request. We reserve the right to make technical modifications.



# Roof-Mounted Air Conditioners

Useful cooling capacity 1520/2130 W (5191/7274 BTU)



## Property rights:

German registered design  
no. 402 02 324  
German registered design  
no. 402 02 325



## Configuration:

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

## Note:

Integration of the air conditioners with comfort controller, into a superordinate remote monitoring system, can be achieved with an optional interface board **SK 3124.200** (RS 232, RS 485, RS 422 and PLC interface).



## Accessories:

Roof plate for TS8 modular enclosure with mounting cutout, see page 107.



## Optionally available:

With automatic condensate evaporation.

## Certifications,

see pages 9/10.

**Detailed drawing,**  
see page 121.

**Performance diagrams,**  
available on the Internet,  
log onto [www.rittal-corp.com](http://www.rittal-corp.com).

<b>Part No. SK with basic controller, RAL 7035 (light gray)</b>	<b>3384.100</b>	<b>3384.110</b>	<b>3384.140</b>	<b>3385.100</b>	<b>3385.110</b>	<b>3385.140</b>
<b>Part No. SK with comfort controller, RAL 7035 (light gray)</b>	<b>3384.500</b>	<b>3384.510</b>	<b>3384.540</b>	<b>3385.500</b>	<b>3385.510</b>	<b>3385.540</b>
<b>Part No. SK with basic controller, stainless steel<sup>1)</sup></b>	<b>3384.200</b>	<b>3384.210</b>	<b>3384.240</b>	<b>3385.200</b>	<b>3385.210</b>	<b>3385.240</b>
<b>Part No. SK with comfort controller, stainless steel<sup>1)</sup></b>	<b>3384.600</b>	<b>3384.610</b>	<b>3384.640</b>	<b>3385.600</b>	<b>3385.610</b>	<b>3385.640</b>
Voltage V, Hz	230, 50/60	115, 50/60	400, 2~, 50/60	230, 50/60	115, 50/60	400, 2~, 50/60
Dimensions in mm (inches)	H x W x D 415 x 597 x 475 (16.3 x 23.5 x 18.7)			415 x 597 x 475 (16.3 x 23.5 x 18.7)		
<b>Useful cooling capacity <math>\dot{Q}_K</math> to DIN 3168 in W (BTU)</b>	<b>L 35 L 35</b>	<b>1500/1520 (5123/5191)</b>		<b>2000/2130 (6830/7274)</b>		
	<b>L 35 L 50</b>	<b>1100/1210 (3757/4132)</b>		<b>1570/1670 (5362/5703)</b>		

**To order air conditioners with integrated condensate evaporators, add .XX1 to the part number, ie. XXXX.XX1.**

Rated current maximum		5.7 A/6.8 A	12.5 A/14.1 A	3.4 A/4.0 A	5.7 A/6.6 A	13.0 A/14.2 A	3.3 A/3.8 A
Starting 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/10.0 A	20.0 A/20.0 A	10.0 A/10.0 A	10.0 A/10.0 A	20.0 A/20.0 A	10.0 A/10.0 A
Power consumption P <sub>el</sub> to DIN 3168	L 35 L 35	815 W/930 W	850 W/950 W		1000 W/1175 W	1050 W/1250 W	
	L 35 L 50	950 W/1090 W	1000 W/1150 W		1100 W/1310 W	1160 W/1380 W	
Cooling coefficient ε = Q̇ <sub>K</sub> /P <sub>el</sub>	L 35 L 35	1.8			2.0		
Refrigerant		R134a, 500 g (17.6 oz)			R134a, 950 g (33.5 oz)		
Maximum allowable operating pressure		25 bar (363 psi)					
Temperature and setting range		+20°C to +55°C (68°F to 131°F)					
Ratings to EN 60 529/10.91	External circuit	IP 34 (NEMA 2)					
	Internal circuit	IP 54 (NEMA 12)					
Duty cycle		100 %					
Type of connection		Plug-in terminal strip					
Weight in kg (lb)		41 (90.3)	47 (103.6)	47 (103.6)	42 (92.6)	48 (105.8)	48 (105.8)
Air displacement of fans	External circuit	1760 m³/h (1036 cfm)			1820 m³/h (1071 cfm)		
	Internal circuit	470 m³/h (277 cfm)					
Temperature control		Basic or comfort controller (factory setting +35°C (95°F))					

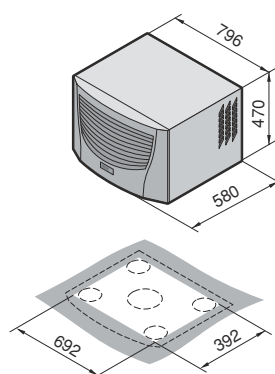
Accessories	PU		Page
Filter mats	3	3286.500	111
Metal filters	1	3286.510	112
Quick-change frame	1	3286.800	108
Door-operated switch	1	4127.000	–
SK bus system for comfort controller	1	3124.100	106
RiDiag II including cables for comfort controller	1	3159.100	–
Interface card for comfort controller	1	3124.200	105
Air ducting system	1	3286.870	101
Cover stoppers for interior air outlet	2	3286.880	101
Condensate hose	1	3301.612	108

<sup>1)</sup> Delivery times available on request.  
Special voltages available on request. We reserve the right to make technical modifications.



# Roof-Mounted Air Conditioners

Useful cooling capacity 3300/4200 W (11,270/14,344 BTU)



## Property rights:

German registered design  
no. 402 02 324  
German registered design  
no. 402 02 325



## Configuration:

Fully wired ready for connection, including drilling template, eyebolt and assembly parts.

## Note:

Integration of the air conditioners with comfort controller, into a superordinate remote monitoring system, can be achieved with an optional interface board **SK 3124.200** (RS 232, RS 485, RS 422 and PLC interface).



## Accessories:

Roof plate for TS8 modular enclosures with mounting cutout, see page 107.



## Optionally available:

With automatic condensate evaporation.

## Certifications,

see pages 9/10.

**Detailed drawing,**  
see page 121.

**Performance diagrams,**  
available on the Internet,  
log onto [www.rittal-corp.com](http://www.rittal-corp.com).

<b>Part No. SK with basic controller, RAL 7035 (light gray)</b>	<b>3386.140</b>	<b>3387.140</b>
<b>Part No. SK with comfort controller, RAL 7035 (light gray)</b>	<b>3386.540</b>	<b>3387.540</b>
<b>Part No. SK with basic controller, stainless steel<sup>1)</sup></b>	<b>3386.240</b>	<b>3387.240</b>
<b>Part No. SK with comfort controller, stainless steel<sup>1)</sup></b>	<b>3386.640</b>	<b>3387.640</b>
Voltage V, Hz	400, 50/460, 60, 3~	400, 50/460, 60, 3~
Dimensions in mm (inches)	H x W x D 470 x 796 x 580 (18.5 x 31.3 x 22.8)	470 x 796 x 580 (18.5 x 31.3 x 22.8)
<b>Useful cooling capacity <math>\dot{Q}_K</math> to DIN 3168 in W (BTU)</b>	<b>L 35 L 35 3000/3300 (10,246/11,270)</b> <b>L 35 L 50 2460/2750 (8401/9392)</b>	<b>4000/4200 (13,661/14,344)</b> <b>3250/3490 (11,099/11,919)</b>

To order air conditioners with integrated condensate evaporators, add .XX1 to the part number, ie. XXXX.XX1.

Rated current maximum	3.0 A/3.1 A	3.5 A/3.6 A
Starting current	8.0 A/9.0 A	17.0 A/19.0 A
Pre-fuse T	Motor circuit breaker 10.0 A/10.0 A	
Power consumption $P_{el}$ to DIN 3168	L 35 L 35 1180 W/1490 W L 35 L 50 1430 W/1770 W	1620 W/2060 W 1870 W/2340 W
Cooling coefficient $\epsilon = \dot{Q}_K/P_{el}$	L 35 L 35 2.5	
Refrigerant	R134a, 1600 g (56.4 oz)	R134a, 1800 g (63.5 oz)
Maximum allowable operating pressure	25 bar (363 psi)	
Temperature and setting range	+20°C to +55°C (68°F to 131°F)	
Ratings to EN 60 529/10.91	External circuit	IP 34 (NEMA 2)
	Internal circuit	IP 54 (NEMA 12)
Duty cycle	100 %	
Type of connection	Plug-in terminal strip	
Weight in kg (lb)	70 (154.3)	77 (169.8)
Air displacement of fans	External circuit	3450 m³/h (2031 cfm)
	Internal circuit	3870 m³/h (2278 cfm)
Temperature control	External circuit	1280 m³/h (753.4 cfm)
	Internal circuit	1420 m³/h (836 cfm)
Temperature control	Basic or comfort controller (factory setting +35°C (95°F))	

Accessories	PU		Page
Filter mats	3	3286.600	111
Metal filters	1	3286.610	112
Quick-change frame	1	3286.900	108
Door-operated switch	1	4127.000	–
SK bus system for comfort controller	1	3124.100	106
RiDiag II including cables for comfort controller	1	3159.100	–
Interface card for comfort controller	1	3124.200	105
Air ducting system	1	3286.970	101
Cover stoppers for interior air outlet	2	3286.980	101
Condensate hose	1	3301.612	108

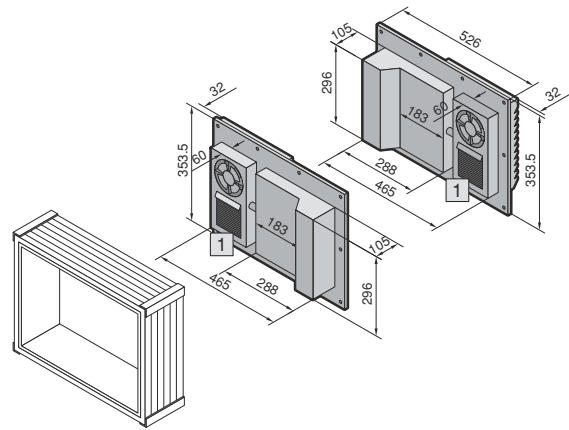
<sup>1)</sup> Delivery times on request.

Special voltages available on request. Technical modifications reserved.



# Wall-Mounted Air Conditioners

## VIP small air conditioners, useful cooling capacity 270 W (922 BTU)



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

### Configuration:

Fully wired, ready for connection and pre-mounted on an aluminum rear-wall 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 (2.4")

**Certifications,** see page 10.

**Performance diagrams,** available on the Internet, log onto [www.rittal-corp.com](http://www.rittal-corp.com).

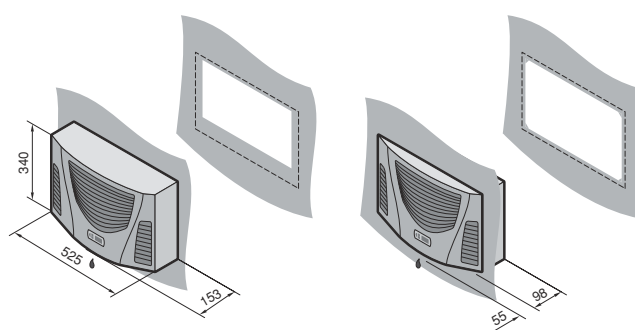
Part No. SK		3201.100	3202.100
Condenser version		left	right
Voltage V, Hz		230, 50/60	
Dimensions in mm (inches)		H 353.5 (13.9) W 526 (20.7) D 105 (4.1)	
Useful cooling capacity $\dot{Q}_K$ to DIN 3168 in W (BTU)		L 35 L 35 225/270 (768/922) L 35 L 45 160/200 (546/683)	
Rated current maximum		1.5 A/1.5 A	
Starting 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 35 285 W/300 W L 35 L 45 315 W/325 W	
Cooling coefficient $\epsilon = \dot{Q}_K/P_{el}$		L 35 L 35 0.8/0.9	
Refrigerant		R134a, 170 g (6.0 oz)	
Maximum allowable operating pressure		27 bar (392 psi)	
Temperature and setting range		+20°C to +45°C (68°F to 113°F)	
Ratings to EN 60 529/10.91	External circuit	IP 24 (NEMA 2)	
	Internal circuit	IP 54 (NEMA 12)	
Duty cycle		100 %	
Type of connection		Terminal strip	
Weight in kg (lb)		10.5 (23.1)	
Color		Rear wall aluminum, vent grille RAL 7035 (light gray)	
Air displacement of fans	External circuit	235 m³/h / 270 m³/h (138/159 cfm)	
	Internal circuit	160 m³/h / 180 m³/h (94/106 cfm)	
Temperature control		Electronic control (factory setting +35°C (95°F))	
Accessories		PU	Page
Temperature indicator	1	3114.100	103
Condensate hose	1	3301.608	108

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



# Wall-Mounted Air Conditioners

Mini air conditioner in horizontal format, useful cooling capacity 320 W (1093 BTU)



Mini air conditioners in horizontal format, ideal for cooling small equipment and operating housings with optimum space utilization.

**Configuration:**  
Fully wired ready for connection, including drilling template and assembly parts.

**Certifications,**  
see page 10.

**Detailed drawing,**  
see page 122.

**Performance diagrams,**  
available on the Internet,  
log onto [www.rittal-corp.com](http://www.rittal-corp.com).



Part No. SK	3302.300	3302.310
Voltage V, Hz	230, 50/60	115, 60
Dimensions in mm (inches)	H 340 (13.4) W 525 (20.7) D 153 (6.0)	
Useful cooling capacity $\dot{Q}_K$ to DIN 3168 in W (BTU)	L 35 L 35 L 35 L 50	300/320 (1025/1093) 150/160 (512/546)

Rated current maximum	1.6 A/1.7 A	3.3 A
Starting current	4.3 A/5.3 A	8.0 A
Pre-fuse T	10 A/10 A	10 A
Power consumption $P_{el}$ to DIN 3168	L 35 L 35 L 35 L 50	285 W/300 W 320 W/340 W
Cooling coefficient $\epsilon = \dot{Q}_K/P_{el}$	L 35 L 35	1.1
Refrigerant	R134a, 100 g (3.5 oz)	
Maximum allowable operating pressure	25 bar (363 psi)	
Temperature and setting range	+20°C to +55°C (68°F to 131°F)	
Ratings to EN 60 529/10.91	External circuit Internal circuit	IP 34 (NEMA 2) IP 54 (NEMA 12)
Duty cycle	100 %	
Type of connection	Plug-in terminal strip	
Weight in kg (lb)	13 (28.7)	
Color	RAL 7035 (light gray)	
Air displacement of fans	External circuit Internal circuit	345 m³/h (203 cfm) 310 m³/h (182 cfm)
Temperature control	Basic controller	

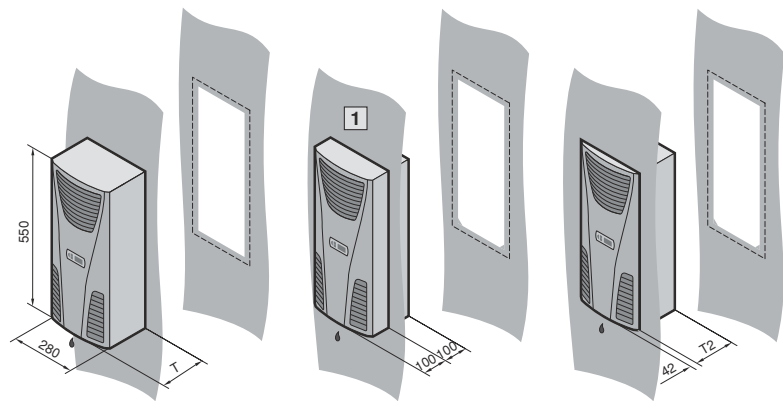
Accessories	PU		Page
Temperature indicator	1	3114.100	103
Condensate hose	1	3301.608	108
Filter mats	3	3286.110	111
Metal filters	1	3286.120	112

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



# Wall-Mounted Air Conditioners

Useful cooling capacity 320/610 W (1093/2080 BTU)



B = Width  
T = Depth



## Configuration:

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

## Note:

Integration of the air conditioners with comfort controller, into a superordinate remote monitoring system, can be achieved with an optional interface board **SK 3124.200** (RS 232, RS 485, RS 422 and PLC interface).

## 1 Partial internal mounting possible with 3303.XXX only.

**Certifications,**  
see page 10.

**Detailed drawing,**  
see page 122.

**Performance diagrams,**  
available on the Internet,  
log onto [www.rittal-corp.com](http://www.rittal-corp.com).

## Property rights:

German registered designs  
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

Part No. SK with basic controller, RAL 7035 (light gray)	3302.100	3302.110	3303.100	3303.110
Part No. SK with comfort controller, RAL 7035 (light gray)	–	–	3303.500	3303.510
Part No. SK with basic controller, stainless steel <sup>1)</sup>	3302.200	3302.210	3303.200	3303.210
Part No. SK with comfort controller, stainless steel <sup>1)</sup>	–	–	3303.600	3303.610
Voltage V, Hz	230, 50/60	115, 60	230, 50/60	115, 60
Dimensions in mm (inches)	H B T T2 550 (21.7) 280 (11.0) 140 (5.5) 98 (3.9)		550 (21.7) 280 (11.0) 200 (7.9) 158 (6.2)	
Useful cooling capacity $\dot{Q}_K$ to DIN 3168 in W (BTU)	L 35 L 35 L 35 L 50 300/320 (1025/1093) 150/170 (512/581)	320 (1093) 170 (581)	500/610 (1708/2083) 280/350 (957/1195)	610 (2083) 350 (1195)

Rated current maximum		1.6 A/1.7 A	3.3 A	2.6 A/2.6 A	5.7 A
Starting 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/10.0 A	10.0 A
Power consumption P <sub>el</sub> to DIN 3168	L 35 L 35	245 W/255 W	290 W	360 W/380 W	470 W
	L 35 L 50	255 W/275 W	340 W	420 W/390 W	500 W
Cooling coefficient ε = Q̇ <sub>K</sub> /P <sub>el</sub>	L 35 L 35	1.2		1.4	
Refrigerant		R134a, 100 g (3.5 oz)		R134a, 170 g (6.0 oz)	
Maximum allowable operating pressure		25 bar (263 psi)		28 bar (406 psi)	
Temperature and setting range		+20°C to +55°C (68°F to 131°F)			
Ratings to EN 60 529/10.91	External circuit	IP 34 (NEMA 2)			
	Internal circuit	IP 54 (NEMA 12)			
Duty cycle		100 %			
Type of connection		Plug-in terminal strip			
Weight in kg (lb)		13 (28.7)		17 (37.5)	
Air displacement of fans	External circuit	310 m³/h (182 cfm)		345 m³/h (203 cfm)	
	Internal circuit	345 m³/h (203 cfm)		310 m³/h (182 cfm)	
Temperature control		Basic or comfort controller (factory setting +35°C (95°F))			

Accessories	PU	Page
Filter mats	3 3286.300	111
Metal filters	1 3286.310	112
Door-operated switch	1 4127.000	–
SK bus system for comfort controller	1 –	3124.100 106
RiDiag II including cables for comfort controller	1 –	3159.100 –
Interface card for comfort controller	1 –	3124.200 105
Condensate hose	1 3301.608	3301.610 108

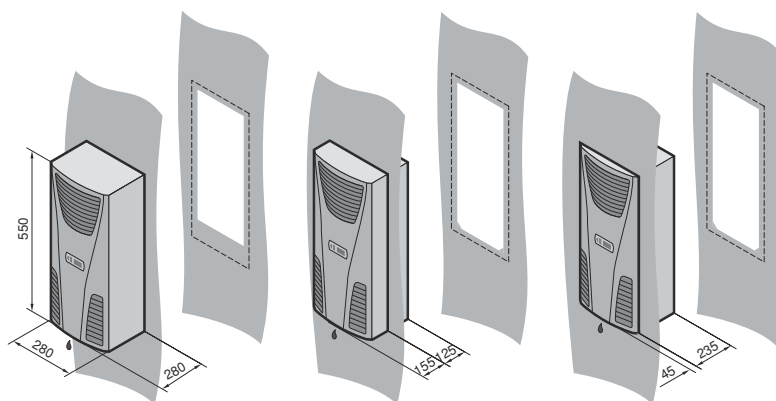
<sup>1)</sup> Delivery times on request.

Special voltages available on request. Technical modifications reserved.



# Wall-Mounted Air Conditioners

Useful cooling capacity 780 W (2664 BTU)



## Configuration:

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

## Note:

Air conditioners with comfort controller may be integrated into a superordinate remote monitoring system with an optional interface board **SK 3124.200** (RS 232, RS 485, RS 422 and PLC interface).

## Certifications,

see page 11.

## Detailed drawing,

see page 122.

## Performance diagrams,

available on the Internet, log onto [www.rittal-corp.com](http://www.rittal-corp.com).

## Property rights:

German registered designs 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

Part No. SK with basic controller, RAL 7035 (light gray)	3361.100	3361.110	3361.140
Part No. SK with comfort controller, RAL 7035 (light gray)	3361.500	3361.510	3361.540
Part No. SK with basic controller, stainless steel <sup>1)</sup>	3361.200	3361.210	3361.240
Part No. SK with comfort controller, stainless steel <sup>1)</sup>	3361.600	3361.610	3361.640
Voltage V, Hz	230, 50/60 <sup>3)</sup>	115, 60 <sup>3)</sup>	400 <sup>2)</sup> , 2~, 50/60 <sup>3)</sup>
Dimensions in mm (inches)	H 550 (21.7) W 280 (11.0) D 280 (11.0)		
Useful cooling capacity $\dot{Q}_K$ to DIN 3168 in W (BTU)	L 35 L 35 L 35 L 50	750/780 (2561/2664) 510/540 (1742/1844)	750/780 (2561/2664) 510/540 (1742/1844)

Rated current maximum	2.3 A/2.4 A	6.5 A	1.3 A/1.4 A
Starting current	5.7 A/5.7 A	13.9 A	3.3 A/3.3 A
Pre-fuse T	10 A/10 A	10 A	10 A/10 A
Power consumption $P_{el}$ to DIN 3168	L 35 L 35 L 35 L 50	480 W/555 W 545 W/610 W	560 W 560 W/630 W
Cooling coefficient $\epsilon = \dot{Q}_K/P_{el}$	L 35 L 35	1.5	
Refrigerant	R134a, 280 g (9.9 oz)		
Maximum allowable operating pressure	28 bar (406 psi)		
Temperature and setting range	+20°C to +55°C (68°F to 131°F)		
Ratings to EN 60 529/10.91	External circuit Internal circuit	IP 34 (NEMA 2) IP 54 (NEMA 12)	
Duty cycle	100 %		
Type of connection	Plug-in terminal strip		
Weight in kg (lb)	22 (48.5)		
Air displacement of fans (unimpeded air flow)	External circuit Internal circuit	480 m³/h (283 cfm) 600 m³/h (353 cfm)	
Temperature control	Basic or comfort controller (factory setting +35°C (95°F))		

Accessories	PU		Page
Filter mats	3	3286.300	111
Metal filters	1	3286.310	112
Door-operated switch	1	4127.000	–
SK bus system for comfort controller	1	3124.100	106
RiDiag II including cables for comfort controller	1	3159.100	–
Interface card for comfort controller	1	3124.200	105
Condensate hose	1	3301.608	108

<sup>1)</sup> Delivery times on request.

<sup>2)</sup> External toroidal core transformer Ø 126 x 65 mm (5.0 x 2.6") deep for mounting in the enclosure.

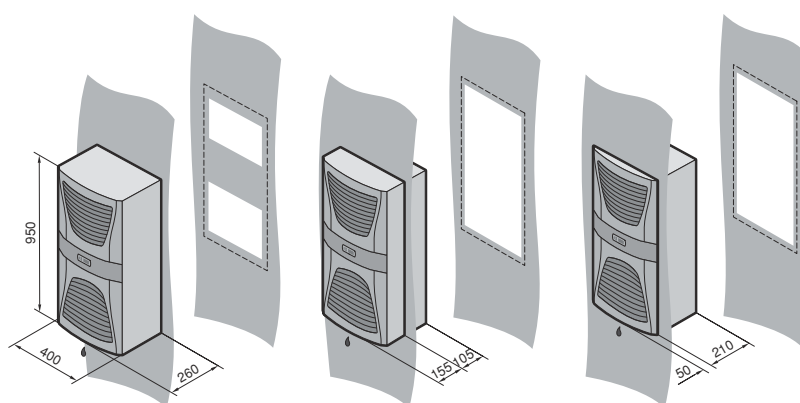
<sup>3)</sup>  $T_u$  maximum = 52°C (125°F)/60 Hz.

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



# Wall-Mounted Air Conditioners

Useful cooling capacity 1060/1510 W (3620/5150 BTU)



**RITTAL**  
**TOP**  
**THERM**

## Configuration:

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

## Note:

Integration of the air conditioner with comfort controller, into a superordinate remote monitoring system, can be achieved

with an optional interface board  
**SK 3124.200** (RS 232, RS 485, RS 422 and PLC interface).



## Optionally available:

With automatic condensate evaporation.

**Certifications,**  
see page 11.

**Detailed drawing,**  
see page 123.

**Performance diagrams,**  
available on the Internet,  
log onto [www.rittal-corp.com](http://www.rittal-corp.com).

## 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

<b>Part No. SK with basic controller, RAL 7035 (light gray)</b>	<b>3304.100</b>	<b>3304.110</b>	<b>3304.140</b>	<b>3305.100</b>	<b>3305.110</b>	<b>3305.140</b>
<b>Part No. SK with comfort controller, RAL 7035 (light gray)</b>	<b>3304.500</b>	<b>3304.510</b>	<b>3304.540</b>	<b>3305.500</b>	<b>3305.510</b>	<b>3305.540</b>
<b>Part No. SK with basic controller, stainless steel</b>	<b>3304.200</b>	<b>3304.210</b>	<b>3304.240</b>	<b>3305.200</b>	<b>3305.210</b>	<b>3305.240</b>
<b>Part No. SK with comfort controller, stainless steel</b>	<b>3304.600</b>	<b>3304.610</b>	<b>3304.640</b>	<b>3305.600</b>	<b>3305.610</b>	<b>3305.640</b>
Voltage V, Hz	230, 50/60	115 <sup>1)</sup> , 50/60	400, 50/ 460, 60, 3~	230, 50/60	115 <sup>1)</sup> , 50/60	400, 50/ 460, 60, 3~
Dimensions in mm (inches)	H 950 (37.4) W 400 (15.7) D 260 (10.2)			H 950 (37.4) W 400 (15.7) D 260 (10.2)		
<b>Useful cooling capacity <math>\dot{Q}_k</math> to DIN 3168 in W (BTU)</b>	<b>L 35 L 35 L 35 L 50</b>	<b>1000/1060 (3415/3620) 790/840 (2698/2869)</b>		<b>1500/1510 (5123/5157) 1230/1250 (4201/4269)</b>		

To order air conditioners with integrated condensate evaporators, add .XX1 to the part number, ie. XXXX.XX1.

Rated current maximum		4.8 A/4.4 A	9.5 A/10.0 A	2.5 A/2.6 A	5.4 A/6.0 A	11.0 A/12.5 A	2.3 A/2.6 A
Starting 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/10.0 A	16.0 A/16.0 A	10.0 A/10.0 A <sup>2)</sup>	16.0 A/16.0 A	20.0 A/20.0 A	10.0 A/10.0 A <sup>2)</sup>
Power consumption P <sub>el</sub> to DIN 3168		L 35 L 35 L 35 L 50	700 W/650 W 750 W/710 W	725 W/680 W 780 W/750 W	580 W/550 W 660 W/680 W	850 W/1000 W 1000 W/1160 W	880 W/1050 W 1040 W/1200 W
Cooling coefficient ε = Q̇ <sub>K</sub> /P <sub>el</sub>		L 35 L 35	1.4	1.7	1.8	1.7	1.9
Refrigerant		R134a, 500 g (17.6 oz)			R134a, 600 g (21.2 oz)		
Maximum allowable operating pressure		25 bar (363 psi)					
Temperature and setting range		+20°C to +55°C (68°F to 131°F)					
Ratings to EN 60 529/10.91		External circuit	IP 34 (NEMA 2)				
		Internal circuit	IP 54 (NEMA 12)				
Duty cycle		100 %					
Type of connection		Plug-in terminal strip					
Weight in kg (lb)		39 (86.0)	44 (97.0)	40 (88.2)	41 (90.3)	46 (101.4)	42 (92.6)
Air displacement of fans		External circuit	900 m³/h (530 cfm)				800 m³/h (471 cfm)
		Internal circuit	600 m³/h (353 cfm)				
Temperature control		Basic or comfort controller (factory setting +35°C (95°F))					

Accessories	PU		Page
Filter mats	3	3286.400	111
Metal filters	1	3286.410	112
Door-operated switch	1	4127.000	–
SK bus system for comfort controller	1	3124.100	106
RiDiag II including cables for comfort controller	1	3159.100	–
Interface card for comfort controller	1	3124.200	105
Condensate hose	1	3301.612	108

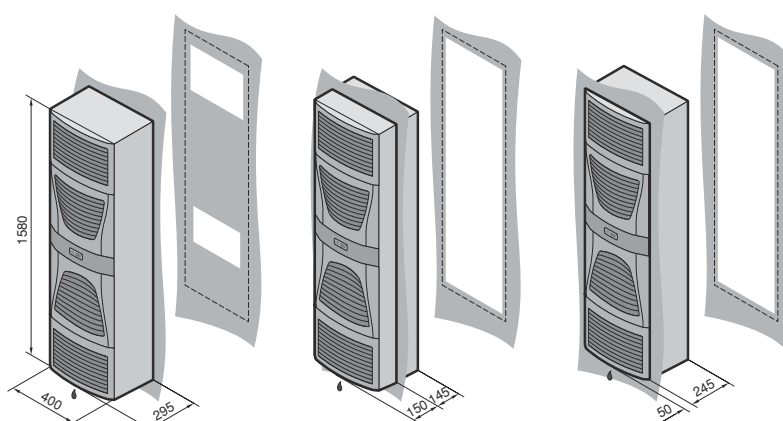
<sup>1)</sup> Delivery times available on request.

<sup>2)</sup> Motor circuit-breaker

Optionally available with automatic condensate evaporation. Special voltages available on request. We reserve the right to make technical modifications.



**Useful cooling capacity 2350/2750 W (8026/9392 BTU)**

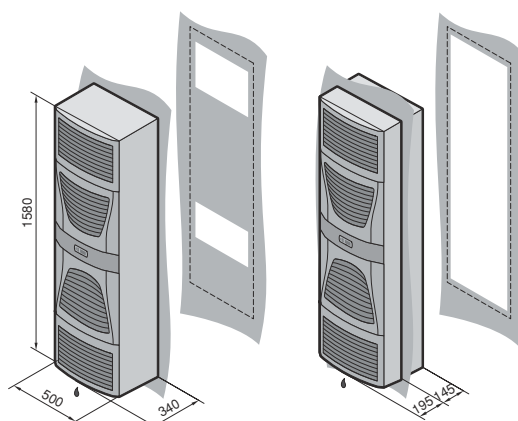


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42
Climate Control



**Useful cooling capacity 4400 W (15,027 BTU)**



**RITTAL**  
**TOP—**  
**THERM**



**!**

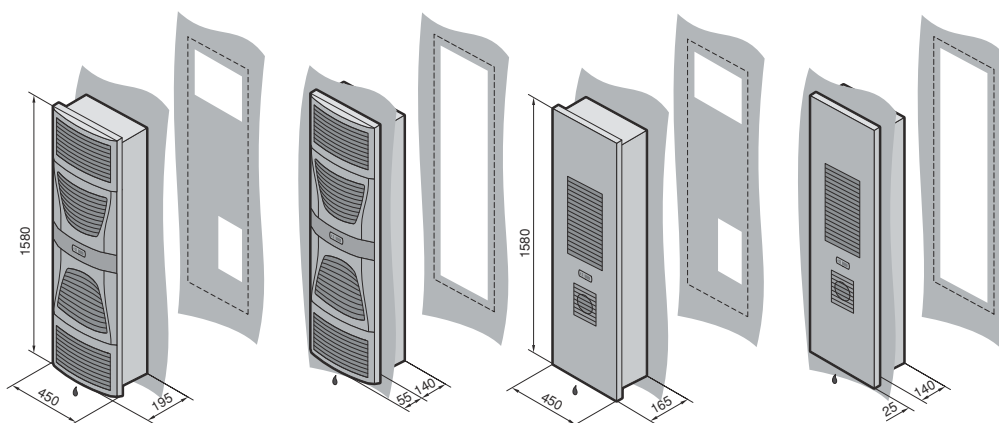
**Performance diagrams,**  
available on the Internet,  
log onto [www.rittal-corp.com](http://www.rittal-corp.com).

Optionally available with automatic condensate evaporation. Special voltages available on request. We reserve the right to make technical modifications.



# Wall-Mounted Air Conditioners

**Slimline, useful cooling capacity 1500 W (5123 BTU)**



The super slimline design permits system adaptation for applications where high heat loads are accommodated in a confined space.

## Configuration:

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

## Note:

Air conditioner with comfort controller may be integrated into a superordinate remote monitoring system with an optional interface board **SK 3124.200** (RS 232, RS 485, RS 422 and PLC interface).



## Optionally available:

With automatic condensate evaporation.

**Certifications,**  
see page 12.

**Detailed drawing,**  
see page 124.

**Performance diagrams,**  
available on the Internet,  
log onto [www.rittal-corp.com](http://www.rittal-corp.com).

<b>Part No. SK with basic controller, RAL 7035 (light gray)</b>	<b>3366.100</b>	<b>3377.100<sup>1)</sup></b>	<b>3366.110</b>	<b>3377.110<sup>1)</sup></b>	<b>3366.140</b>	<b>3377.140<sup>1)</sup></b>
<b>Part No. SK with comfort controller, RAL 7035 (light gray)</b>	<b>3366.500</b>	<b>3377.500<sup>1)</sup></b>	<b>3366.510</b>	<b>3377.510<sup>1)</sup></b>	<b>3366.540</b>	<b>3377.540<sup>1)</sup></b>
<b>Part No. SK with basic controller, stainless steel</b>	<b>3366.200<sup>1)</sup></b>	<b>3377.200<sup>1)</sup></b>	<b>3366.210<sup>1)</sup></b>	<b>3377.210<sup>1)</sup></b>	<b>3366.240<sup>1)</sup></b>	<b>3377.240<sup>1)</sup></b>
<b>Part No. SK with comfort controller, stainless steel</b>	<b>3366.600<sup>1)</sup></b>	<b>3377.600<sup>1)</sup></b>	<b>3366.610<sup>1)</sup></b>	<b>3377.610<sup>1)</sup></b>	<b>3366.640<sup>1)</sup></b>	<b>3377.640<sup>1)</sup></b>
Voltage V, Hz	230, 50/60		115, 50/60		400/460, 3~, 50/60	
Dimensions in mm (inches)	H	1580 (62.2)	1580 (62.2)	1580 (62.2)	1580 (62.2)	1580 (62.2)
	W	450 (17.7)	450 (17.7)	450 (17.7)	450 (17.7)	450 (17.7)
	D	195 (7.7)	165 (6.5)	195 (7.7)	165 (6.5)	195 (7.7)
<b>Useful cooling capacity <math>\dot{Q}_K</math> to DIN 3168 in W (BTU)</b>	<b>L 35 L 35</b>	<b>1500/1500 (3415/5123)</b>	<b>1050/1100 (3586/3757)</b>			

Rated current maximum		6.5 A/6.7 A		13.2 A/13.6 A		2.6 A/2.8 A	
Starting 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/10.0 A		20.0 A/20.0 A		10.0 A/10.0 A	
Power consumption P <sub>el</sub> to DIN 3168		L 35 L 35 L 35 L 50	920 W/1050 W 1095 W/1210 W	950 W/1080 W 1140 W/1250 W		950 W/1100 W 1120 W/1290 W	
Cooling coefficient ε = Q̇ <sub>K</sub> /P <sub>el</sub>		L 35 L 35	1.6				
Refrigerant		R134a, 700 g (24.7 oz)					
Maximum allowable operating pressure		28 bar (406 psi)					
Temperature and setting range		+20°C to +55°C (68°F to 131°F)					
Ratings to EN 60 529/10.91		External circuit	IP 34 (NEMA 2)				
		Internal circuit	IP 54 (NEMA 12)				
Duty cycle		100 %					
Type of connection		Plug-in terminal strip					
Weight in kg (lb)		45 (99.2)		50 (110.2)		46 (101.4)	
Air displacement of fans (unimpeded air flow)		External circuit	910 m³/h (536 cfm)				
		Internal circuit	860 m³/h (506 cfm)				
Temperature control		Basic or comfort controller (factory setting +35°C (95°F))					

Accessories	PU							Page
Filter mats	3	3286.400	3253.010	3286.400	3253.010	3286.400	3253.010	111
Metal filters	1	3286.410	3253.220	3286.410	3253.220	3286.410	3253.220	112
Trim frame for external mounting	1	3377.000						107
Door-operated switch	1	4127.000						–
SK bus system for comfort controller	1	3124.100						106
RiDiag II including cables for comfort controller	1	3159.100						–
Interface card for comfort controller	1	3124.200						105
Condensate hose	1	3301.612						108

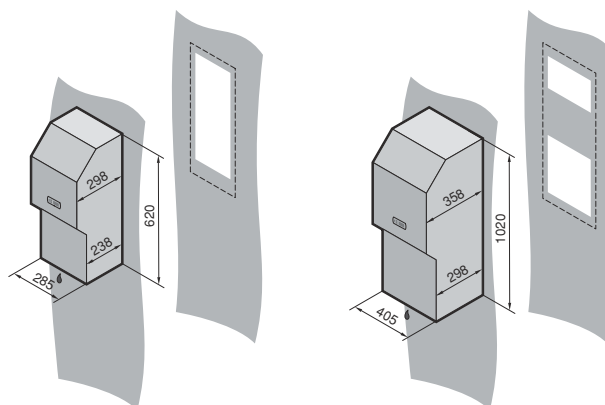
<sup>1)</sup> Delivery times available on request.

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



# Wall-Mounted Air Conditioners

Design NEMA 4X, useful cooling capacity 610/1510 W (2083/5150 BTU)



## Configuration:

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

## Note:

Air conditioner with comfort controller may be integrated into a superordinate remote monitoring system with an optional interface board **SK 3124.20** (RS 232, RS 485, RS 422 and PLC interface).

## Certifications,

see page 12.

## Detailed drawing,

see page 124.

## Performance diagrams,

available on the Internet, log onto [www.rittal-corp.com](http://www.rittal-corp.com).



Part No. SK with basic controller <sup>1)</sup>	3303.104	3303.114	3304.104	3304.114	3304.144	3305.104	3305.114	3305.144
Part No. SK with comfort controller <sup>1)</sup>	3303.504	3303.514	3304.504	3304.514	3304.544	3305.504	3305.514	3305.544
Voltage V, Hz	230, 50/60	115, 60	230, 50/60	115, 50/60	400, 50/460, 60, 3~	230, 50/60	115, 50/60	400, 50/460, 60, 3~
Dimensions in mm (inches)	H 620 (24.4) W 285 (11.2) D 298 (11.7)		1020 (40.2) 405 (15.9) 358 (14.1)			1020 (40.2) 405 (15.9) 358 (14.1)		
Useful cooling capacity $\dot{Q}_k$ to DIN 3168 in W (BTU)	L 35 L 35 500/610 (1708/2083) L 35 L 50 280/350 (956/1195)	500 (1708) 280 (956)	1000/1060 (3415/3620) 790/840 (2698/2869)			1500/1510 (5123/5157) 1230/1250 (4201/4269)		

Rated current maximum		2.6/2.6 A	5.7 A	4.8/4.4 A	9.5/10.0 A	2.5/2.6 A	5.4/6.0 A	11.0/12.5 A	2.3/2.6 A	
Starting 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		10.0/10.0 A	10.0 A	10.0/10.0 A	16.0/16.0 A	10.0 A <sup>2)</sup>	16.0/16.0 A	20.0/20.0 A	10.0 A <sup>2)</sup>	
Power consumption P <sub>el</sub> to DIN 3168	L 35 L 35 L 35 L 50	360/380 W 420/390 W	470 W 500 W	700/650 W 750/710 W	725/680 W 780/750 W	580/550 W 660/680 W	850/1000 W 1000/1160 W	880/1050 W 1040/1200 W	800/980 W 960/1150 W	
Cooling coefficient ε = Q <sub>k</sub> /P <sub>el</sub>	L 35 L 35	1.4				1.7	1.8	1.7	1.9	
Refrigerant		R134a, 170 g (6.0 oz)		R134a, 500 g (17.6 oz)			R134a, 600 g (21.1 oz)			
Maximum allowable operating pressure		28 bar (406 psi)		25 bar (363 psi)			25 bar (363 psi)			
Temperature and setting range		+20°C to +55°C (68°F to 131°F)								
Ratings		NEMA 4X								
Duty cycle		100 %								
Type of connection		Plug-in terminal strip								
Weight in kg (lb)		25 (55.1)		49 (108.2)	54 (119.0)	50 (110.2)	51 (112.4)	56 (123.5)	52 (114.6)	
Material		Type 304 stainless steel (V2A)								
Air displacement of fans	External circuit	345 m³/h (203 cfm)		900 m³/h (530 cfm)			900 m³/h (530 cfm)			
	Internal circuit	310 m³/h (182 cfm)		600 m³/h (353 cfm)			800 m³/h (471 cfm)			
Temperature control		Basic or comfort controller (factory setting +35°C (95°F))								
Accessories		PU								Page
Door-operated switch	1	4127.000		4127.000				–		
SK bus system for comfort controller	1	3124.100		–			3124.100		106	
RiDiag II for comfort controller, incl. cables	1	3159.100						–		
Interface card for comfort controller	1	3124.200						105		
Condensate hose	1	3301.610		3301.612				108		

<sup>1)</sup> Delivery times available on request.

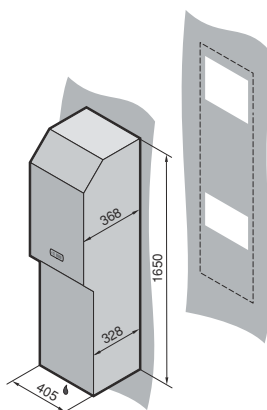
<sup>2)</sup> Motor circuit breaker.

Special voltages and technical modifications available on request.



# Wall-Mounted Air Conditioners

**Design NEMA 4X, useful cooling capacity 2350/2750 W (8025/9392 BTU)**



## Configuration:

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

## Note:

Integration of the air conditioner with comfort controller, into a superordinate remote monitoring system, can be achieved with an optional interface board **SK 3124.200** (RS 232, RS 485, RS 422 and PLC interface).

**Certifications,**  
see page 12.

**Detailed drawing,**  
see page 125.

**Performance diagrams,**  
available on the Internet,  
log onto [www.rittal-corp.com](http://www.rittal-corp.com).



Part No. SK with basic controller <sup>1)</sup>	3328.104	3328.114	3328.144	3329.104	3329.114	3329.144
Part No. SK with comfort controller <sup>1)</sup>	3328.504	3328.514	3328.544	3329.504	3329.514	3329.544
Voltage V, Hz	230, 50/60	115, 50/60	400, 50/ 460, 60, 3~	230, 50/60	115, 50/60	400, 50/ 460, 60, 3~
Dimensions in mm (inches)	H 1650 (65.0) W 405 (16.0) D 368 (14.5)					
Useful cooling capacity $\dot{Q}_K$ to DIN 3168 in W (BTU)	L 35 L 35 L 35 L 50	2000/2350 (6860/8025) 1450/1690 (4952/5772)		2500/2750 (8538/9392) 1600/1750 (5464/5977)		

Rated current maximum		6.9 A/5.0 A	13.6 A/16.2 A	2.5 A/3.0 A	8.0 A/10.0 A	16.0 A/21.0 A	3.4 A/3.5 A
Starting current		22.0 A/26.0 A	36.0 A/39.0 A	6.5 A/7.5 A	21.0 A/21.0 A	44.0 A/42.0 A	6.5 A/7.3 A
Pre-fuse T		16.0 A/16.0 A	25.0 A/25.0 A	10.0 A/10.0 A <sup>2)</sup>	16.0 A/16.0 A	25.0 A/25.0 A	10.0 A/10.0 A <sup>2)</sup>
Power consumption P <sub>el</sub> to DIN 3168	L 35 L 35	900/1070 W	960/1130 W	930/1150 W	1320/1550 W	1380/1600 W	1300/1500 W
	L 35 L 50	1330/1220 W	1170/1290 W	1150/1400 W	1500/1880 W	1550/1980 W	1550/1850 W
Cooling coefficient ε = Q̇ <sub>K</sub> /P <sub>el</sub>	L 35 L 35	1.7		2.3	1.9		2.0
Refrigerant		R134a, 900 g (31.7 oz)					
Maximum allowable operating pressure		28 bar (406 psi)					
Temperature and setting range		+20°C to +55°C (68°F to 131°F)					
Ratings		NEMA 4X					
Duty cycle		100 %					
Type of connection		Plug-in terminal strip					
Weight in kg (lb)		80 (176.4)	87 (191.8)	80 (176.4)	83 (183.0)	90 (198.4)	83 (183.0)
Material		Type 304 stainless steel (V2A)					
Air displacement of fans	External circuit	640 m³/h (377 cfm)			710 m³/h (418 cfm)		
	Internal circuit	550 m³/h (324 cfm)			640 m³/h (377 cfm)		
Temperature control		Basic or comfort controller (factory setting +35°C (95°F))					

Accessories	PU	Page
Door-operated switch	1 4127.000	–
SK bus system for comfort controller	1 3124.100	106
RiDiag II including cables for comfort controller	1 3159.100	–
Interface card for comfort controller	1 3124.200	105
Condensate hose	1 3301.612	108

<sup>1)</sup> Delivery times available on request.

<sup>2)</sup> Motor circuit-breaker

Special voltages and technical modifications available on request.





### RiNano anti-fingerprint and anti-microbial – the refinement of stainless steel products

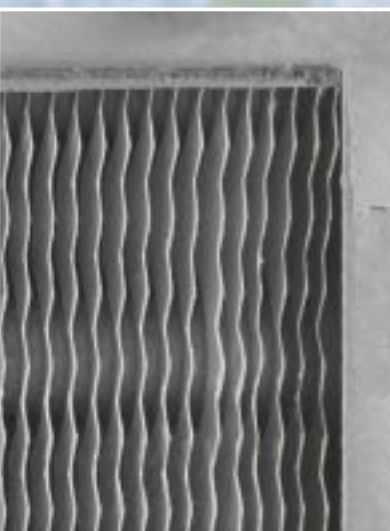
These two finishes may be used individually or together.

**Anti-fingerprint** will make finger prints less visible, they can easily be wiped off with a dry cloth. The ultra-fine nano composite material will not visibly change the appearance of the surface.

**Anti-microbial**, with a special silver finish, prevents the development of microbes (viruses, bacteria, fungi). Simple cleaning washes them off.

Ciba tested.

Please request additional information at [rinano@rittal-corp.com](mailto:rinano@rittal-corp.com).



### TopTherm & RiNano an innovative finish for long lasting cooling performance

Layers of dust on the outer air circuit surfaces of air conditioners can diminish effectiveness by 30 to 50 % due to the insulating effect. A revolutionary RiNano-finish can prevent this because of its water, dirt and oil repelling properties; it will help provide long lasting, consistent cooling performance. Service and maintenance can be scheduled less frequently and cleaning will be much easier.

### Anti-graffiti – the cleaning of CS Outdoor enclosures will be easy with our RiNano finish.

Not all painted works can be considered art. A RiNano-finish enhancement will make the removal of graffiti effortless. Spray-paint can be removed with a power-washer as part of regular cleaning. The finish repels other stains and contaminants as well.

We are confident that you will find this finish option very useful.

Air conditioners in W (BTU)		Voltage	Controller	Part No. SK		Standard equipment see page
				Standard	RiNano	
Wall- mounted	500 (1708)	230 V	Comfort	3303.500	<b>3303.400</b>	39
	1000 (3415)	230 V	Comfort	3304.500	<b>3304.400</b>	41
	1000 (3415)	400 – 460 V, 3~	Comfort	3304.540	<b>3304.440</b>	41
	1500 (5123)	230 V	Comfort	3305.500	<b>3305.400</b>	41
	1500 (5123)	400 – 460 V, 3~	Comfort	3305.540	<b>3305.440</b>	41
Roof- mounted	1500 (5123)	230 V	Comfort	3384.500	<b>3384.400</b>	35
	1500 (5123)	400 V, 2~	Comfort	3384.540	<b>3384.440</b>	35

Additional air conditioners with RiNano finish upon request.



# Chiller Systems

## Features

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



## Application diversity of centralized 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 pollution.



### Cooling of liquid media

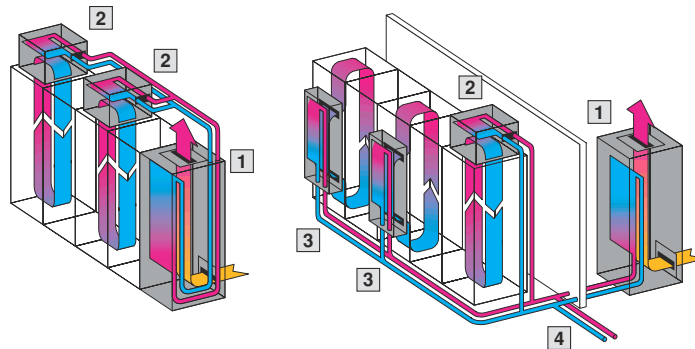
Direct and indirect cooling of liquids are the prerequisite for ensuring essential machine precision and speed.



### Process cooling

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

## Installation conditions



### Unity with enclosures

For example, chiller systems may be attached directly to a bayed enclosure suite to provide effective, centralized cooling of all cases and enclosures on a machine or plant floor.

### Spatially separated

High heat loads can even be dissipated in confined and awkward spaces, due to the spatial separation of the chiller system from the enclosure 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.

- 1 Chiller system
- 2 Air/water heat exchanger, roof-mounted
- 3 Air/water heat exchanger, wall-mounted
- 4 Further cooling options, machine cooling

## 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 capacity calculated at an ambient temperature of 32°C (90°F) and an inlet temperature of 10°C (50°F) and 18°C (64°F) (water)/20°C (68°F) (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. The cost-effective cooling of various equipment in the production line is performed centrally by the chiller system in an industrial enclosure. It supplies the machine, process cooling and control enclosure with the required cooling water by an 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. To ensure that the test process runs smoothly, the control enclosures are cooled by an air/water heat exchanger, and the three test benches are supplied with the required cooling water per the test requirements. These diverse cooling tasks are performed by the chiller system integrated into the TS8 modular enclosure system. Visually, they form a single unit with the TS8 control enclosure.

#### Example 3

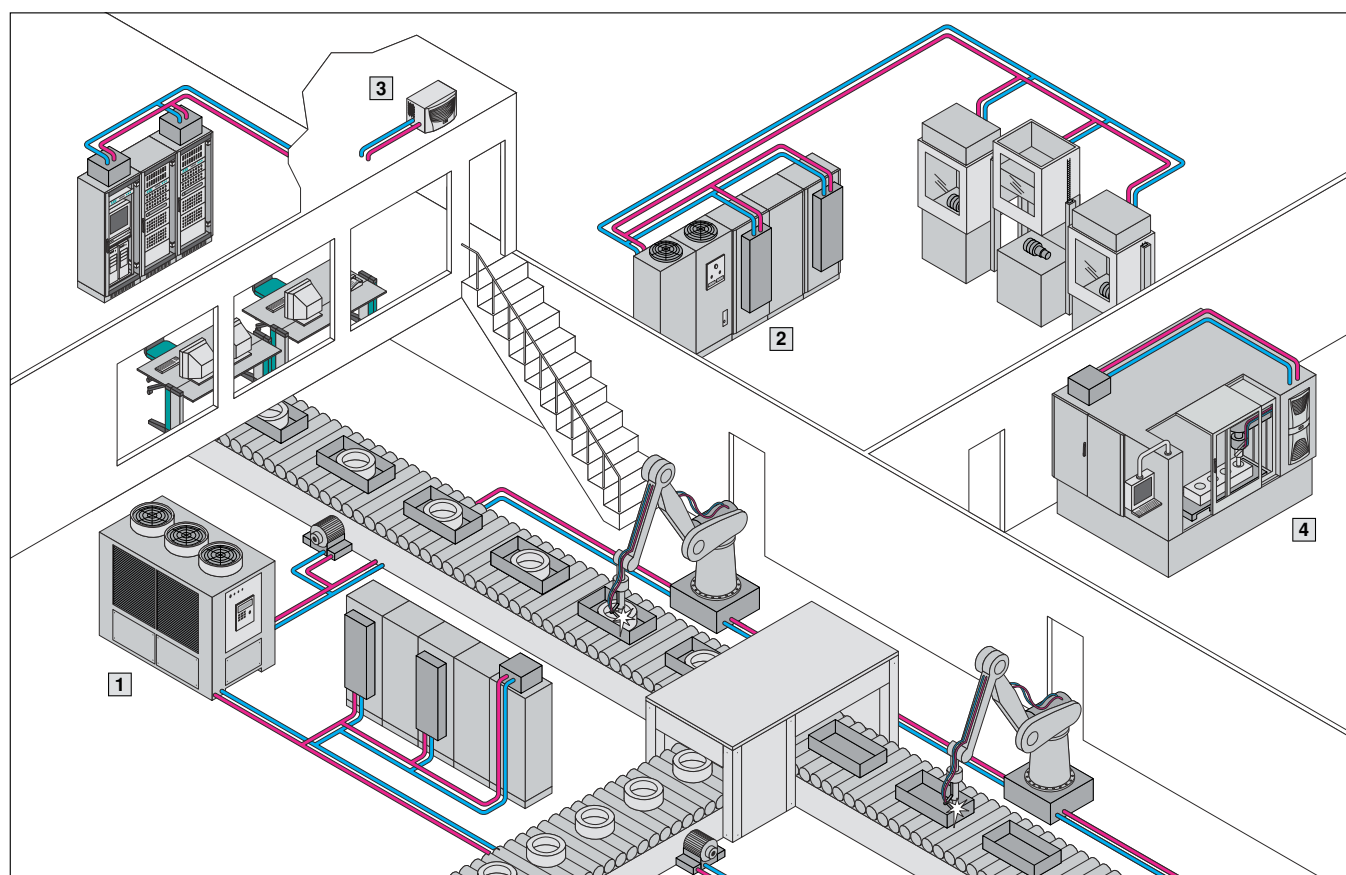
##### Control room

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

#### Example 4

##### Tool production

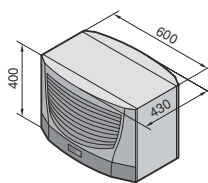
The heat loss generated during tool machining, (for example by water-cooled motor spindles with high-frequency drives), must be dissipated efficiently. In this case, the task is performed by a wall-mounted Mini chiller system which at the same time ensures cooling of the control unit, also integrated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





# Chiller Systems

**Mini, cooling capacity 1070/1660 W (3654/5669 BTU)**



## Technical design:

- Compact and modular layout of the cooling components on a base plate which functions as a collecting tray
- Medium-conveying pumps
- Precise temperature control, based on microprocessor technology
- Collective fault signal with floating contact
- Application-specific equipment available on request.
- Pressure-sealed system (.600) or open system with tank (.610)

## Configuration:

Chiller system wired and plumbed ready for connection, with multilingual documentation including functional diagram and wiring plans.

## Note:

The illustration shows units with customer-specific options.

## Certifications,

available on the Internet, log onto [www.rittal-corp.com](http://www.rittal-corp.com).

## Detailed drawing,

available on the Internet, log onto [www.rittal-corp.com](http://www.rittal-corp.com).

## Layout diagram,

see page 128.

## Characteristic curves of pump,

see page 128.

## Options,

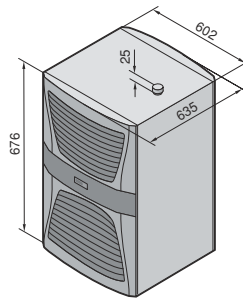
see page 126.

Part No. SK		3318.600	3318.610	3319.600	3319.610
Voltage V, Hz		230, 50/60			
Dimensions in mm (inches)		H W D	400 (15.7) 600 (23.6) 430 (16.9)		
Cooling capacity at T <sub>w</sub> = 10°C (50°F)/T <sub>u</sub> = 32°C (90°F) T <sub>w</sub> = 18°C (64°F)/T <sub>u</sub> = 32°C (90°F) in W (BTU)		780/870 (2664/2971) 960/1070 (3279/3654)		1200/1330 (4098/4542) 1490/1660 (5089/5669)	
Power consumption		630/780 W		845/1050 W	
Rated current maximum		4.2 A		5.4 A	
Refrigerant		R134a			
P <sub>max.</sub> cooling circuit		25 bar (363 psi)			
Temperature range	Environment	+5°C to +43°C (41°F to 109°F)			
	Liquid media	+10°C to +30°C (14°F to 86°F)			
Pump capacity		See characteristic curve			
Tank		Pressure-sealed	Made from PP plastic	Pressure-sealed	Made from PP plastic
Tank capacity in l (gal)		–	2.5 (0.7)	–	2.5 (0.7)
Water connections		2 x 1/2" IG			
Weight in kg (lb)		48 (105.8)		51 (112.4)	
Color		RAL 7035 (light gray)			
Ratings (electric)		IP 44			
Air displacement of fans		900 m³/h (530 cfm)			
Temperature control		Microcontroller control, setting range +10°C to +30°C (50°F to 86°F) (factory setting +18°C (64°F))			
Accessories		PU		Page	
Metal filter mat	1	3286.510			112

Customized solutions and technical modifications available on request.



## Mini, cooling capacity 3400/5400 W (11,612/18,442 BTU)



### Technical design:

- Compact, modular configuration of the cooling components with integrated water tank. Operator display may be optionally mounted on the front or rear
- Integrated tank level display
- Medium-conveying pumps
- Precise temperature control, based on microprocessor technology
- Collective fault signal with floating contact
- Application-specific equipment available on request

### Configuration:

Chiller system wired and plumbed ready for connection, with multilingual documentation including functional diagram and wiring plans.

### Note:

The illustration shows units with customer-specific options.

### Certifications,

available on the Internet, log onto [www.rittal-corp.com](http://www.rittal-corp.com).

### Detailed drawing,

available on the Internet, log onto [www.rittal-corp.com](http://www.rittal-corp.com).

### Layout diagram,

see page 128.

### Characteristic curves of pump,

see page 128.

### Options,

see page 126.

Part No. SK	3320.600	3334.600
Voltage V, Hz	400, 3~, 50/60/460, 3~, 60 <sup>1)</sup>	
Dimensions in mm (inches)	H 676 (26.6)	
	W 602 (23.7)	
	D 635 (25.0)	
Cooling capacity at $T_w = 10^\circ\text{C}$ (50°F)/ $T_u = 32^\circ\text{C}$ (90°F) $T_w = 18^\circ\text{C}$ (64°F)/ $T_u = 32^\circ\text{C}$ (90°F) in W (BTU)	2650/3000 (9050/10,246)	3900/4700 (13,319/16,051)
	3000/3400 (10,246/11,612)	4500/5400 (15,368/18,442)
Power consumption	1716/1953 W	2001/2505 W
Rated current maximum	3.8 A/3.9 A	4.9 A/5.0 A
Refrigerant	R134a	
$P_{\text{max}}$ cooling circuit	25 bar (363 psi)	
Temperature range	Environment	+5°C to +43°C (41°F to 109°F)
	Liquid media	+10°C to +30°C (14°F to 86°F)
Pump capacity	See characteristic curve	
Tank	Made from type 304 stainless steel	
Tank capacity in l (gal)	30 (7.9)	
Water connections	2 x 1/2" IG	
Weight in kg (lb)	88 (194.0)	94 (207.2)
Color	RAL 7035 (light gray)	
Ratings (electric)	IP 44	
Air displacement of fans	1785 m³/h (1051 cfm)	
Temperature control	Microcontroller control, setting range +10°C to +30°C (50°F to 86°F) (factory setting +18°C (64°F))	
<b>Accessories</b> PU		Page
Metal filter mat	1 3286.520	112

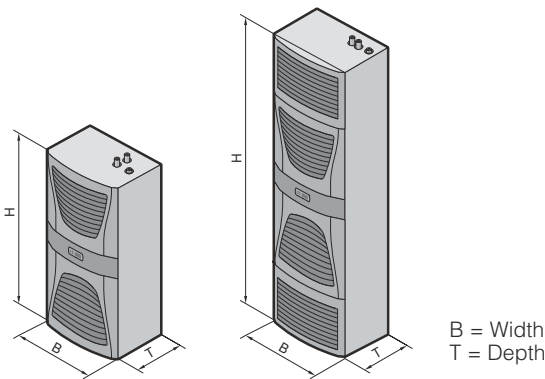
<sup>1)</sup> Supports multiple voltages without rewiring.

Special voltages and technical modifications available on request.



# Chiller Systems

Mini, for wall-mounting, cooling capacity 1120/4500 W (3825/15,368 BTU)



**Technical design:**

- Compact, modular configuration of the cooling components with integrated water tank
- Application-specific equipment available on request
- Open system with tank

**Configuration:**

Chiller system fully wired and plumbed ready for connection, with multilingual documentation including functional diagram and wiring plans.

**Note:**

The illustration shows units with customer-specific options

**Certifications,**

available on the Internet, log onto [www.rittal-corp.com](http://www.rittal-corp.com).

**Detailed drawing,**

available on the Internet, log onto [www.rittal-corp.com](http://www.rittal-corp.com).

**Layout diagram,**

see page 129.

**Characteristic curves of pump,**

see page 129.

**Options,**

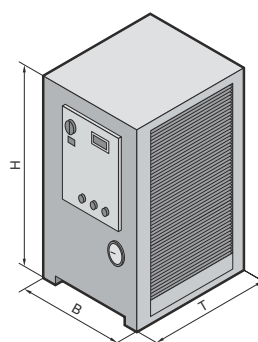
see page 126.

Part No. SK		3360.100	3360.250	3360.400
Voltage V, Hz		400, 3~, 50/60/460, 3~, 60 <sup>1)</sup>		
Dimensions in mm (inches)	H	950 (37.4)	1580 (62.2)	1580 (62.2)
	B	400 (15.7)	400 (15.7)	500 (19.7)
	T	310 (12.2)	290 (11.4)	340 (13.4)
<b>Cooling capacity at</b> $T_w = 10^{\circ}\text{C} (50^{\circ}\text{F})/T_u = 32^{\circ}\text{C} (90^{\circ}\text{F})$ $T_w = 18^{\circ}\text{C} (64^{\circ}\text{F})/T_u = 32^{\circ}\text{C} (90^{\circ}\text{F})$ in W (BTU)		<b>830/930 (2835/3176)</b> <b>1000/1120 (3415/3825)</b>	<b>2100/2350 (7172/8026)</b> <b>2500/2800 (8538/9563)</b>	<b>3300/3700 (11,270/12,636)</b> <b>4000/4500 (13,661/15,368)</b>
Power consumption		700/760 W	1550/2000 W	1980/2450 W
Rated current maximum		2.7 A/3.0 A	3.7 A/3.8 A	3.9 A/4.2 A
Refrigerant		R134a		
P <sub>max.</sub> cooling circuit		23 bar (334 psi)		
Temperature range	Environment	+5°C to +43°C (41°F to 109°F)		
	Liquid media	+10°C to +30°C (14°F to 86°F)		
Pump capacity		See characteristic curve		
Tank		Made from PP plastic		
Tank capacity in l (gal)		5 (1.3)	10 (2.6)	15 (4.0)
Water connections		Quick-release coupling (counterpart included in accessory bag)		
Weight in kg (lb)		47 (103.6)	78 (172.0)	99 (218.3)
Color		RAL 7035 (light gray)		
Ratings (electric)		IP 44		
Air displacement of fans		500 m³/h (294 cfm)	710 m³/h (418 cfm)	2000 m³/h (1177 cfm)
Temperature control		Microcontroller control, setting range +10°C to +30°C (50°F to 86°F) (factory setting +18°C (64°F))		
<b>Accessories</b>		PU	Page	
Filter mat	1	3286.400	111	
Metal filter mat	1	3286.410	112	

<sup>1)</sup> Supports multiple voltages without rewiring.  
Special voltages and technical modifications available on request.



## Freestanding enclosure, cooling capacity 2100 to 7700 W (7172/26,297 BTU)



B = Width  
T = Depth

### Technical design:

- Robust industrial standard in 3 enclosure sizes
- Identical basic enclosure for oil and water chiller systems
- Extra space for the integration of special equipment
- Variable air routing is possible via the left or right sidewall
- Floating contact for collective fault signal
- Level monitor
- Multi-coil vaporizer in the tank

### Configuration:

Chiller system wired and plumbed 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 safety modules available on request.

### Certifications,

available on the Internet, log onto [www.rittal-corp.com](http://www.rittal-corp.com).

### Detailed drawing,

available on the Internet, log onto [www.rittal-corp.com](http://www.rittal-corp.com).

### Layout diagram,

see page 129.

### Characteristic curves of pump,

see page 129.

### Options,

see page 126.

Part No. SK		3336.100	3336.200	3336.300	3336.500	3336.600	3336.650
Voltage V, Hz		400, 3~, 50					
Dimensions in mm (inches)	H	725 (28.5)	965 (38.0)		1180 (46.5)		
	B	470 (18.5)	485 (19.1)		595 (23.4)		
	T	540 (21.3)	650 (25.6)		800 (31.5)		
<b>Cooling capacity at</b> <b>T<sub>w</sub> = 10°C (50°F)/T<sub>u</sub> = 32°C (90°F)</b> <b>T<sub>w</sub> = 18°C (64°F)/T<sub>u</sub> = 32°C (90°F)</b> <b>in W (BTU)</b>		<b>1700 (5806)</b> <b>2100 (7172)</b>	<b>2100 (7172)</b> <b>2580 (8811)</b>	<b>2300 (7855)</b> <b>3360 (11,475)</b>	<b>3550 (12,124)</b> <b>5040 (17,213)</b>	<b>4800 (16,393)</b> <b>6160 (21,038)</b>	<b>5200 (17,758)</b> <b>7700 (26,297)</b>
Power consumption		1.5 kW		1.8 kW	2.3 kW	2.9 kW	3.6 kW
Rated current maximum		2.8 A		3.5 A	4.2 A	4.9 A	5.7 A
Refrigerant		R134a					
P <sub>max.</sub> cooling circuit		24 bar (348 psi)					
Temperature range	Environment	+15°C to +45°C (59°F to 113°F)					
	Liquid media	+10°C to +25°C (50°F to 77°F)					
Pump capacity		See characteristic curve					
Tank		Made from type 304 stainless steel					
Tank capacity in l (gal)		17 (4.5)	33 (8.7)	57 (15.1)			
Water connections		¾" IG			1" IG		
Weight in kg (lb)		75 (165.3)	97 (213.8)	99 (218.3)	141 (310.9)	143 (315.3)	147 (324.1)
Color		RAL 7035 (light gray)					
Ratings (electric)		IP 54 (NEMA 12)					
Air displacement of fans		700 m³/h (412 cfm)	1250 m³/h (736 cfm)	1785 m³/h (1050 cfm)	3140 m³/h (1848 cfm)		
Temperature control		Electronic control with digital displav. setting range +10°C to +25°C (50°F to +77°F) (factory setting +18°C (64°F))					

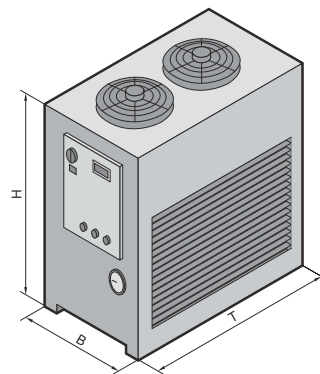
Delivery times available on request.

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



# Chiller Systems

**Freestanding enclosure, cooling capacity 12600 to 32250 W (43,031/110,140 BTU)**



B = Width  
T = Depth

## Technical design:

- Robust industrial enclosures in 2 sizes
- Identical basic enclosure for oil and water chiller systems
- Integration of application-specific equipment on request
- Variable air routing is possible via the left or right sidewall
- Removable sidewalls provide easy and convenient access to components for service and maintenance
- Floating contact for collective fault signal
- Bi-frequency version (50/60 Hz)
- Flow monitor

## Configuration:

Chiller system wired and plumbed 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, lifting eyes and safety modules available on request.

## Certifications,

available on the Internet, log onto [www.rittal-corp.com](http://www.rittal-corp.com).

## Detailed drawing,

available on the Internet, log onto [www.rittal-corp.com](http://www.rittal-corp.com).

## Layout diagram,

see page 130.

## Characteristic curves of pump,

see page 130.

## Options,

see page 126.

Part No. SK		3336.700	3336.710	3336.720	3336.730	3336.740	3336.750
Voltage V, Hz		400, 3~, 50/460, 3~, 60					
Dimensions in mm (inches)	H	1178 (46.4)			1178 (46.4)		
	B	615 (24.2)			715 (28.1)		
	T	1160 (45.7)			1360 (53.5)		
<b>Cooling capacity at</b> <b>T<sub>w</sub> = 10°C (50°F)/T<sub>u</sub> = 32°C (90°F)</b>		<b>8250/10400</b> <b>(28,175/35,518)</b>	<b>11900/15500</b> <b>(40,641/52,935)</b>	<b>13450/16550</b> <b>(45,934/56,521)</b>	<b>15000/18100</b> <b>(51,228/61,814)</b>	<b>17000/20650</b> <b>(58,058/70,523)</b>	<b>20600/26350</b> <b>(70,353/89,990)</b>
<b>T<sub>w</sub> = 18°C (64°F)/T<sub>u</sub> = 32°C (90°F)</b> <b>in W (BTU)</b>		<b>10000/12600</b> <b>(34,152/43,031)</b>	<b>14350/18700</b> <b>(49,008/63,864)</b>	<b>16300/20100</b> <b>(55,667/68,645)</b>	<b>18500/22350</b> <b>(63,181/76,329)</b>	<b>20900/25400</b> <b>(71,377/86,746)</b>	<b>25200/32250</b> <b>(86,063/110,140)</b>
Power consumption		3800 W/5300 W	4800 W/6500 W	5300 W/7100 W	6400 W/9000 W	7100 W/9900 W	8100 W/11500 W
Rated current maximum		10.6 A/10.8 A	13.1 A/13.3 A	14.1 A/14.3 A	16.2 A/18.4 A	18.2 A/20.4 A	19.7 A/22.4 A
Refrigerant		R407C					
P <sub>max.</sub> cooling circuit		27 bar (392 psi)					
Temperature range	Environment	+15°C to +45°C <sup>1)</sup> (59°F to 113°F)					
	Liquid media	+10°C to +25°C (50°F to 77°F)					
Pump capacity		See characteristic curve					
Tank		Made from type 304 stainless steel					
Tank capacity in l (gal)		60 (15.9)				100 (26.4)	
Water connections		1" IG					
Weight in kg (lb)		215 (474.0)	225 (496.0)	235 (518.1)	240 (529.1)	250 (551.2)	260 (573.2)
Color		RAL 7035 (light gray)					
Ratings (electric)		IP 54 (NEMA 12)					
Air displacement of fans		6280 m³/h (3696 cfm)				10880 m³/h (6404 cfm)	
Temperature control		Electronic control with digital display, setting range +10°C to +25°C (50°F to +77°F) (factory setting +18°C (64°F))					

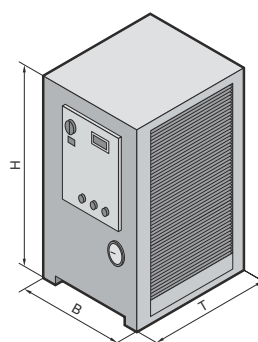
<sup>1)</sup> SK 3336.720 and SK 3336.750 +15°C to +40°C (59°F to 104°F).

Delivery times available on request.

Special voltages and technical modifications available on request.



## Freestanding enclosure for oil, cooling capacity 2550 to 7900 W (8709/26,980 BTU)



B = Width  
T = Depth

### Technical design:

- Robust industrial standard in 2 enclosure sizes
- Identical basic enclosure for oil and water chiller systems
- Variable air routing is possible via the left or right sidewall
- High-capacity gear pump
- Floating contact for collective fault signal
- Integration of application specific equipment on request

### Configuration:

Chiller system wired and plumbed 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, lifting eyes available on request.

### Certifications,

available on the Internet, log onto [www.rittal-corp.com](http://www.rittal-corp.com).

### Detailed drawing,

available on the Internet, log onto [www.rittal-corp.com](http://www.rittal-corp.com).

### Layout diagram,

see page 130.

### Options,

see page 126.

Part No. SK		3337.200	3337.300	3337.500	3337.600	3337.650
Voltage V, Hz		400, 3~, 50				
Dimensions in mm (inches)	H	965 (38.0)		1180 (46.5)		
	B	485 (19.1)		595 (23.4)		
	T	650 (25.6)		800 (31.5)		
Cooling capacity with oil ISO VG 32 T <sub>oil</sub> = 20°C (68°F) T <sub>u</sub> = 32°C (90°F) in W (BTU)		2550 (8708)	3400 (11,612)	5150 (17,588)	6700 (22,882)	7900 (26,980)
Power consumption		1.2 kW	1.6 kW	2.3 kW	2.8 kW	3.6 kW
Rated current maximum		3.1 A	3.7 A	4.9 A	5.4 A	5.7 A
Refrigerant		R134a				
P <sub>max.</sub> cooling circuit		24 bar (348 psi)				
Temperature range	Environment	+15°C to +45°C (59°F to 113°F)				
	Liquid media	+15°C to +35°C (59°F to 95°F)				
Pump capacity at 10 bar		10 l/min (2.6 gal/min)		24 l/min (6.3 gal/min)		
Optional tank		Made from type 304 stainless steel				
Optional Tank capacity in l (gal)		33 (8.7)		57 (15.1)		
Connections		¾" IG		1" IG		
Weight in kg (lb)		103 (224.9)	105 (231.5)	148 (326.3)	150 (330.7)	154 (339.5)
Color		RAL 7035 (light gray)				
Ratings (electric)		IP 54 (NEMA 12)				
Air displacement of fans		1250 m³/h (736 cfm)	1785 m³/h (1051 cfm)	3140 m³/h (1848 cfm)		
Temperature control		Electronic control with digital display, setting range +15°C to +35°C (59°F to +95°F) (factory setting +20°C (68°F))				

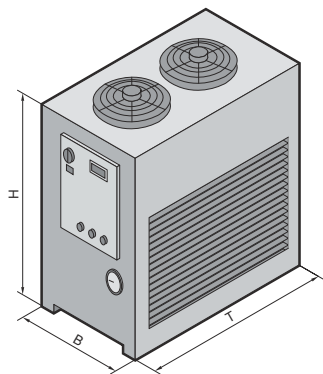
Delivery times available on request.

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



# Chiller Systems

## Freestanding enclosure for oil, cooling capacity 10600 to 26100 W (20,201/89,136 BTU)



B = Width  
T = Depth

### Technical design:

- Robust industrial housing in 2 enclosure sizes
- Identical basic enclosure for oil and water chiller systems
- Variable air routing is possible via the left or right sidewall
- Removable sidewalls provide easy and convenient access to components for service and maintenance
- High-capacity gear pump
- Floating contact for collective fault signal
- Integration of application-specific equipment on request

### Configuration:

Chiller system wired and plumbed 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, lifting eyes available on request.

### Certifications,

available on the Internet, log onto [www.rittal-corp.com](http://www.rittal-corp.com).

### Detailed drawing,

available on the Internet, log onto [www.rittal-corp.com](http://www.rittal-corp.com).

### Layout diagram,

see page 131.

### Options,

see page 126.

Part No. SK		3337.700	3337.710	3337.720	3337.730	3337.740	3337.750
Voltage V, Hz		400, 3~, 50/460, 3~, 60					
Dimensions in mm (inches)	H	1178 (46.4)			1178 (46.4)		
	B	615 (24.2)			715 (28.1)		
	T	1160 (45.7)			1360 (53.5)		
<b>Cooling capacity with oil ISO VG 32</b>							
<b>T<sub>oil</sub> = 20°C (68°F)</b>							
<b>T<sub>u</sub> = 32°C (90°F) in W (BTU)</b>		<b>10600 (36,201)</b>	<b>15150 (51,738)</b>	<b>17200 (58,741)</b>	<b>19250 (65,742)</b>	<b>21600 (73,768)</b>	<b>26100 (89,136)</b>
		<b>12000 (40,982)</b>	<b>17500 (59,766)</b>	<b>20000 (68,304)</b>	<b>22500 (76,842)</b>	<b>25000 (85,379)</b>	<b>30000 (102,455)</b>
Power consumption		5300/6300 W	6400/7700 W	7100/8200 W	8700/10300 W	9600/11300 W	10500/13300 W
Rated current maximum		12 A/12 A	15 A/15 A	16 A/16 A	19 A/20 A	21 A/22 A	22 A/24 A
Refrigerant		R407C					
P <sub>max.</sub> cooling circuit		28 bar (406 psi)					
Temperature range	Environment	+15°C to +45°C (59°F to +113°F) <sup>1)</sup>					
	Liquid media	+15°C to +35°C (59°F to +95°F)					
Pump capacity at 10 bar		45 l/min (11.9 gal/min)				68 l/min (18.0 gal/min)	
Optional tank		Made from type 304 stainless steel					
Optional Tank capacity in l (gal)		60 (15.9)				100 (26.4)	
Connections		1" IG					
Weight in kg (lb)		222 (489.4)	232 (511.4)	242 (533.5)	248 (546.7)	258 (568.8)	268 (590.8)
Color		RAL 7035 (light gray)					
Ratings (electric)		IP 54 (NEMA 12)					
Air displacement of fans		6280 m³/h (3696 cfm)				10880 m³/h (6404 cfm)	
Temperature control		Electronic control with digital display, setting range +15°C to +35°C (59°F to +95°F) (factory setting +20°C (68°F))					

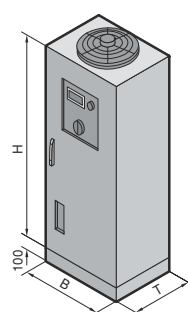
<sup>1)</sup> SK 3337.720 and SK 3337.750 +15°C to +40°C (59°F to +104°F).

Delivery times available on request.

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



**In TS8 modular enclosure system, cooling capacity 6000/7500 W (20,491/25,614 BTU)**



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

## Configuration:

Chiller system wired and plumbed 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 safety module available on request.

## Certifications,

available on the Internet, log onto [www.rittal-corp.com](http://www.rittal-corp.com).

## Detailed drawing,

available on the Internet, log onto [www.rittal-corp.com](http://www.rittal-corp.com).

## Layout diagram,

see page 131.

## Characteristic curves of pump,

see page 131.

## Options,

see page 126.

Part No. SK	3335.060	3335.075
Voltage V, Hz	400, 3~, 50	
Dimensions in mm (inches)	H 2000 (78.7) B 600 (23.6) T 600 (23.6)	
Base/plinth height in mm (inches)	100 (3.9)	
<b>Cooling capacity at</b> <b>T<sub>w</sub> = 10°C (50°F)/T<sub>u</sub> = 32°C (90°F)</b> <b>T<sub>w</sub> = 18°C (64°F)/T<sub>u</sub> = 32°C (90°F) in W (BTU)</b>	<b>4800 (16,393)</b> <b>6000 (20,491)</b>	<b>6000 (20,491)</b> <b>7500 (25,614)</b>
Power consumption	2.4 kW	3.0 kW
Rated current maximum	7.6 A	8.1 A
Refrigerant	R407C	
P <sub>max.</sub> cooling circuit	24 bar (348 psi)	
Temperature range	Environment +10°C to +43°C (50°F to 109°F) Liquid media +10°C to +30°C (50°F to 86°F)	
Pump capacity	See characteristic curve	
Tank	Made from PP plastic	
Tank capacity in l (gal)	80 (21.1)	
Water connections	3/4" IG	
Weight in kg (lb)	180 (396.8)	190 (418.9)
Color	RAL 7035 (light gray)	
Ratings (electric)	IP 54 (NEMA 12)	
Air displacement of fans	4000 m³/h (2354 cfm)	
Temperature control	Electronic control with digital display, setting range +10°C to +30°C (50°F to 86°F) (factory setting +18°C (64°F))	

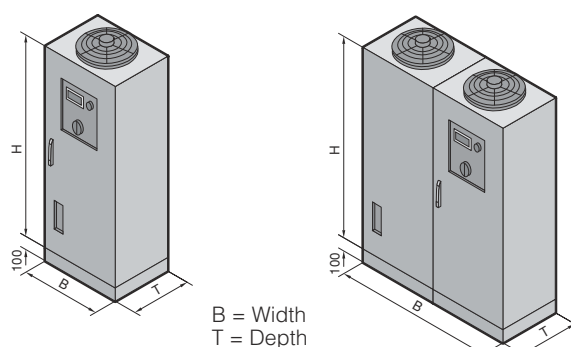
Delivery times available on request.

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



# Chiller Systems

In TS8 modular enclosure system, cooling capacity 10000 to 25000 W (34,152/85,379 BTU)



## 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

## Configuration:

Chiller system wired and plumbed 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 safety module available on request.

## Certifications,

available on the Internet, log onto [www.rittal-corp.com](http://www.rittal-corp.com).

## Detailed drawing,

available on the Internet, log onto [www.rittal-corp.com](http://www.rittal-corp.com).

## Layout diagram,

see page 131.

## Characteristic curves of pump,

see page 131.

## Options,

see page 126.

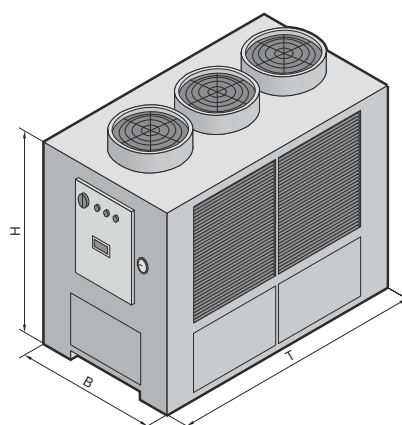
Part No. SK		3335.100	3335.120	3335.150	3335.200	3335.250
Voltage V, Hz		400, 3~, 50				
Dimensions in mm (inches)	H B T	2000 (78.7) 800 (31.5) 600 (23.6)			2000 (78.7) 1200 (47.2) 600 (23.6)	
Base/plinth height in mm (inches)		100 (3.9)				
<b>Cooling capacity at</b> <b>T<sub>w</sub> = 10°C (50°F)/T<sub>u</sub> = 32°C (90°F)</b> <b>T<sub>w</sub> = 18°C (64°F)/T<sub>u</sub> = 32°C (90°F) in W (BTU)</b>		<b>8000 (27,321)</b> <b>10000 (34,152)</b>	<b>10000 (34,152)</b> <b>12000 (40,982)</b>	<b>11500 (39,275)</b> <b>15000 (51,228)</b>	<b>17000 (58,058)</b> <b>20000 (68,304)</b>	<b>22000 (75,134)</b> <b>25000 (85,379)</b>
Power consumption		4.0 kW	4.8 kW	6.0 kW	8.0 kW	10.0 kW
Rated current maximum		12.5 A	17.3 A	18.5 A	23.5 A	27.5 A
Refrigerant		R407C				
P <sub>max.</sub> cooling circuit		24 bar (348 psi)				
Temperature range	Environment	+10°C to +43°C (50°F to 109°F)				
	Liquid media	+10°C to +30°C (50°F to 86°F)				
Pump capacity		See characteristic curve				
Tank		Made from PP plastic				
Tank capacity in l (gal)		120 (31.7)			240 (63.4)	
Water connections		¾" IG			1" IG	
Weight in kg (lb)		250 (551.2)	270 (595.2)	380 (837.8)	530 (1168.5)	560 (1234.6)
Color		RAL 7035 (light gray)				
Ratings (electric)		IP 54 (NEMA 12)				
Air displacement of fans		6000 m³/h (3531 cfm)			8000 m³/h (4709 cfm)	
Temperature control		Electronic control with digital display, setting range +10°C to +30°C (50°F to 86°F) (factory setting +18°C (64°F))				

Delivery times available on request.

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



In industrial enclosure, cooling capacity 38 to 172 kW (131,245 to 587,411 BTU)



B = Width  
T = Depth

## Technical design:

- Robust industrial enclosure
- Optimum service accessibility by removing the panels
- Floating contact for collective fault signal
- With shell-and-tube evaporator, without tank (SK 3339.300 – .500)
- Integration of application-specific equipment on request

## Configuration:

Chiller system wired and plumbed 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.

## Certifications,

available on the Internet, log onto [www.rittal-corp.com](http://www.rittal-corp.com).

## Detailed drawing,

available on the Internet, log onto [www.rittal-corp.com](http://www.rittal-corp.com).

## Layout diagram,

see page 132.

## Characteristic curves of pump,

see page 132.

## Options,

see page 126.

Part No. SK	3339.100	3339.200	3339.250	3339.280	3339.300	3339.400	3339.450	3339.500
Voltage V, Hz	400, 3~, 50/460, 3~, 60		400, 3~, 50					
Dimensions in mm (inches)	H	1400 (55.1)	1800 (70.9)		2000 (78.7)		2000 (78.7)	2200 (86.6)
	B	815 (32.1)	1000 (39.3)		1550 (61.0)		1550 (61.0)	1630 (64.2)
	T	1560 (61.4)	2000 (78.7)		2500 (98.4)		3400 (133.9)	3400 (133.9)
Cooling capacity at $T_w = 10^\circ\text{C}$ (50°F)/ $T_u = 32^\circ\text{C}$ (90°F)	26150/31350 (89,307/ 107,066)	29550/35450 (100,919/ 121,068)	40000 (136,520)	52000 (177,476)	54700 (186,810)	62200 (212,424)	100000 (341,300)	141000 (481,540)
$T_w = 18^\circ\text{C}$ (64°F)/ $T_u = 32^\circ\text{C}$ (90°F) in W (BTU)	32025/38430 (109,371/ 131,245)	36225/43480 (123,715/ 148,492)	46750 (159,557)	59000 (201,367)	66700 (227,792)	75900 (259,212)	110000 (375,430)	172200 (588,094)

Power consumption	15900 W	17600 W	20600 W	36800 W	27000 W	28300 W	50000 W	61000 W
Rated current maximum	24.4 A	26.9 A	36,8 A	46,1 A	67 A	74 A	108 A	108 A
Refrigerant	R407C							
P <sub>max.</sub> cooling circuit	28 bar (406 psi)							
Temperature range	Environment	+15°C to +45°C (59°F to +113°F)						
	Liquid media	+10°C to +25°C (50°F to +77°F)						
Pump capacity	See characteristic curve							
Tank	Made from type 304 stainless steel							
Tank capacity in l (gal)	150 (39.6)		220 (58.1)		Pressure-sealed			
Water connections	1 1/4" IG		1 1/2" IG		2" IG		3" IG	
Weight in kg (lb)	280 (617.3)	300 (661.3)	680 (1499.1)	740 (7631.2)	800 (1763.7)	850 (1873.9)	950 (2094.4)	2100 (4629.7)
Color	RAL 7035 (light gray)							
Ratings (electric)	IP 44							
Air displacement of fans	18000 m³/h (10,594 cfm)		32000 m³/h (18,834 cfm)				40000 m³/h (23,543 cfm)	48000 m³/h (28,252 cfm)
Temperature control	Electronic control with digital display, setting range +10°C to +25°C (50°F to 77°F) (factory setting +18°C (64°F))							

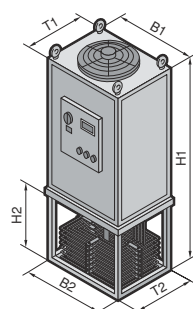
Delivery times available on request.

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



# Immersible Chiller Systems

For oil, cooling capacity 2700 to 6300 W (9121/21,516 BTU)



B = Width  
T = Depth

## Technical design:

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

## Configuration:

Immersible chiller system wired and plumbed ready for connection, **metal filter, eyebolts**, with multilingual documentation, including functional diagram and wiring plans.

## Certifications,

available on the Internet, log onto [www.rittal-corp.com](http://www.rittal-corp.com).

## Detailed drawing,

available on the Internet, log onto [www.rittal-corp.com](http://www.rittal-corp.com).

## Layout diagram,

see page 132.

## Options,

see page 126.

Part No. SK for oil		3338.020	3338.040	3338.060	3338.080
Voltage V, Hz		400, 3~, 50/460, 3~, 60			
Cooling capacity at T <sub>oil</sub> = 20°C (68°F)/ T <sub>u</sub> = 32°C (90°F) in W (BTU)		2400/2700 (8196/9121)	3200/3600 (10,929/12,295)	4600/5200 (15,710/17,759)	5600/6300 (19,125/21,516)
Dimensions in mm (inches)	H1	1650 (65.0)			
	B1	785 (31.0)			
	T1	785 (31.0)			
Dimensions of immersible part in mm (inches)	B2	719 (28.3)			
	T2	719 (28.3)			
Immersion depth in mm (inches)	H2	550 (21.7)			
Minimum medium level with flat evaporator coil, in mm (inches)		205 (8.1)		280 (11.0)	

Power consumption		2.2 kW/2.7 kW	2.5 kW/3.1 kW	3.5 kW/4.3 kW	3.9 kW/4.7 kW
Rated current maximum		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 <sub>max.</sub> cooling circuit		24 bar (348 psi)			
Temperature range	Environment	+15°C to +42°C (59°F to 108°F)			
	Liquid media	+10°C to +25°C (50°F to 77°F)			
Weight in kg (lb)		133 (293.2)	143 (315.3)	158 (348.3)	173 (381.4)
Color		RAL 7035 (light gray)			
Ratings (electric)		IP 44			
Air displacement of fans		1500/1560 m³/h (883/918 cfm)		2200/2350 m³/h (1295/1383 cfm)	
Temperature control		Electronic control with digital display, setting range +10°C to +25°C (50°F to +77°F) (factory setting +20°C (68°F))			

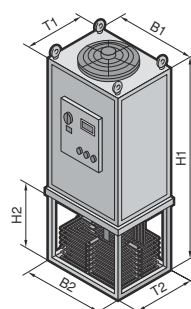
Delivery times available on request.

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



# Immersible Chiller Systems

For oil, cooling capacity 9500 to 19400 W (32,444/66,254 BTU)



B = Width  
T = Depth

## Technical design:

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

## Configuration:

Immersible chiller system wired and plumbed ready for connection, **metal filter, eyebolts**, with multilingual documentation, including functional diagram and wiring plans.

## Certifications,

available on the Internet, log onto [www.rittal-corp.com](http://www.rittal-corp.com).

## Detailed drawing,

available on the Internet, log onto [www.rittal-corp.com](http://www.rittal-corp.com).

## Layout diagram,

see page 132.

## Options,

see page 126.

Part No. SK for oil		3338.100	3338.120	3338.140	3338.160	3338.180	3338.200
Voltage V, Hz		400, 3~, 50/460, 3~, 60					
Cooling capacity at T <sub>oil</sub> = 20°C (68°F)/T <sub>u</sub> = 32°C (90°F) in W (BTU)		8500/9500 (29,029/32,444)	10500/11800 (35,859/40,299)	12000/13400 (40,982/45,763)	13600/15200 (46,446/51,911)	15300/17100 (52,252/58,400)	17300/19400 (59,083/66,254)
Dimensions in mm (inches)	H1	1650 (65.0)					
	B1	785 (30.9)					
	T1	785 (30.9)					
Dimensions of immersible part in mm (inches)	B2	719 (28.3)					
	T2	719 (28.3)					
Immersion depth in mm (inches)	H2	550 (21.7)					
Minimum medium level with flat evaporator coil, in mm (inches)		330 (13.0)	380 (15.0)		430 (16.9)		

Power consumption		6.2 kW/7.4 kW	6.8 kW/8.1 kW	7.6 kW/9.0 kW	8.4 kW/10.0 kW	9.3 kW/11.0 kW	10.4 kW/12.3 kW
Rated current maximum		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 <sub>max.</sub> cooling circuit		27 bar (392 psi)					
Temperature range	Environment	+15°C to +42°C (59°F to 108°F)					
	Liquid media	+10°C to +25°C (50°F to +77°F)					
Weight in kg (lb)		183 (403.4)	203 (447.5)	228 (502.7)	248 (546.7)	253 (557.8)	263 (579.8)
Color		RAL 7035 (light gray)					
Ratings (electric)		IP 54 (NEMA 12)					
Air displacement of fans		7200/7480 m³/h (4238/4403 cfm)			7900/8480 m³/h (4650/4991 cfm)		
Temperature control		Electronic control with digital display, setting range +10°C to +25°C (50°F to +77°F) (factory setting +20°C (68°F))					

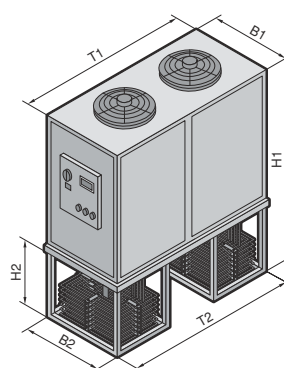
Delivery times available on request.

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



# Immersible Chiller Systems

For oil, cooling capacity 23200 to 87200 W (79,232/297,804 BTU)



B = Width  
T = Depth

## Technical design:

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

## Configuration:

Immersible chiller system wired and plumbed ready for connection, **metal filter, eyebolts**, with multilingual documentation, including functional diagram and wiring plans.

## Certifications,

available on the Internet, log onto [www.rittal-corp.com](http://www.rittal-corp.com).

## Detailed drawing,

available on the Internet, log onto [www.rittal-corp.com](http://www.rittal-corp.com).

## Layout diagram,

see page 132.

## Options,

see page 126.

Part No. SK for oil		3338.220	3338.240	3338.260	3338.280	3338.300	3338.320	3338.340	3338.360
Voltage V, Hz		400, 3~, 50/460, 3~, 60							
Cooling capacity at T <sub>oil</sub> = 20°C (68°F)/T <sub>u</sub> = 32°C (90°F) in W (BTU)		20700/23200 (70,694/ 79,232)	30800/34500 (105,188/ 117,824)	34900/39100 (119,190/ 133,415)	44500/49800 (151,976/ 170,076)	48600/54400 (165,978/ 185,786)	60600/67900 (206,960/ 231,891)	72600/81300 (247,942/ 277,654)	77900/87200 (266,042/ 297,804)
Dimensions in mm (inches)	H1	1650 (65.0) 785 (30.9) 1830 (72.0)			1650 (65.0) 1830 (72.0) 1830 (72.0)				
	B1								
	T1								
Dimensions of immersible part in mm (inches)	B2	719 (28.3) 1764 (69.4)			1764 (69.4) 1764 (69.4)				
	T2								
Immersion depth in mm (inches)	H2	550 (21.7)							
Minimum medium level with flat evaporator coil, in mm (inches)		380 (15.0)	430 (16.9)		380 (15.0)		430 (16.9)		
Power consumption		12.9/16.1 kW	18.0 /22.0 kW	20.1 /24.8 kW	26.4 /31.4 kW	28.9/34.4 kW	34.4 /41.1 kW	39.9 /47.8 kW	42.5/50.9 kW
Rated current maximum		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 <sub>max.</sub> cooling circuit		27 bar (392 psi)							
Temperature range	Environment	+15°C to +45°C (59°F to 113°F)							
	Liquid media	+10°C to +25°C (50°F to 77°F)							
Weight in kg (lb)		305 (672.4)	380 (837.8)		425 (937.0)			435 (959.0)	455 (1003.1)
Color		RAL 7035 (light gray)							
Ratings (electric)		IP 54 (NEMA 12)							
Air displacement of fans		15000/15600 m³/h (8829/9182 cfm)			30000/31200 m³/h (17,657/18,364 cfm)				
Temperature control		Electronic control with digital display, setting range +10°C to +25°C (50°F to +77°F) (factory setting +20°C (68°F))							

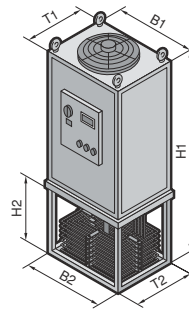
Delivery times available on request.

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



# Immersible Chiller Systems

For emulsion, cooling capacity 2700 to 6300 W (9221/21,515 BTU)



B = Width  
T = Depth

## Technical design:

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

## Configuration:

Immersible chiller system wired and plumbed ready for connection, **metal filter, eyebolts**, with multilingual documentation, including functional diagram and wiring plans.

## Certifications,

available on the Internet, log onto [www.rittal-corp.com](http://www.rittal-corp.com).

## Detailed drawing,

available on the Internet, log onto [www.rittal-corp.com](http://www.rittal-corp.com).

**Layout diagram,** see page 132.

**Options,** see page 126.

Part No. SK for emulsion		3338.500	3338.520	3338.540	3338.560
Voltage V, Hz		400, 3~, 50/460, 3~, 60			
Cooling capacity at T <sub>oil</sub> = 20°C (68°F)/T <sub>u</sub> = 32°C (90°F) in W (BTU)		2400/2700 (8196/9221)	3200/3600 (10,929/12,295)	4600/5200 (15,710/17,759)	5600/6300 (19,125/21,515)
Dimensions in mm (inches)	H1	1650 (65.0)			
	B1	785 (30.9)			
	T1	785 (30.9)			
Dimensions of immersible part in mm (inches)	B2	719 (28.3)			
	T2	719 (28.3)			
Immersion depth in mm (inches)	H2	550 (21.7)			
Minimum medium level with flat evaporator coil, in mm (inches)		180 (7.1)		205 (8.1)	
Power consumption		2.4 kW/3.0 kW	2.7 kW/3.4 kW	3.7 kW/4.6 kW	4.1 kW/5.0 kW
Rated current maximum		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 <sub>max.</sub> cooling circuit		24 bar (348 psi)			
Temperature range	Environment	+15°C to +42°C (59°F to 108°F)			
	Liquid media	+10°C to +25°C (50°F to 77°F)			
Weight in kg (lb)		130 (286.6)	140 (308.6)	155 (341.7)	170 (374.8)
Color		RAL 7035 (light gray)			
Ratings (electric)		IP 44			
Air displacement of fans		1500/1560 m³/h (883/918 cfm)		2200/2350 m³/h (1295/1384 cfm)	
Temperature control		Electronic control with digital display, setting range +10°C to +25°C (50°F to +77°F) (factory setting +20°C (68°F))			

Delivery times available on request.

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

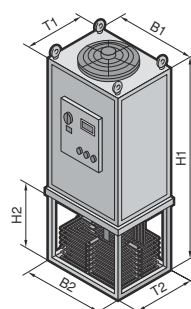
B  
4.1

Immersible Chiller Systems



# Immersible Chiller Systems

For emulsion, cooling capacity 9500 to 19400 W (32,445/66,254 BTU)



B = Width  
T = Depth

## Technical design:

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

## Configuration:

Immersible chiller system wired and plumbed ready for connection, **metal filter, eyebolts**, with multilingual documentation, including functional diagram and wiring plans.

## Certifications,

available on the Internet, log onto [www.rittal-corp.com](http://www.rittal-corp.com).

## Detailed drawing,

available on the Internet, log onto [www.rittal-corp.com](http://www.rittal-corp.com).

## Layout diagram,

see page 132.

## Options,

see page 126.

Part No. SK for emulsion		3338.580	3338.600	3338.620	3338.640	3338.660	3338.680
Voltage V, Hz		400, 3~, 50/460, 3~, 60					
Cooling capacity at T <sub>EM</sub> = 20°C (68°F)/T <sub>U</sub> = 32°C (90°F) in W (BTU)		8500/9500 (29,029/32,444)	10500/11800 (35,859/40,299)	12000/13400 (40,982/45,763)	13600/15200 (46,446/51,911)	15300/17100 (52,252/58,400)	17300/19400 (59,083/66,254)
Dimensions in mm (inches)	H1	1650 (65.0)					
	B1	785 (30.9)					
	T1	785 (30.9)					
Dimensions of immersible part in mm (inches)	B2	719 (28.3)					
	T2	719 (28.3)					
Immersion depth in mm (inches)	H2	550 (21.7)					
Minimum medium level with flat evaporator coil, in mm (inches)		280 (11.0)			330 (13.0)		
Power consumption		6.4/7.6 kW	7.0/8.3 kW	7.8/9.5 kW	8.6/10.2 kW	9.5/11.3 kW	10.6/12.6 kW
Rated current maximum		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 <sub>max.</sub> cooling circuit		27 bar (392 psi)					
Temperature range	Environment	+15°C to +42°C (59°F to 108°F)					
	Liquid media	+10°C to +25°C (50°F to 77°F)					
Weight in kg (lb)		180 (396.8)	200 (440.9)	225 (496.0)	245 (540.1)	250 (551.2)	260 (573.2)
Color		RAL 7035 (light gray)					
Ratings (electric)		IP 54 (NEMA 12)					
Air displacement of fans		7200/7480 m³/h (4238/4403 cfm)			7900/8480 m³/h (4650/4944 cfm)		
Temperature control		Electronic control with digital display, setting range +10°C to +25°C (50°F to +77°F) (factory setting +20°C (68°F))					

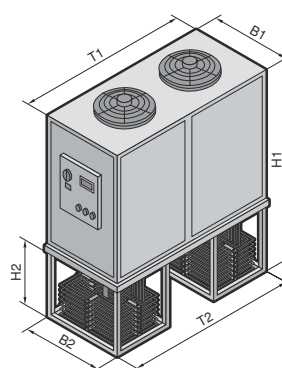
Delivery times available on request.

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



# Immersible Chiller Systems

For emulsion, cooling capacity 23200 to 87200 W (79,232/297,804 BTU)



B = Width  
T = Depth

## Technical design:

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

## Configuration:

Immersible chiller system wired and plumbed ready for connection, **metal filter, eyebolts**, with multilingual documentation, including functional diagram and wiring plans.

## Certifications,

available on the Internet, log onto [www.rittal-corp.com](http://www.rittal-corp.com).

## Detailed drawing,

available on the Internet, log onto [www.rittal-corp.com](http://www.rittal-corp.com).

## Layout diagram,

see page 132.

## Options,

see page 126.

Part No. SK for emulsion		3338.700	3338.720	3338.740	3338.760	3338.780	3338.800	3338.820	3338.840
Voltage V, Hz		400, 3~, 50/460, 3~, 60							
Cooling capacity at T <sub>EM</sub> = 20°C (68°F)/T <sub>u</sub> = 32°C (90°F) in W (BTU)		20700/23200 (70,694/ 79,232)	30800/34500 (108,186/ 117,824)	34900/39100 (119,190/ 133,534)	44500/49800 (151,976/ 170,076)	48600/54400 (165,978/ 185,786)	60600/67900 (206,960/ 231,891)	72600/81300 (247,942/ 277,654)	77900/87200 (266,042/ 297,804)
Dimensions in mm (inches)	H1	1650 (65.0)			1650 (65.0)				
	B1	785 (462.0)			1830 (72.0)				
	T1	1830 (72.0)			1830 (72.0)				
Dimensions of immersible part in mm (inches)	B1	719 (426.2)			1764 (1038.2)				
	T2	1764 (1050.0)			1764 (1038.2)				
Immersion depth in mm (inches)	H2	550 (323.7)							
Minimum medium level with flat evaporator coil, in mm (inches)		280 (164.8)	330 (194.2)		280 (164.8)			330 (194.2)	380 (223.7)
Power consumption		13.3 kW/ 16.6 kW	18.4 kW/ 22.5 kW	20.5 kW/ 25.3 kW	27.1 kW/ 27.8 kW	29.7 kW/ 35.4 kW	35.2 kW/ 42.1 kW	40.7 kW/ 48.8 kW	43.3 kW/ 51.9 kW
Rated current maximum		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 <sub>max.</sub> cooling circuit		27 bar (392 psi)							
Temperature range	Environment	+15°C to +45°C (59°F to 113°F)							
	Liquid media	+10°C to +25°C (50°F to 77°F)							
Weight in kg (lb)		300 (661.8)	375 (826.7)		420 (925.9)		420 (925.9)	430 (948.0)	450 (992.1)
Color		RAL 7035 (light gray)							
Ratings (electric)		IP 54 (NEMA 12)							
Air displacement of fans		15000/15600 m³/h (8829/9182 cfm)			30000/31200 m³/h (17,657/18,364 cfm)				
Temperature control		Electronic control with digital display, setting range +10°C to +25°C (50°F to +77°F) (factory setting +20°C (68°F))							

Delivery times available on request.

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



# Heat Exchangers

## Features of air/air heat exchangers

Rittal's **air/air heat exchangers** are perfect for environments where the ambient air temperature is at or below the desired interior temperature of the enclosure. Two separate air circuits prevent dust and pollutants present in the ambient air to ingress the enclosure interior.

The air of the enclosure interior may be cooled to below the level of the external temperature by using **air/water heat exchangers** with a central chiller 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.

### Platform concept/installation



**Identical installation cutouts**  
for various output categories.



**Easily retro-fitted**  
Due to the low weight, simple assembly cutouts and problem-



free attachment of the heat exchangers, a cabinet or enclosure is easily retro-fitted.

### Servicing/security



**Simple maintenance**  
The heat exchanger module removes easily for cleaning.

The cleverly designed structure enables fast, economical maintenance.

### Benefits:

- Specific thermal output from 17.5 W/C to 90 W/C
- External and internal circuit may be controlled separately
- Mounting cutouts and enclosure dimensions identical to TopTherm wall-mounted air conditioners
- Suitable for external and internal mounting
- Top design identical to TopTherm wall-mounted air conditioners

### Important:

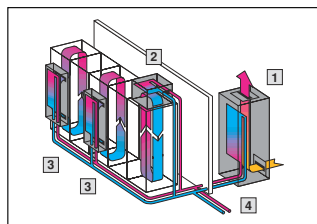
- The temperature difference between the room temperature and enclosure internal temperature will have a decisive effect on the heat loss that may be dissipated.

**For calculation bases, refer to our website:**  
[www.rittal-corp.com](http://www.rittal-corp.com)



## Features of air/water heat exchangers

### Even suitable for use in extreme conditions



Example: Parallel connection of air/water heat exchangers with cold water supplied by a chiller system.

Overflow valves and bypass controls should be integrated into the chiller system and the customer's own pipeline system respectively.

- 1 Chiller system
- 2 Air/water heat exchanger, roof-mounted
- 3 Air/water heat exchanger, wall-mounted
- 4 Additional cooling water circuit for machine cooling

### Ideal for any location

If direct dissipation of heat loss to the ambient air is not desired or ineffective due to confined spaces, the air/water heat exchangers will provide the ideal solution. By spatially separating the exchanger from the chiller system, highly individual and effective solutions for cooling individual enclosures or bayed enclosure suites can be achieved.

### Versions



#### Roof-mount

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



#### Wall-mount

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



#### Sidewall

Economical use: Air/water heat exchanger as a sidewall in the TS8 modular enclosure system.

### Controller



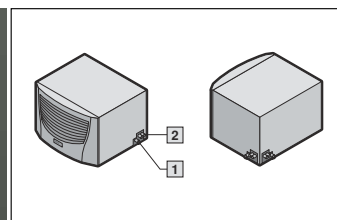
#### Basic controller:

- Visualisation of the operating status by a LED display
- Switching hysteresis: 5 K
- Floating fault signal contact in case of over temperature
- Setpoint adjustable from the outside by a potentiometer (setting range 20° – 55°C (68° – 131°F))



#### 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 such as CMC



#### Flexible water logistics and condensate management

Any condensate is discharged by one of the two tube connectors (1/2") and a discharge hose, which should be laid with a gradient to ensure that there are no kinks. In order to avoid increased condensation, the cooling water temperature should be adapted to match the required cooling capacity.

- 1 Condensate discharge (flexible)
- 2 Cooling water connection (flexible)

### Benefits:

- Useful cooling capacity from 600 to 5000 W (2049 to 17,076 BTU)
- Suitable for use even in extreme conditions and ambient temperatures up to +70°C (158°F)
- Also available with all water-carrying parts made from type 316 stainless steel (V4A)
- System for TS8 modular enclosure system integrated into the sidewall

### Important:

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

**For calculation formulas and requirements regarding water quality, refer to our website: [www.rittal-corp.com](http://www.rittal-corp.com)**



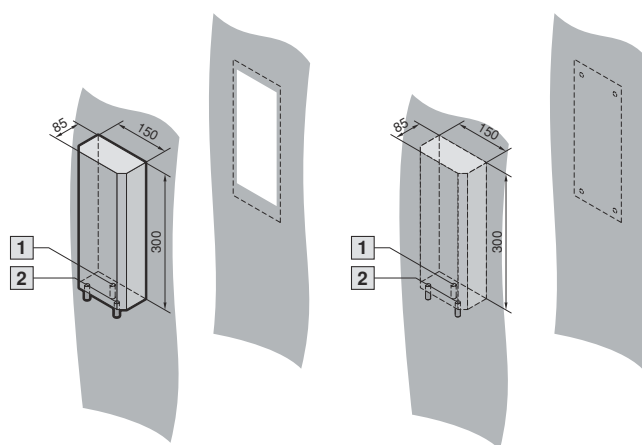
# Air/Water Heat Exchanger

**Micro, wall-mounted, useful cooling capacity 300 W (1025 BTU)**



Especially for selective cooling of heat pockets in small enclosures.

**Configuration:**  
Fully wired ready for connection, including drilling template and assembly parts.



- 1 Condensate discharge
- 2 Cooling water connection (quick-release fastener)

**Certifications,**  
see page 16.

**Detailed drawing,**  
see page 133.

**Performance diagrams,**  
available on the Internet,  
log onto [www.rittal-corp.com](http://www.rittal-corp.com).

Part No. SK		3212.230	3212.115 <sup>1)</sup>	3212.024
Voltage V, Hz		230, 50/60	115, 50/60	24 V (DC)
Dimensions in mm (inches)	H	300 (11.8)		
	W	150 (5.9)		
	D	85 (3.3)		
Useful cooling capacity in W (BTU)	L 35 W 10 200 l/h (52.8 gal/h)	300 (1025)		
Rated current maximum		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 (34°F to 86°F)		
Permissible operating pressure p. max.		1 to 10 bar (15 to 145 psi)		
Temperature range		+1°C to +70°C (34°F to 158°F)		
Ratings to EN 60 529/10.91		IP 55 (NEMA 3R) <sup>2)</sup>		
Duty cycle		100 %		
Type of connection		Connection clamp		
Weight in kg (lb)		3 (6.6)		
Color		RAL 7035 (light gray)		
Air displacement of fans (unimpeded air flow)		280 m³/h (165 cfm)		250 m³/h (147 cfm)
Accessories		PU		Page
Temperature indicator	1	3114.100		103
Door-operated switch	1	4127.000		–
Condensate hose	1	3301.612		108
Flow regulator valve	1	see accessories		110

<sup>1)</sup> Delivery times available on request.

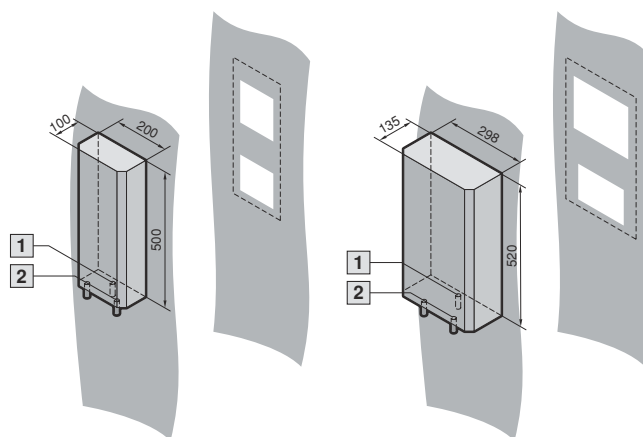
<sup>2)</sup> IP 65 (NEMA 4X) available on request.

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



# Air/Water Heat Exchanger

Wall-mounting, useful cooling capacity 600/1000 W (2049/3415 BTU)



## Configuration:

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



## Also required:

Cooling water system such as Rittal chiller systems, from page 50.

1 Condensate discharge 1/2"

2 Cooling water connection 1/2"

**Certifications,**  
see page 17.

**Detailed drawing,**  
see page 133.

**Performance diagrams,**  
available on the Internet,  
log onto [www.rittal-corp.com](http://www.rittal-corp.com).

Part No. SK		3214.100	3217.100
Voltage V, Hz		230, 50/60	
Dimensions in mm (inches)	H	500 (19.7)	520 (20.5)
	W	200 (7.9)	298 (11.7)
	D	100 (3.9)	135 (5.3)
Useful cooling capacity in W (BTU)	L 35 W 10, 200 l/h (52.8 gal/h)	600 (2049)	1000 (3415)
	L 35 W 10, 400 l/h (105 gal/h)	650 (2220)	1100 (3757)
Rated current maximum		0.17 A/0.18 A	
Pre-fuse T		2.0 A	
Cooling medium		Water (refer to specifications on the Internet; assembly instructions chapter 12)	
Water inlet temperature		> +1°C to +30°C (34°F to 86°F)	
Permissible operating pressure p. max.		1 to 10 bar (14.5 to 145 psi)	
Temperature range		+1°C to +70°C (34°F to 158°F)	
Ratings to EN 60 529/10.91		IP 55 (NEMA 3R) <sup>1)</sup>	
Duty cycle		100 %	
Type of connection		Terminal strip	
Weight in kg (lb)		7 (15.4)	9.5 (20.9)
Color		RAL 7032 (pebble gray)	
Air displacement of fans		120 m³/h (71 cfm)	240 m³/h (141 cfm)
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 (68°F to 140°F)(factory setting +35°C (95°F))	
Accessories		PU	Page
Temperature indicator	1	3114.100	103
Door-operated switch	1	4127.000	–
Condensate hose	1	3301.612	108
Flow regulator valve	1	see accessories	110

<sup>1)</sup> IP 65 (NEMA 4X) available on request.

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

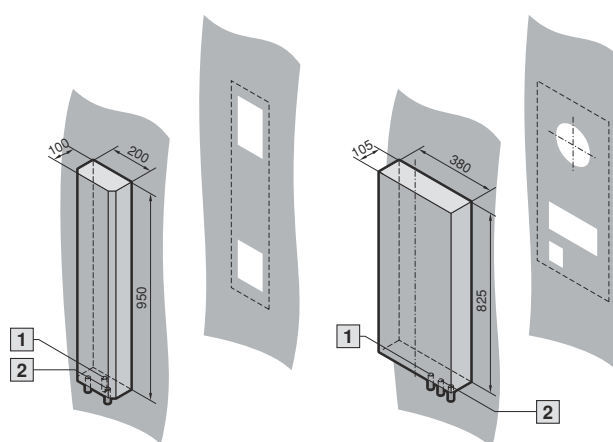
B  
4.1

Air/Water Heat Exchanger



# Air/Water Heat Exchanger

Wall-mounting, useful cooling capacity 1250/1540 W (4869/5259 BTU)



## Configuration:

Fully wired ready for connection with terminal strip or connection cable (3 m (118")), including drilling template, sealing mat and assembly parts.



## Also required:

Cooling water system such as Rittal chiller systems, from page 50.

1 Condensate discharge 1/2"

2 Cooling water connection 1/2"

**Certifications,**  
see page 17.

**Detailed drawing,**  
see page 134.

**Performance diagrams,**  
available on the Internet,  
log onto [www.rittal-corp.com](http://www.rittal-corp.com).

Part No. SK		3215.100	3247.000
Voltage V, Hz		230, 50/60	
Dimensions in mm (inches)	H	950 (37.4)	825 (32.5)
	W	200 (7.9)	380 (15.0)
	D	100 (3.9)	105 (4.1)
Useful cooling capacity in W (BTU)	L 35 W 10, 200 l/h (52.8 gal/h)	1250 (4269)	1540 (5259)
	L 35 W 10, 400 l/h (105 gal/h)	1300 (4440)	1700 (5806)
Rated current maximum		0.38 A/0.4 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 (34°F to 86°F)	
Permissible operating pressure p. max.		1 to 10 bar (14.5 to 145 psi)	
Temperature range		+1°C to +70°C (34°F to 158°F)	
Ratings to EN 60 529/10.91		IP 55 (NEMA 3R) <sup>1)</sup>	
Duty cycle		100 %	
Type of connection	Terminal strip	Connection cable 3 m (118")	
Weight in kg (lb)		13 (28.7)	
Color		RAL 7032 (pepple gray)	
Air displacement of fans		200 m³/h (118 cfm)	
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 (68°F to 140°F) (factory setting +35°C (95°F))	
Accessories		PU	Page
Temperature indicator	1	3114.100	103
Door-operated switch	1	4127.000	–
Condensate hose	1	3301.612	108
Flow regulator valve	1	see accessories	110

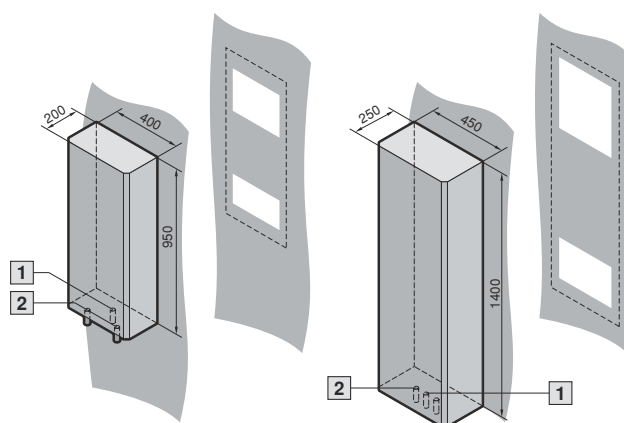
<sup>1)</sup> IP 65 (NEMA 4X) available on request.

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



# Air/Water Heat Exchanger

Wall-mounted, useful cooling capacity 2250/3000/4500/7000 W (7684/10,246/15,368/23,885 BTU)



## Configuration:

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



## Also required:

Cooling water system such as Rittal chiller systems, from page 50.

1 Condensate discharge 1/2"

2 Cooling water connection 1/2"

**Certifications,**  
see page 17.

**Detailed drawing,**  
see page 134.

**Performance diagrams,**  
available on the Internet,  
log onto [www.rittal-corp.com](http://www.rittal-corp.com).

Part No. SK	3218.104 <sup>1)</sup>	3218.100	3216.100	3216.480
Voltage V, Hz	230, 50/60			400, 3~, 50/60 480, 3~, 60
Dimensions in mm (inches)	H	950 (37.4)	1400 (55.1) 450 (17.7) 250 (9.8)	1800 (70.9)
	W	400 (15.7)		450 (17.7)
	D	200 (7.9)		300 (11.8)
Useful cooling capacity in W (BTU)	L 35 W 10, 200 l/h (52.8 gal/h)	2250 (7684)	3000 (10,246)	4500 (15,368)
	L 35 W 10, 400 l/h (105 gal/h)	2650 (9050)	3500 (11,953)	5000 (17,076)
Rated current maximum	0.42 A/0.48 A		1.0 A/1.1 A	1,4 A/1,6 A 1,2 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 (34°F to 86°F)			
Permissible operating pressure p. max.	1 to 10 bar (14.5 to 145 psi)			
Temperature range	+1°C to +70°C (34°F to 158°F)			
Ratings to EN 60 529/10.91	IP 55 (NEMA 3R) <sup>2)</sup>			
Duty cycle	100 %			
Type of connection	Terminal strip			
Weight in kg (lb)	19 (41.9)	21 (46.3)	56 (123.5)	79 (174.2)
Color	RAL 7032 (pebble gray)			
Air displacement of fans	240 m³/h (141 cfm)	450 m³/h (265 cfm)	1000 m³/h (589 cfm)	2400 m³/h (4078 cfm)
Temperature control	Thermostat-controlled magnetic valve			
<b>Accessories</b>		PU		Page
Temperature indicator	1	3114.100		103
Door-operated switch	1	4127.000		–
Condensate hose	1	3301.612		108
Flow regulator valve	1	see accessories		110

<sup>1)</sup> Delivery times available on request, all water-carrying parts V4A 1.4571 (type 316 stainless steel).

<sup>2)</sup> IP 65 (NEMA 4X) available on request.

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

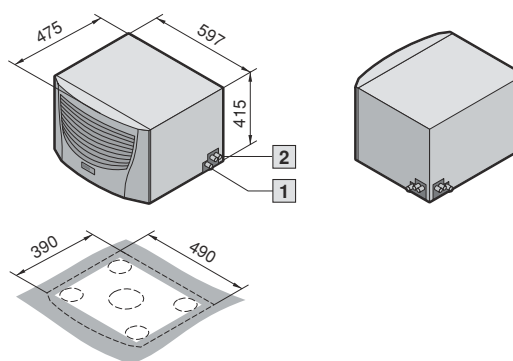
B  
4.1

Air/Water Heat Exchanger



# Air/Water Heat Exchanger

Roof-mounted, useful cooling capacity 2500 W (8538 BTU)



## Configuration:

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

- 1 Condensate discharge (flexible)
- 2 Cooling water connection (flexible)

## Certifications,

see page 17.

## Detailed drawing,

see page 135.

## Performance diagrams,

available on the Internet log onto [www.rittal-corp.com](http://www.rittal-corp.com).

## 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



## ! Also required:

Cooling water system such as Rittal chiller systems, from page 50.

	Water-carrying parts			
Part No. SK basic controller	CuAL	3209.100	3209.110	3209.140 <sup>1)</sup>
Part No. SK comfort controller	CuAL	3209.500	3209.510	3209.540 <sup>1)</sup>
Useful cooling capacity CuAL in W (BTU)		L 35 W 10, 400 l/h (105 gal/h) 2500 (8538)		
Part No. SK basic controller	V4A	3209.104 <sup>1)</sup>	3209.114 <sup>1)</sup>	3209.144 <sup>1)</sup>
Part No. SK comfort controller	(type 316 stainless steel)	3209.504 <sup>1)</sup>	3209.514 <sup>1)</sup>	3209.544 <sup>1)</sup>
Useful cooling capacity V4A in W (BTU)		L 35 W 10, 400 l/h (105 gal/h) 1875 (6403)		
Voltage V, Hz		230, 50/60	115, 50/60	400, 2~, 50/60
Dimensions in mm (inches)	H	415 (16.3)		
	W	597 (23.5)		
	D	475 (18.7)		

Rated current maximum	0.40 A	0.85 A	0.25 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 (34°F to 86°F)		
Permissible operating pressure p. max.	1 to 10 bar (14.5 to 145 psi)		
Temperature range	+1°C to +70°C (34°F to 158°F)		
Ratings to EN 60 529/10.91	IP 55 (NEMA 3R) <sup>2)</sup>		
Duty cycle	100 %		
Type of connection	Plug-in terminal strip		
Weight in kg (lb)	23.5 (51.8)	27.5 (60.6)	27.5 (60.6)
Color	RAL 7035 (light gray)		
Air displacement of fans (unimpeded air flow)	1030 m³/h (606 cfm)		
Temperature control	Basic or comfort controller (factory setting +35°C (95°F))		

Accessories	PU	Page
Door-operated switch	1 4127.000	–
SK bus system for comfort controller	1 3124.100	106
Interface card for comfort controller	1 3124.200	105
Air ducting system	1 3286.870	101
Cover stoppers for interior air outlet	1 3286.880	101
Condensate hose	1 3301.612	108
Flow regulator valve	1 see accessories	110

<sup>1)</sup> Delivery times available on request.

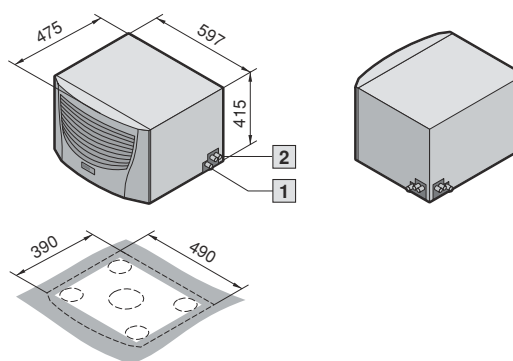
<sup>2)</sup> IP 65 (NEMA 4X) available on request.

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



# Air/Water Heat Exchanger

Roof-mounted, useful cooling capacity 4000 W (13,661 BTU)



## Configuration:

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



## Also required:

Cooling water system such as Rittal chiller systems, from page 50.

- 1 Condensate discharge (flexible)
- 2 Cooling water connection (flexible)

## Certifications,

see page 17.

## Detailed drawing,

see page 135.

## Performance diagrams,

available on the Internet, log onto [www.rittal-cop.com](http://www.rittal-cop.com).

## 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				
Part No. SK basic controller	CuAL	3210.100	3210.110	3210.140 <sup>1)</sup>
Part No. SK comfort controller	CuAL	3210.500	3210.510	3210.540 <sup>1)</sup>
Useful cooling capacity CuAL in W (BTU)	L 35 W 10, 400 l/h (105 gal/h)	4000 (13,661)		
Part No. SK basic controller	V4A	3210.104 <sup>1)</sup>	3210.114 <sup>1)</sup>	3210.144 <sup>1)</sup>
Part No. SK comfort controller	(type 316 stainless steel)	3210.504 <sup>1)</sup>	3210.514 <sup>1)</sup>	3210.544 <sup>1)</sup>
Useful cooling capacity V4A in W (BTU)	L 35 W 10, 400 l/h (105 gal/h)	3000 (10,246)		
Voltage V, Hz		230, 50/60	115, 50/60	400, 2~, 50/60
Dimensions in mm (inches)	H	415 (16.3)		
	W	597 (23.5)		
	D	475 (18.7)		

Rated current maximum	0.44 A	0.9 A	0.25 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 (34°F to 86°F)		
Permissible operating pressure p. max.	1 to 10 bar (14.5 to 145 psi)		
Temperature range	+1°C to +70°C (34°F to 158°F)		
Ratings to EN 60 529/10.91	IP 55 (NEMA 3R) <sup>2)</sup>		
Duty cycle	100 %		
Type of connection	Plug-in terminal strip		
Weight in kg (lb)	25.5 (56.2)	29.5 (65.0)	29.5 (65.0)
Color	RAL 7035 (light gray)		
Air displacement of fans (unimpeded air flow)	925 m³/h (544 cfm)		
Temperature control	Basic or comfort controller (factory setting +35°C (95°F))		

Accessories	PU		Page
Door-operated switch	1	4127.000	–
SK bus system for comfort controller	1	3124.100	106
Interface card for comfort controller	1	3124.200	105
Air ducting system	1	3286.870	101
Cover stoppers for interior air outlet	1	3286.880	101
Condensate hose	1	3301.612	108
Flow regulator valve	1	see accessories	110

<sup>1)</sup> Delivery times available on request.

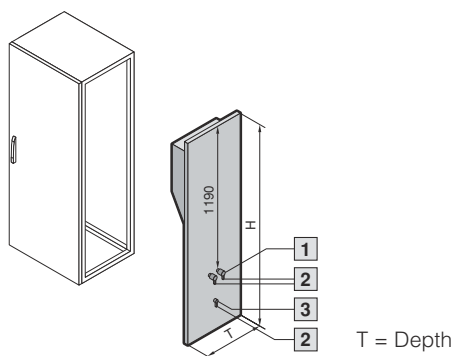
<sup>2)</sup> IP 65 (NEMA 4X) available on request.

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



# Air/Water Heat Exchanger

**Sidewall for 600 mm (23.6") deep TS8 modular enclosure, useful cooling capacity 700 W (2391 BTU)**



## Configuration:

Wired ready for connection, with terminal strip, sealing material and assembly parts.

- 1 Water connections
- 2 Hose 10 mm (0.4") diameter
- 3 Condensate discharge



## Also required:

Cooling water system such as Rittal chiller systems, from page 50.

**Certifications,**  
see page 17.

**Detailed drawing,**  
see page 135.

**Performance diagrams,**  
available on the Internet,  
log onto [www.rittal-corp.com](http://www.rittal-corp.com).

## Property rights:

German patent  
no. 198 04 901  
European patent no. 1 053 582  
with validity for ES, FR, GR, IT  
Australian patent no. 740 300  
US patent no. 6,488,214

Part No. SK	3316.180	3316.200
Voltage V, Hz	230, 50/60	
Dimensions to fit TS modular enclosures in mm (inches)	H 1800 (70.9) T 600 (23.6)	2000 (78.7) 600 (23.6)
<b>Useful cooling capacity in W (BTU)</b>	<b>L 35 W 10, 100 l/h (26.4 gal/h)</b>	<b>700 (2391)</b>

Rated current maximum	0.45 A/0.51 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 +35°C (34°F to 95°F)
Permissible operating pressure p. max.	1 to 10 bar (14.5 to 145 psi)
Temperature range	+1°C to +70°C (34°F to 158°F)
Ratings to EN 60 529/10.91	IP 54 (NEMA 12)
Duty cycle	100 %
Type of connection	Terminal strip
Weight in kg (lb)	26 (57.3)
Color	RAL 7035 (light gray) <sup>1)</sup>
Air displacement of fans	170 m³/h (100 cfm)
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 (68°F to 140°F) (factory setting +35°C (95°F))

Accessories	PU		Page
Temperature indicator	1	3114.100	103
Door-operated switch	1	4127.000	–
Condensate hose	1	3301.610	108
Flow regulator valve	1	see accessories	110

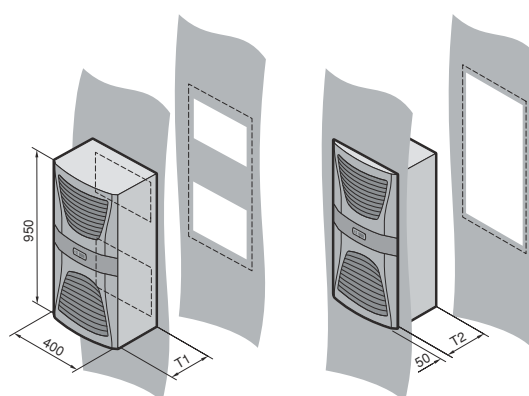
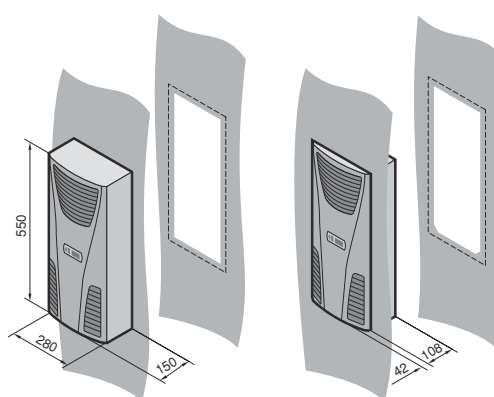
<sup>1)</sup> RAL 7032 (pebble gray) on request.

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



# Air/Air Heat Exchangers

Wall-mounted, specific thermal output 17.5 – 60 W/C



B = Width  
T = Depth

**RITTAL**  
**TOP**  
**THERM**

## Configuration:

Fully wired unit ready for connection.

**Certifications,**  
see page 18.

**Detailed drawing,**  
see page 136.

**Performance diagrams,**  
available on the Internet,  
log onto [www.rittal-corp.com](http://www.rittal-corp.com).

## Property rights:

German registered designs  
no. 402 02 324 and  
no. 402 02 325  
IR reg. design no. DM/061 967  
and no. DM/062 557  
Chinese registered design  
no. ZL 0330 8461.1  
Indian registered design  
no. 190 269 and no. 189 953  
Japanese registered design  
no. 1 187 905 and  
no. 1 187 896  
US design patent  
no. US D 488,480S

Part No. SK	3126.100	3127.100	3128.100	3129.100
Voltage V, Hz	230, 50/60			
Dimensions in mm (inches)	H	550 (21.7)	950 (37.4)	950 (37.4)
	B	280 (11.0)	400 (15.7)	400 (15.7)
	T1	150 (5.9)	205 (8.1)	225 (8.9)
	T2	–	155 (6.1)	175 (6.9)
Specific thermal output	17.5 W/C	30 W/C	45 W/C	60 W/C

Fans	2 per heat exchanger			
Maximum rated current per fan	0.11 A/0.13 A			
Power per fan	23 W/27 W			
Air displacement of fans	External circuit	265/315 m³/h (156/185 cfm)	480/525 m³/h (283/309 cfm)	600/625 m³/h (353/368 cfm)
	Internal circuit	156/185 m³/h (90/105 cfm)	283/309 m³/h (161/176 cfm)	353/368 m³/h (203/214 cfm)
Temperature range	–5°C to +55°C (23°F to 131°F)			
Type of connection	Plug-in terminal strip			
Weight in kg (lb)	10 (22.0)	18 (40.0)	19 (41.9)	21 (46.3)
Color	RAL 7035 (light gray)			
Ratings to EN 60 529/10.91	Internal circuit	IP 54 (NEMA 12)		

Accessories	PU		Page
Filter mats	3	3286.300	111
Metal filters	1	3286.310	112
Thermostat	1	3110.000	104
Temperature indicator	1	3114.100	103
Speed control	1	3120.000	105

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

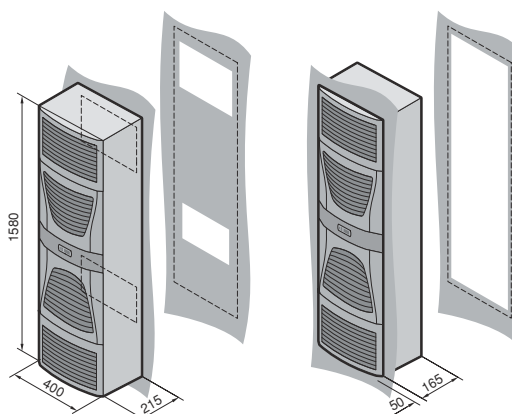
B  
4.1

Air/Air Heat Exchangers



# Air/Air Heat Exchangers

Wall-mounted, specific thermal output 90 W/C



## Configuration:

Fully wired unit ready for connection.

## Certifications,

see page 18.

## Detailed drawing,

see page 136.

## Performance diagrams,

available on the Internet, log onto [www.rittal-corp.com](http://www.rittal-corp.com).

## Property rights:

German registered designs

no. 402 02 324 and

no. 402 02 325

IR reg. design no. DM/061 967

and no. DM/062 557

Brazilian registered design

no. DI 6203240-2

Chinese registered design

no. ZL 0330 4386.8

Indian registered designs

nos. 190 270, 189 954, 189 955,

189 958

Japanese registered design

no. 1 187 906 and no. 1 187 897

US design patent

no. US D 492,319S and

US D 492,320S



<b>Part No. SK</b>	<b>3130.100</b>
Voltage V, Hz	230, 50/60
Dimensions in mm (inches)	H 1580 (62.2)
	W 400 (15.7)
	D 215 (8.5)
<b>Specific thermal output</b>	<b>90 W/C</b>

Fans	2 per heat exchanger	
Maximum rated current per fan	0.67 A/0.88 A	
Power per fan	150 W/200 W	
Air displacement of fans	External circuit	850/945 m³/h (500/556 cfm)
	Internal circuit	850/945 m³/h (500/556 cfm)
Temperature range	-5°C to +55°C (23°F to 131°F)	
Type of connection	Plug-in terminal strip	
Weight in kg (lb)	34 (75.0)	
Color	RAL 7035 (light gray)	
Ratings to EN 60 529/10.91	Internal circuit	IP 54 (NEMA 12)

Accessories		PU	Page
Filter mats	3	3286.400	111
Metal filters	1	3286.410	112
Thermostat	1	3110.000	104
Temperature indicator	1	3114.100	103
Speed control	1	3120.000	105

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





### Configuration:

Fully wired unit, ready for connection.

**Certifications,**  
see page 18.

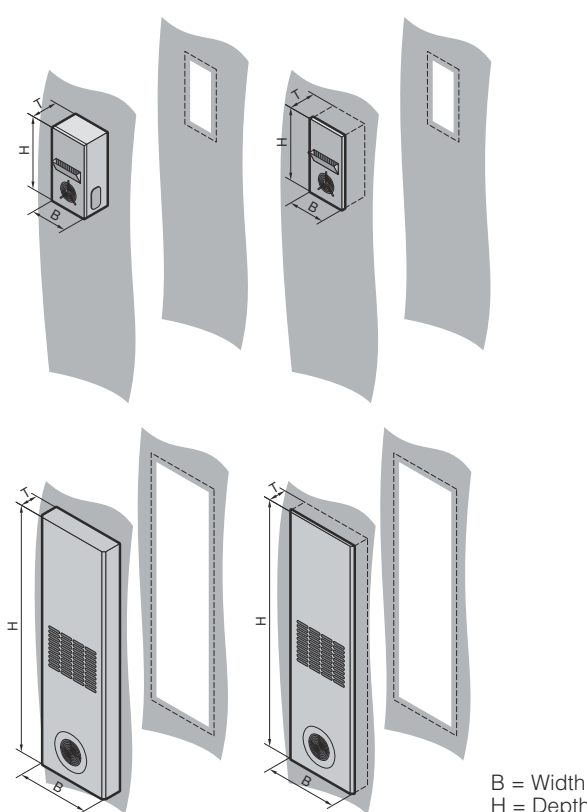
**Performance diagrams,**  
available on the Internet,  
log onto [www.rittal-corp.com](http://www.rittal-corp.com).

### SK 3125.800

Compact, wall-mounted air/air heat exchanger. Ideal for small and operator housings. May be wall-mounted, recessed or partially recessed.

### SK 3129.800

Ultra slim air/air heat exchanger. Ideal for mounting on or in the door of an enclosure.



B = Width  
H = Depth

Part No. SK		3125.800	3129.800
Voltage Volt, Hz		230, 50/60	
Dimensions in mm (inches)	H	400 (15.7)	1360 (53.5)
	B	200 (7.9)	400 (15.7)
	T	146 (5.7)	110 (4.3)
Specific thermal output		12 W/C	62 W/C
Fans		2 each per heat exchanger	
Maximum rated current per fan		0.11 A/0.13 A	0.45 A/0.55 A
Power per fan		25 W/30 W	100 W/130 W
Air displacement per fan	External circuit	265 m³/h/315 m³/h (156/185 cfm)	360 m³/h/900 m³/h (212/530 cfm)
	Internal circuit	265 m³/h/315 m³/h (156/185 cfm)	360 m³/h/900 m³/h (212/530 cfm)
Temperature range		-5°C up to +55°C (23°F to 131°F)	
Type of connection		Plug-in terminal strip	
Weight in kg (lb)		8 (17.6)	30 (66.1)
Color		RAL 7035 (light gray)	
Ratings to EN 60 529/10.91	Internal circuit	IP 54 (NEMA 12)	
<b>Accessories</b>		PU	Page
Thermostat	1 ea	3110.000	104
Temperature indicator	1 ea	3114.100	103
Speed control	1 ea	3120.000	105

Special voltages upon request. We reserve the right to technical modifications.



# Filter Fan Units

## Features



Filter fan units are ideal for cost effectively dissipating high heat loads. The prerequisite is that the ambient air must be relatively clean with a temperature below the desired enclosure internal temperature.

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

### Fast assembly



#### Quick clip-on mounting

This guarantees quick, completely secure attachment of the filter fan unit. The prerequisites for ratings IP 54 (NEMA 12) are met as standard.

Changing the filter mat is quick and easy. The louvered grille is attached without screws providing quick access to the filter mat.

#### Inlet or outlet

The air direction may be quickly reversed from blowing (standard setting) to extracting. Simply rotate the fan by 180°.

### Application diversity and functions



#### Not always full power

Air displacement may be reduced at lower ambient temperatures. Noise generation is reduced by adapting the filter fan speed to match the temperature using a controller.

#### Also available with EMC shielding

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

#### Hosed water protection

Particularly for applications in the food industry, the hose-proof hood prevents the ingress of moisture. The ratings of IP 56 (NEMA 3R) is achieved in conjunction with the filter mats.

### Benefits:

- Air displacement of 20 m³/h to 700 m³/h (12 to 412 cfm)
- Quick assembly
- IP 54 (NEMA 12) as standard
- Air flow direction may be reversed from blowing (standard setting) to extracting

- All fans are also available with EMC shielding

### Important:

- The prescribed heat loss and the maximum anticipated ambient temperature define the required volumetric flow

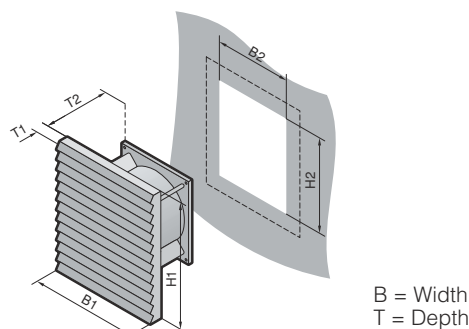
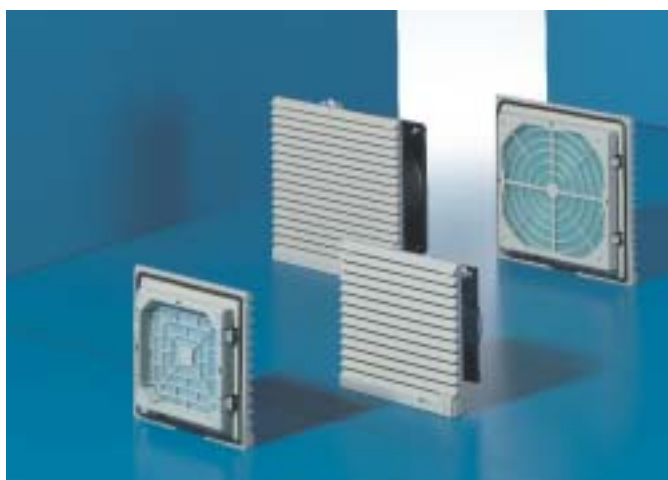
- Always use the filter fan units and outlet filters together

**For calculation formulas refer to our website:**  
[www.rittal-corp.com](http://www.rittal-corp.com)



# Filter Fan Units

Air displacement 12/39 cfm



**Configuration:**  
Filter fan unit ready for installation, including filter mats.

**German registered design**  
**no. M 93 04 846**

**Certifications,**  
see page 18.

**Performance diagrams,**  
available on the Internet,  
log onto [www.rittal-corp.com](http://www.rittal-corp.com).

Part No. filter fan unit SK		3321.107	3321.117	3321.027	3321.047 <sup>1)</sup>	3322.107	3322.117	3322.027	3322.047 <sup>1)</sup>
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 (inches)	H1/B1	116 (4.6)				148 (5.8)			
	H2/B2	92 + 0.8 (3.6 + 0.03) <sup>2)</sup>				124 (4.9) <sup>2)</sup>			
	T1	10 (0.4)				10 (0.5)			
Max. installation depth in mm (inches)	T2	42 (1.7)				57 (2.2)			
Air displacement, unimpeded air flow		20/25 m³/h (12/15 cfm)		20 m³/h (12 cfm)		55/66 m³/h (32/39 cfm)		55 m³/h (32 cfm)	
Air displacement with outlet filter including standard filter mat		1 x SK 3321.207: 15/18 m³/h (9/11 cfm)				1 x SK 3322.207: 43/50 m³/h (25/29 cfm)			

Axial fan	self-starting shaded pole motor		DC motor		self-starting shaded pole motor		DC motor	
Rated current maximum	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	12.5/10.3 W		3.0 W	4.1 W	19.0/18.0 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 (13°F to 131°F)							
Color	RAL 7035 (light gray) <sup>3)</sup>							
Ratings to EN 60 529/10.91	IP 54 (NEMA 12) standard IP 56 (NEMA 3R) when using a hose-proof hood							

Part No. outlet filter SK		3321.207					3322.207				
Accessories		PU								Page	
Spare filter mats	5	3321.700					3322.700			113	
Thermostat	1	3110.000								104	
Temperature indicator	1	3114.100	3114.115	3114.024	–	3114.100	3114.115	3114.024	–	103	
Speed control	1	3120.000	3120.115	–	–	3120.000	3120.115	–	–	105	
Hose-proof hood	1	3321.800					3322.800			109	

<sup>1)</sup> Delivery times available on request.

<sup>2)</sup> For metal thickness > 2.5 mm (0.1"), the cutout H2/B2 (W) must be 1 mm (0.04") larger

<sup>3)</sup> RAL 7032 (pebble gray) on request.

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

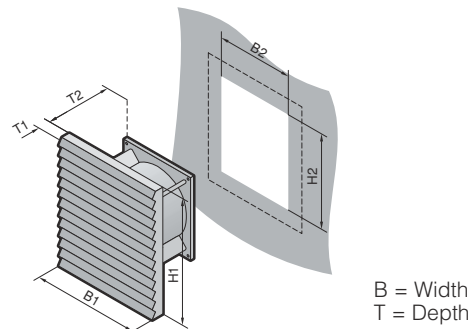
B  
4.1

Filter Fan Units



# Filter Fan Units

Air displacement 62/106 cfm



**Configuration:**  
Filter fan unit ready for installation, including filter mats.

**German registered design**  
**no. M 93 04 846**

**Certifications,**  
see page 18.

**Performance diagrams,**  
available on the Internet,  
log onto [www.rittal-corp.com](http://www.rittal-corp.com).

Part No. filter fan unit SK		3323.107	3323.117	3323.027	3323.047 <sup>1)</sup>	3324.107	3324.117	3324.027	3324.047 <sup>1)</sup>
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 (inches)	H1/B1	204 (8.0)				255 (10.0)			
	H2/B2	177 (7.0) <sup>2)</sup>				224 (8.8) <sup>2)</sup>			
	T1	12 (0.5)				12 (0.5)			
Maximum installation depth in mm (inches)	T2	82 (3.2)				105 (4.2)			
Air displacement, unimpeded air flow		105/120 m³/h (62/71 cfm)			105 m³/h (62 cfm)		180/160 m³/h (106/94 cfm)		180 m³/h (106 cfm)
Air displacement with outlet filter including standard filter mat		1 x SK 3323.207: 71/82 m³/h (42/48 cfm) 2 x SK 3323.207: 85/98 m³/h (50/58 cfm) 1 x SK 3325.207: 78/90 m³/h (46/53 cfm)				1 x SK 3325.207: 115/95 m³/h (68/56 cfm) 2 x SK 3325.207: 165/140 m³/h (97/82 cfm) 1 x SK 3326.207: 155/130 m³/h (91/78 cfm)			

Axial fan	self-starting shaded pole motor		DC motor		self-starting shaded pole motor		DC motor	
Rated current maximum	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 (13°F to 131°F)							
Color	RAL 7035 (light gray) <sup>3)</sup>							
Ratings to EN 60 529/10.91	IP 54 (NEMA 12) standard IP 55 IP 56 (NEMA 3R) when using an additional fine filter mat and hose-proof hood							

Part No. outlet filter SK		3323.207					3325.207				
Accessories		PU									Page
Spare filter mats	5	3171.100					3172.100			113	
Fine filter mats	5	3181.100					3182.100			113	
Thermostat	1	3110.000								104	
Temperature indicator	1	3114.100	3114.115	3114.024	–	3114.100	3114.115	3114.024	–	103	
Speed control	1	3120.000	3120.115	–	–	3120.000	3120.115	–	–	105	
Hose-proof hood	1	3323.800					3324.800			109	

<sup>1)</sup> Delivery times available on request.

<sup>2)</sup> For metal thickness > 2.5 mm (0.1"), the cutout H2/B2 (W) must be 1 mm (0.04") larger.

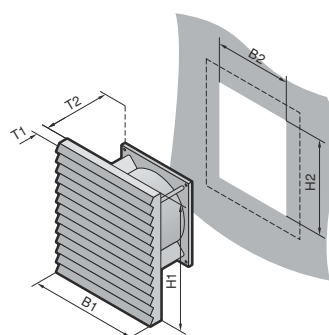
<sup>3)</sup> RAL 7032 (pebble gray) on request.

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



# Filter Fan Units

Air displacement 135/156 cfm



B = Width  
T = Depth

**Configuration:**  
Filter fan unit ready for installation, including filter mats.

**German registered design**  
**no. M 93 04 846**

**Certifications,**  
see page 18.

**Performance diagrams,**  
available on the Internet,  
log onto [www.rittal-corp.com](http://www.rittal-corp.com).

Part No. filter fan unit SK		3325.107	3325.117	3325.027	3325.047 <sup>1)</sup>
Voltage V, Hz		230, 50/60	115, 50/60	24 (DC)	48 (DC)
Dimensions in mm (inches)	H1/B1	255 (10.0)			
	H2/B2	224 (8.8) <sup>2)</sup>			
	T1	12 (0.5)			
Max. installation depth in mm (inches)	T2	105 (4.2)			
Air displacement, unimpeded air flow		230/265 m³/h (135/156 cfm)		230 m³/h (135 cfm)	
Air displacement with outlet filter including standard filter mat		1 x SK 3325.207: 170/205 m³/h (100/121 cfm)			
		2 x SK 3325.207: 200/230 m³/h (118/135 cfm)			
		1 x SK 3326.207: 190/215 m³/h (112/127 cfm)			

Axial fan	self-starting shaded pole motor		DC motor	
Rated current maximum	0.28 A 0.24 A	0.53 A 0.49 A	0.59 A	0.31 A
Power	41.0/38.0 W		14.0 W	15.0 W
Noise level	54/56 dB (A)		54 dB (A)	
Temperature range	−10°C to +55°C (13°F to 131°F)			
Color	RAL 7035 (light gray) <sup>3)</sup>			
Ratings to EN 60 529/10.91	IP 54 (NEMA 12) standard IP 55 IP 56 (NEMA 3R) when using an additional fine filter mat and hose-proof hood			

Part No. outlet filter SK		3325.207				
Accessories		PU				Page
Spare filter mats	5	3172.100				113
Fine filter mats	5	3182.100				113
Thermostat	1	3110.000				104
Temperature indicator	1	3114.100	3114.115	3114.024	–	103
Speed control	1	3120.000	3120.115	–	–	105
Hose-proof hood	1	3324.800				109

<sup>1)</sup> Delivery times available on request.

<sup>2)</sup> For metal thickness > 2.5 mm (0.1"), the cutout H2/B2 (W) must be 1 mm (0.04") larger.

<sup>3)</sup> RAL 7032 (pebble gray) on request.

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

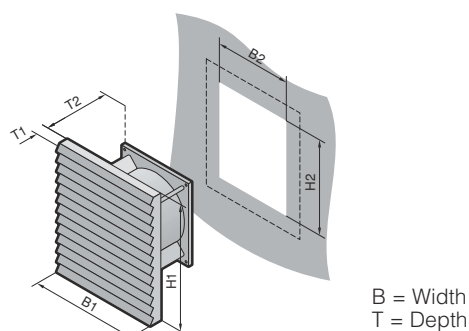
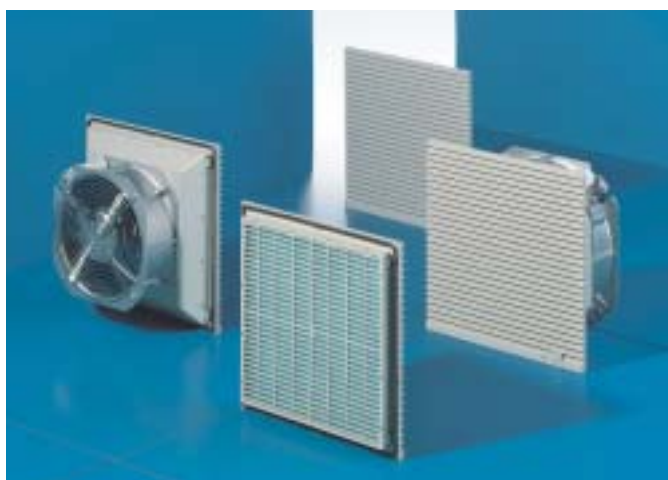
B  
4.1

Filter Fan Units



# Filter Fan Units

**Air displacement 353/424 cfm**



**Configuration:**  
Filter fan unit ready for installation, including filter mats.

**German registered design**  
**no. M 93 04 846**

**Certifications,**  
see page 18.

**Performance diagrams,**  
available on the Internet,  
log onto [www.rittal-corp.com](http://www.rittal-corp.com).

Part No. filter fan unit SK	3326.107	3326.117	3327.107	3327.117	3327.147
Voltage V, Hz	230, 50/60	115, 50/60	230, 50/60	115, 50/60	400/460, 3~, 50/60
Dimensions in mm (inches)	H1/B1	323 (12.7)			
	H2/B2	292 (11.5) <sup>1)</sup>			
	T1	12 (0.5)			
Maximum installation depth in mm (inches)	T2	125 (4.9)	145 (5.7)		
<b>Air displacement, unimpeded air flow</b>	<b>550/600 m³/h (323/353 cfm)</b>		<b>700/720 m³/h (412/424 cfm)</b>		
Air displacement with outlet filter including standard filter mat	1 x SK 3326.207: <b>360/390 m³/h (212/230 cfm)</b> 2 x SK 3326.207: <b>440/495 m³/h (259/291 cfm)</b>		1 x SK 3326.207: <b>525/575 m³/h (309/338 cfm)</b>		

Axial fan	Capacitor motor				Rotary current motor
Rated current maximum	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	64.0/80.0 W		115.0/212.0 W	167.0/230.0 W	146.0/220.0 W
Noise level	59/61 dB (A)		75/76 dB (A)		
Temperature range	−10°C to +55°C (13°F to 131°F)				
Color	RAL 7035 (light gray) <sup>2)</sup>				
Ratings to EN 60 529/10.91	IP 54 (NEMA 12) standard IP 55 IP 56 (NEMA 3R) when using an additional fine filter mat and hose-proof hood				

Part No. outlet filter SK		3326.207				
Accessories		PU				Page
Spare filter mats	5	3173.100		3327.700		113
Fine filter mats	5	3183.100				113
Thermostat	1	3110.000				104
Temperature indicator	1	3114.100	3114.115	3114.100	3114.115	103
Speed control	1	3120.000	3120.115	3120.000	–	105
Hose-proof hood	1	3326.800				109

<sup>1)</sup> For metal thickness > 2.5 mm (0.1"), the cutout H2/B2 (W) must be 1 mm (0.04") larger.

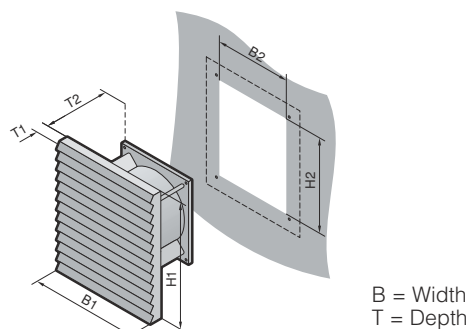
<sup>2)</sup> RAL 7032 (pebble gray) on request.

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



# Filter Fan Unit – EMC

Air displacement 12/71 cfm



## Configuration:

Filter fan unit ready for installation, including drilling template, filter mat and assembly parts.

## Certifications,

see page 19.

## Performance diagrams,

available on the Internet, log onto [www.rittal-corp.com](http://www.rittal-corp.com).

Part No. filter fan unit SK	3321.607	3321.617 <sup>1)</sup>	3322.607	3322.617 <sup>1)</sup>	3323.607	3323.617 <sup>1)</sup>
Voltage V, Hz	230, 50/60	115, 50/60	230, 50/60	115, 50/60	230, 50/60	115, 50/60
Dimensions in mm (inches)	H1/B1	116 (4.6)	148 (5.8)	204 (8.0)		
	H2/B2	92 + 0.8 (3.6 + 0.03) <sup>2)</sup>	124 (4.9) <sup>2)</sup>	177 (7.0) <sup>2)</sup>		
	T1	10 (0.4)	10.5 (0.5)	12.5 (0.5)		
Maximum installation depth in mm (inches)	T2	42 (1.7)	57 (2.2)	82 (3.2)		
<b>Air displacement, unimpeded air flow</b>	<b>20/25 m³/h (12/15 cfm)</b>		<b>55/66 m³/h (32/39 cfm)</b>		<b>105/120 m³/h (62/71 cfm)</b>	
Air displacement with outlet filter including standard filter mat	1 x 3321.267:		1 x 3322.267:		1 x 3323.267:	
	<b>15/18 m³/h (9/11 cfm)</b>		<b>43/50 m³/h (25/29 cfm)</b>		<b>71/82 m³/h (42/48 cfm)</b>	
			2 x 3322.267:		2 x 3323.267:	
			<b>48/55 m³/h (28/32 cfm)</b>		<b>85/98 m³/h (50/58 cfm)</b>	
			1 x 3323.267:		1 x 3325.267:	
			<b>48/55 m³/h (28/32 cfm)</b>		<b>78/90 m³/h (46/53 cfm)</b>	

Axial fan	self-starting shaded pole motor							
Rated current maximum	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	12.5/10.3 W		19.0/18.0 W					
Noise level	41/46 dB (A)		46/49 dB (A)					
Temperature range	−10°C to +55°C (13°F to 131°F)							
Color	RAL 7035 (light gray) <sup>3)</sup>							
Ratings to EN 60 529/10.91	IP 54 (NEMA 12) standard							
<b>Part No. outlet filter – EMC SK</b>	<b>3321.267</b>		<b>3322.267</b>		<b>3323.267</b>			
<b>Accessories</b>	PU					Page		
Spare filter mats	5	3321.700		3322.700		3171.100	113	
Fine filter mats	5	–			3181.100		113	
Thermostat	1	3110.000					104	
Temperature indicator	1	3114.100	3114.115	3114.100	3114.115	3114.100	3114.115	103
Speed control	1	3120.000	3120.115	3120.000	3120.115	3120.000	3120.115	105
Hose-proof hood	1	3321.800		3322.800		3323.800		109

<sup>1)</sup> Delivery times available on request.

<sup>2)</sup> For metal thickness > 2.5 mm (0.1"), the cutout H2/B2 (W) must be 1 mm (0.04") larger.

<sup>3)</sup> RAL 7032 (pebble gray) on request.

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

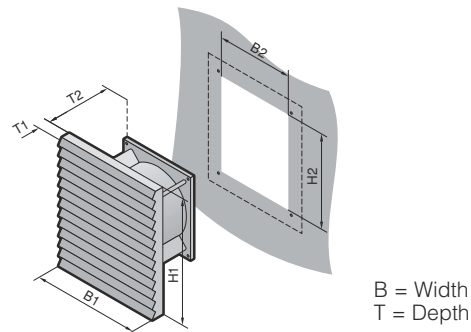
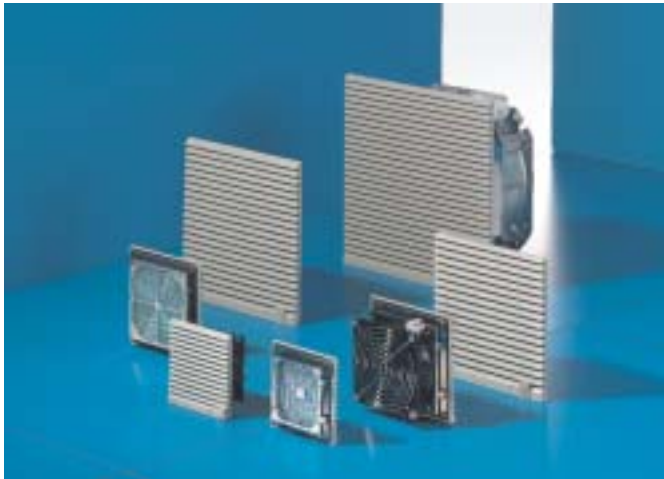
B  
4.1

Filter Fan Unit – EMC



# Filter Fan Unit – EMC

Air displacement 106/433 cfm



## Configuration:

Filter fan unit ready for installation, including drilling template, filter mat and assembly parts.

## Certifications,

see page 19.

## Performance diagrams,

available on the Internet, log onto [www.rittal-corp.com](http://www.rittal-corp.com).

Part No. filter fan unit SK		3324.607	3324.617 <sup>1)</sup>	3325.607	3325.617	3326.607	3326.617 <sup>1)</sup>	3327.607	3327.617 <sup>1)</sup>
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 (inches)	H1/B1	255 (10.0)				323 (12.7)			
	H2/B2	224 ( 8.8) <sup>2)</sup>				292 (11.5) <sup>2)</sup>			
	T1	12 (0.5)				12 (0.5)			
Maximum installation depth in mm (inches)	T2	105 (4.1)				129 (5.1)		145 (5.7)	
Air displacement, unimpeded air flow		160/180 m³/h (94/106 cfm)		230/265 (135/156 cfm)		550/600 m³/h (324/353 cfm)		700/720 m³/h (412/423 cfm)	
Air displacement with outlet filter including standard filter mat		1 x 3325.267 115/95 (68/56 cfm)		1 x 3325.267: 170/205 m³/h (100/120 cfm)		1 x 3325.267: 170/205 m³/h (100/121 cfm)		1 x 3326.267: 525/575 m³/h (309/338 cfm)	
		2 x 3325.267: 165/140 m³/h (97/82 cfm)		2 x 3325.267: 200/230 m³/h (118/135 cfm)		2 x 3325.267: 200/230 m³/h (118/135 cfm)			
		1 x 3326.267: 155/130 m³/h (91/77 cfm)		1 x 3326.267: 190/215 m³/h (111/127 cfm)		1 x 3326.267: 360/390 m³/h (212/230 cfm)			

Axial fan	self-starting shaded pole motor				Capacitor motor			
Rated current maximum	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/ 35.0 W		41.0/ 38.0 W		64.0/ 80.0 W		155.0/ 212.0 W	167.0/ 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 (13°F to 131°F)							
Color	RAL 7035 (light gray) <sup>3)</sup>							
Ratings to EN 60 529/10.91	IP 54 (NEMA 12) standard							

Part No. outlet filter – EMC SK		3325.267	3326.267
Accessories		PU	
Spare filter mats	5	3172.100	3173.100
Fine filter mats	5	3182.100	3183.100
Thermostat	1	3110.000	
Temperature indicator	1	3114.100	3114.115
Speed control	1	3120.000	3120.115
Hose-proof hood	1	3324.800	3326.800

<sup>1)</sup> Delivery times available on request.

<sup>2)</sup> For metal thickness > 2.5 mm (0.1"), the cutout H2/B2 (W) must be 1 mm (0.04") larger.

<sup>3)</sup> RAL 7032 (pebble gray) on request.

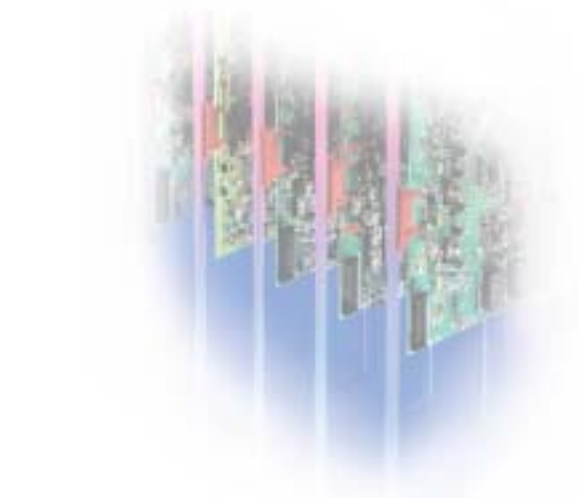
Special voltages available on request. We reserve the right to make technical modifications.



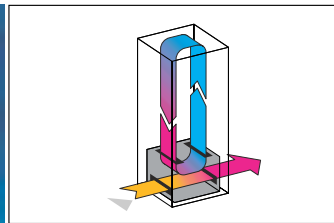
# Climate Control Tailored to Enclosures

## Features

All rack-mounted climate control components are mounted directly on the 482.6 mm (19") rails. Positioning directly beneath the electronic components ensures effective cooling, and prevents the formation of hot spots.



### Rack-mounted air conditioners



**Useful cooling capacity  
1000 W, 6U (3415 BTU, 6U)**  
The heated air is drawn in, cooled, and blown out underneath the electronic equipment that is being cooled.

**Simple attachment to the  
482.6 mm (19") rails**  
Sealed enclosures require a door cutout for the external air circuit.

A fully equipped front is essential in open enclosures. The set-point of the temperature controller is set by a service door.

### 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, by two mounting brackets on the 482.6 mm (19") rails.

Ideal for avoiding hot spots in fully populated enclosures.

### Centrifugal fan



**320 m³/h (188 cfm)  
air displacement, 2U**  
High air displacement means that Rittal centrifugal fans are

capable of dissipating large heat losses from the enclosure. Noise generation of only 52 dB maintains a pleasant environment.

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



# Climate Control Tailored to Enclosures

## Features

Ready-to-use, wired modules equipped with fans for numerous Rittal enclosure system platforms. Rittal Climate Control offers effective air displacement 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.



### Fan for integration into the door



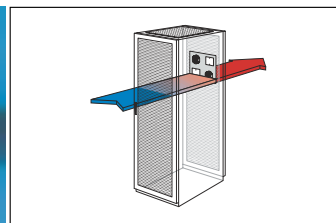
#### For TS8 server enclosures: Door-mounted fans for server enclosures

Specifically for installation in the tubular door frame of perforated doors.



#### Door-mounted fans for TS8 server enclosures

Specifically for installing in perforated doors. The growing packaging density in data communications and network enclosures means that active, direct ventilation of the enclosure has become necessary. The door-mounted fans, attached to the rear or front door, support horizontal air routing of the servers.



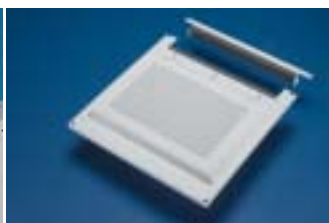
sure means that active, direct ventilation of the enclosure has become necessary. The door-mounted fans, attached to the rear or front door, support horizontal air routing of the servers.

### 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 TS8 server enclosures: 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 TS8 server enclosures: Internal fan mounting panel

Twin-walled sidewall for targeted air routing.



#### Enclosure internal fan

Supports active climate control components and thereby selectively avoids hot spots.



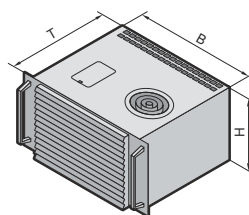
#### For TS8: Air baffle system

Cold air from the hollow base is routed to the twin-walled door and distributed in a targeted manner.



# Rack-Mounted Air Conditioners

For 482.6 mm (19"), useful cooling capacity 1000 W (3586 BTU)



B = Width  
T = Depth

## Configuration:

Wired ready for connection with connection cable (3 m (118")), including drilling template.



## Also required:

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

**Certifications,**  
see page 19.

**Detailed drawing,**  
see page 137.

**Performance diagrams,**  
available on the Internet,  
log onto [www.rittal-corp.com](http://www.rittal-corp.com).

Part No. SK		3278.134 <sup>1)</sup>	3292.134
Voltage V, Hz		115, 50/60	230, 50/60
Dimensions in mm (inches)	H	265.9 (10.5) 6 U	
	W	445 (17.5)	
	D	542 (21.3)	
Useful cooling output $\dot{Q}_K$ to DIN 3168 in W (BTU)		L 35 L 35	1000/1050 (3415/3586)
		L 35 L 50	660/770 (2254/2630)
Rated current maximum		8.4 A/10.8 A	3.8 A/4.5 A
Starting 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	615/710 W	585/650 W
	L 35 L 50	680/800 W	650/720 W
Cooling coefficient $\epsilon = \dot{Q}_K/P_{el}$		L 35 L 35	1.6
Refrigerant		R134a, 700 g	
Maximum allowable operating pressure.		25 bar (363 psi)	
Temperature and setting range		+20°C to +55°C (68°F to 131°F)	
Protection category to EN 60 529/10.91	External circuit	IP 34 (NEMA 2)	
	Internal circuit	IP 54 (NEMA 12)	
Duty cycle		100 %	
Type of connection		Connection cable 3 m (118")	
Weight in kg (lb)		38 (88.8)	35 (77.2)
Color		RAL 7032 (pebble gray)	
Air displacement of fans	External circuit	620 m³/h (365 cfm)	
	Internal circuit	460 m³/h (272 cfm)	
Temperature control		Internal thermostat (factory setting +35°C (95°F))	
Accessories		PU	Page
Filter mats	3	3286.000	111
Adaptor for front air supply	1	3259.000	102
Air duct	10	3220.000	102
Temperature indicator	1	3114.115	103
Door-operated switch	1	4127.000	–

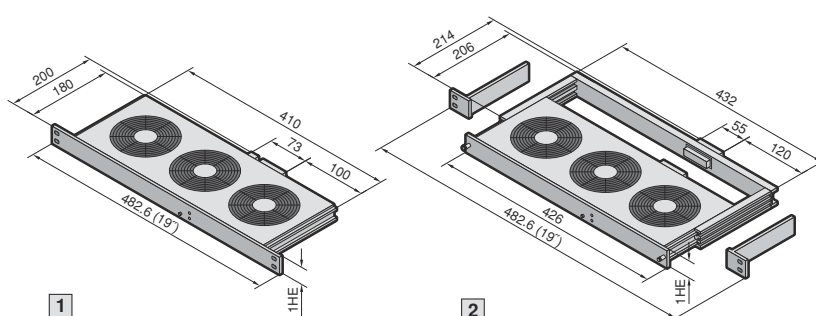
<sup>1)</sup> Delivery times available on request.

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



# Rack-Mounted Fans

For 482.6 mm (19"), air displacement 188/283 cfm



HE = U

## Rack-mounted fan/Vario rack-mounted fan configuration:

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 (118")), bracket for optional attachment to the 19" system, assembly parts.



## Also required:

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

**Certifications,**  
see page 19.

**Detailed drawing,**  
see page 137.

**Performance diagrams,**  
available on the Internet,  
log onto [www.rittal-corp.com](http://www.rittal-corp.com).

B  
4.1

Rack-Mounted Fans

	1 Rack-mounted fans						2 Vario rack-mounted fans			
	Part No. SK						Part No. SK			
2 fans Distance between axes 85 mm (3.3")	3340.024 <sup>1)</sup>	3340.115 <sup>1)</sup>	3340.230	–	–	–	3350.024 <sup>1)</sup>	3350.115 <sup>1)</sup>	3350.230	–
3 fans Distance between axes 85 mm (3.3")	3341.024 <sup>1)</sup>	3341.115	3341.230	–	9769.002 <sup>1) 2)</sup>	–	3351.024 <sup>1)</sup>	3351.115 <sup>1)</sup>	3351.230	–
3 fans Distance between axes 105 mm (4.1")	3342.024	3342.115 <sup>1)</sup>	3342.230	3342.500 <sup>2)</sup>	–	–	3352.024 <sup>1)</sup>	3352.115 <sup>1)</sup>	3352.230	3352.500 <sup>1) 3)</sup>
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)
Part No. SK matching guide frame	–	–	–	–	–	–	3356.100 <sup>1)</sup>	3355.100	3355.100	3357.100 <sup>1)</sup>

Accessories	Page										
Temperature indicator 230 V (AC)	103	3114.100	3114.115	3114.100	3114.024	–	–	3114.100	3114.115	3114.100	3114.024
Thermostat	104	3110.000									
Speed control	105	3120.000	3120.115	3120.000	–	–	–	3120.000	3120.115	3120.000	–

## Technical specifications

Part 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 <sup>2)</sup> 3352.500 <sup>2)</sup>	9769.002
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 maximum	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 A							6 A
Number of fans	2			3			3	
Air displacement, unimpeded air flow	320 m³/h (188 cfm)			480 m³/h (283 cfm)			250 m³/h (147 cfm)	
Temperature range	–10°C to +55°C (14°F to 131°F)							–33°C to +55°C (–27.4°F to 131°F)
Noise level	51 dB (A)	52 dB (A)	51 dB (A)	51 dB (A)	52 dB (A)	51 dB (A)	52 dB (A)	

<sup>1)</sup> Delivery times available on request.

<sup>2)</sup> Rack-mounted fan for metric mounting angles available on request.

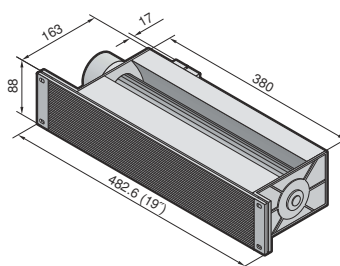
<sup>3)</sup> Version with monitoring.

Accessories Page 100



# Centrifugal Fan

Air displacement 188 cfm



## Configuration:

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

## Approvals,

see page 20.

## Detailed drawing,

see page 137.

## Performance diagrams,

available on the Internet, log onto [www.rittal-corp.com](http://www.rittal-corp.com).

Part No. SK		3145.000	3144.000
Voltage V, Hz		115, 50/60	230, 50/60
Dimensions in mm (inches)	H	88 (3.5) 2U	
	W	482.6 (19)	
	D	158 (6.2)	
Air displacement, unimpeded air flow		320 m <sup>3</sup> /h (188 cfm)	
Rated current maximum.		0.32 A	0.16 A
Power		37 W	
Noise level		52 dB (A)	
Speed		2245 rpm <sup>-1</sup>	
Temperature range		-10°C to +55°C (14°F to 131°F)	
Maximum static pressure difference		65 – 70 Pa	
Accessories		PU	Page
Temperature indicator	1	3114.115	3114.100
Thermostat	1	3110.000	104
Filter mats	5	3177.000	111
Front outlet grille 2U	1	3176.000	110
Roof vent	1	3148.007	90
Speed control	1	3120.115	3120.000

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

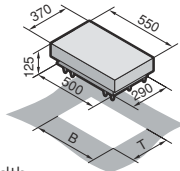
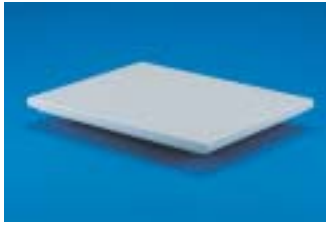
B  
4.1

Centrifugal Fan



# Fan Systems

## For TS8 server enclosures



B = Width  
T = Depth

### Roof-mounted fan and vent attachment

#### For TS8 server enclosures

The active roof-mounted fan and the passive vent attachment (TS8801.380) integrate perfectly into the system wide mounting concept of Rittal Climate Control. They fit onto the cutouts of the small and medium performance category of TopTherm roof-mounted air conditioners.

They may also be mounted on any sufficiently large roof surface.

TS8 roof plates with prepared mounting cutouts are also available.

#### Roof-mounted fan configuration:

Unit ready to connect with built-in radial fan, sealing material and assembly parts.

#### Vent attachment:

see page 107.

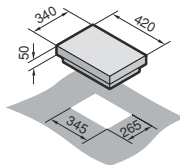
#### Rating:

IP 43 to EN 60 529/10.91

#### Detailed drawing,

see page 138.

Part No. SK		3149.410	3149.420	3149.440	3149.810	3149.820	3149.840	8801.380	Page
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 displacement, unimpeded air flow		400 m³/h (235 cfm)			800 m³/h (471 cfm)			Without motor	
Required mounting cutout in mm (inches)	B T	475 (18.7) 260 (10.2)						490 (19.3) 390 (15.4)	
Power consumption of fan		120/170 W		95/140 W	170/225 W		180/310 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 (14°F to 131°F)							
Noise level		68/69 dB (A)			69/70 dB (A)				
Weight in kg (lb)		10 (22.0)			11 (24.3)				
Color shade		RAL 7035 (light gray)							
Accessories									
Roof plate 600 x 600 mm (23.6 x 23.6") for TS8 with cutout		8801.300						8801.310	107
Roof plate 600 x 800 mm (23.6 x 31.5") for TS8 with cutout		8801.320						8801.330	107
Roof plate 1200 x 600 mm (47.2 x 23.6") for TS8 with cutout		-						8801.350	107
Temperature indicator		3114.115	3114.100	-	3114.115	3114.100	-	-	103
Speed control		3120.115	3120.100	-	3120.115	3120.100	-	-	105



### Roof-mounted fan

- The roof-mounted fan is easily installed using 6 screws. The sealing tape supplied can be used to seal the fan 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.

#### Rating:

IP 43 to EN 60 529/10.91.

By additionally installing the filter holder with filter mat SK 3175.000, with roof vent SK 3148.000 a rating of IP 44 is achieved.

#### Configuration:

Fully wired unit ready for connection with built-in radial fan, sealing material and assembly parts, connection cable (3 m (118")), drilling template.



#### Accessories:

Filter holder,  
see page 110.

#### Detailed drawing,

see page 138.

Part No. SK	3149.007	3169.007	3148.007
Voltage V, Hz	230, 50/60	115, 50/60	Without fan motor
<b>Air displacement</b>	<b>360 m³/h (212 cfm)</b>		
Rated current maximum	0.2 A	0.55 A	
Power consumption	42 W	65 W	
Temperature range	-10°C to +60°C (50°F to 140°F)		
Noise level	53 dB (A)		
Weight in kg (lb)	7.8 (17.2)		
Color <sup>1)</sup>	RAL 7035 (light gray), textured enamel		

<sup>1)</sup> To order the version in RAL 7032 (pebble gray), please add extension .000 to the Part no. Special voltages available on request. Technical modifications reserved.





### 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 or without a roof plate. The enormous volumetric flow in proportion to exceptionally low noise levels make the roof-mounted fan ideal for use in sensitive office areas.

#### Technical specifications:

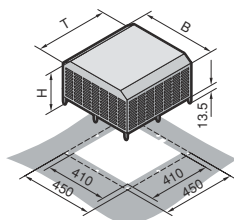
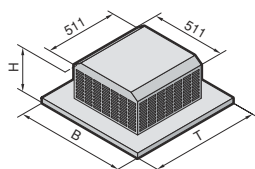
- Fitted onto a roof plate based on a TS8 server enclosure
- Easy assembly; the work of creating mounting cutouts has been eliminated
- Radial fan

#### Configuration:

Fully wired ready for connection, including assembly parts.

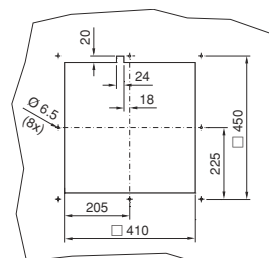
Part No. SK	3164.610		3164.620		3164.810		3164.820		3164.115		3164.230		Page	
Voltage V, Hz	115, 50/60		230, 50/60		115, 50/60		230, 50/60		115, 50/60		230, 50/60			
<b>Air displacement (unimpeded air flow)</b>														
Version	with roof plate									without roof plate				
Dimensions in mm (inches)	H	240 (9.5)			240 (9.5)			227 (8.9)						
	B	800 (31.5)			800 (31.5)			511 (20.1)						
	T	800 (31.5)			900 (35.4)			511 (20.1)						
Power consumption	6.8/8.1 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 (68°F to 131°F)													
Color	RAL 7035 (light gray)													
<b>Accessories</b>														
Temperature indicator in 1U patch panel	7109.035													103
Temperature indicator	3114.115		3114.100		3114.115		3114.100		3114.115		3114.100		103	
Thermostat	3110.000													104

<sup>1)</sup> 800 m³/h (471 cfm) at 40 Pa counterpressure using two integrated louvers, type DK 7580.500, in the enclosure base/plinth.  
Special voltages available on request. Technical modifications reserved.



B = Width  
T = Depth

Mounting cutout  
only required for fans without roof plate



### TS8 air baffle system

The system has an air inlet nozzle in the base frame. Cold air is drawn in from below and routed into the twin-walled door. The cold air is then distributed inside the rack with special covers. 15 covers are supplied with every door.

#### Color:

RAL 7035 (light gray)

H x W	PU	Part No. DK
TS8 sheet steel door, twin-walled 2000 x 600 mm (78.7 x 23.6")	1	<b>7766.520</b>
TS8 sheet steel door, twin-walled 2200 x 600 mm (86.6 x 23.6")	1	<b>7766.522</b>
Air inlet nozzle 600 mm (23.6")	1	<b>7766.500</b>





### Fan mounting panel

#### For TS8 network enclosures

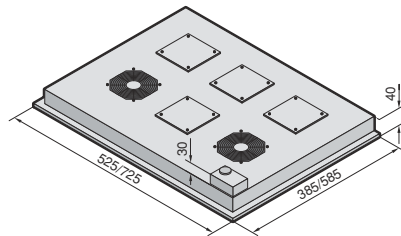
The fan mounting panel may be retroactively installed in all TS8 network enclosures from above. The plate is mounted at the front of the enclosure and the rear section is left free for cable entry. To ensure targeted air routing a rubber cable clamp strip is supplied loose for optimum sealing at the rear and sides.

Not suitable for crane transportation.  
Not suitable for combination with 482.6 mm (19") mounting frame.

The following combinations are possible:

- Solid roof plate raised with 20 or 50 mm (0.8 or 2.0") roof spacers
- Roof plate for cable entry raised with 20 or 50 mm (0.8 or 2.0") 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 (31.5"), in conjunction with a roof plate for cable entry from 900 mm (35.4").



For modular enclosures mm (inches)		No. of fans	Max. no. of fans	Part No. DK
Width	Depth			
600 (23.6)	600 (23.6)	2	4	<b>7966.035</b>
600 (23.6)	800 (31.5) 900 (35.4) 1000 (39.4)	2	6	<b>7968.035</b>
800 (31.5)	600 (23.6)	2	6	<b>7986.035</b>
800 (31.5)	800 (31.5) 900 (35.4) 1000 (39.4)	2	6	<b>7988.035</b>

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

#### Technical specifications for one fan:

Voltage: 230 V

Power consumption: 15/14 W at 50/60 Hz

Air displacement (unimpeded air flow):

160/180 m³/h, 50/60 Hz (94/106 cfm)

Temperature range:

-10°C to +55°C (14°F to 131°F)

#### Technical specifications of thermostat:

Voltage: 250 V

Temperature range:

+5°C to +55°C (41°F to 131°F)

#### Color:

RAL 7035 (light gray)

#### Configuration:

2 fans, 2/4 cutouts to extend to 4/6 fans, thermostat optional for attachment to the fan mounting panel or to the 25 mm (1") DIN pitch pattern of the enclosure, Rubber cable clamp strip.

Thermostat and fan fully wired to connection cable (2.5 m (98.4")).



#### Accessories:

Fan expansion kit,  
see below.



### Fan expansion kit

For retrofitting various fan units or to supplement the fan mounting panel and fan roof, modular.

#### Technical specifications DK 7980.000:

Voltage: 230 V~

Power consumption: 15/14 W at 50/60 Hz

Air displacement (unimpeded air flow):

160/180 m³/h (94/106 cfm), 50/60 Hz

Noise level (unimpeded air flow): 37 dB (A)

Temperature range:

-10°C to +55°C (14°F to 131°F)

#### Technical specifications DK 7980.100:

Voltage: 230 V~

Power consumption: 14/12 W at 50/60 Hz

Air displacement (unimpeded air flow):

108/120 m³/h (64/71 cfm), 50/60 Hz

Noise level (unimpeded air flow): 34 dB (A)

Temperature range:

-20°C to +70°C (-4°F to 158°F)

#### Technical specifications DK 7980.148:

Voltage: 48 V (DC)

Power consumption: 7.7 W

Air displacement (unimpeded air flow): 184 m³/h

Noise level (unimpeded air flow): 42 dB (A)

Temperature range:

-20°C to +70°C (-4°F to 158°F)

Dimensions H x W x D mm (inches)	PU	Part No. DK
119 x 119 x 38 (4.7 x 4.7 x 1.5)	1 set	<b>7980.000</b>
119 x 119 x 25 (4.7 x 4.7 x 1.0)	1 set	<b>7980.100</b>
119 x 119 x 25 (4.7 x 4.7 x 1.0)	1 set	<b>7980.148</b>

#### Configuration:

Fan, including assembly parts and connection cable (0.61 m (24.0")).





### DC fan mounting panel

#### For TS8 server enclosure

#### Low-noise due to FCS speed control, fully fitted

Suitable for TS8 modular enclosures with a raised roof (> 20 mm (0.8")) or TS8 roof plate, vented. The fan mounting panel may be used as an alternative to fan mounting panel 7988.035. It is installed from above. A 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 panel with FCS technology:

- Low-noise due to speed control
- All fans are individually monitored for failure
- High air displacement due to DC technology (unimpeded air flow 6 x 165 m³/h (97 cfm) = 990 m³/h (583 cfm))
- EMC-compatible due to DC fan
- Temperature monitoring and control
- High level of safety due to low safety voltage with 24 V DC power pack
- Visual and acoustic alarm messages, and relay alarm output
- Freely selectable installation location for the FCS control unit (included with the supply of the fan mounting panel, in 482.6 mm (19") with 7320.440 or on the frame with 7320.450)
- Suitable for international use, due to wide-range power pack 100 – 240 V AC and socket to IEC 320
- Fully pre-configured
- Network compatible by CMC-TC processing unit 7320.100 (all relevant data such as temperature is displayed in the web browser, or alarms are sent in the form of an SNMP trap)

For modular enclosures width mm (inches)	For modular enclosures depth mm (inches)	Number of DC fans	Part No. DK
800 (31.5)	800 (31.5) 900 (35.4) 1000 (3.9)	6	7858.488

#### Technical specifications:

Power pack voltage:  
100 – 240 V AC, 50/60 Hz  
Power pack rated current: Max. 1.5 A  
Power pack secondary range: 24 V DC, 3 A  
Temperature range:  
+5°C to +40°C (41°F to 104°F)  
Total air displacement (unimpeded air flow):  
6 x 165 m³/h (97 cfm) = 990 m³/h (583 cfm)

#### Technical specifications for one fan:

Voltage: 24 V DC  
Rated current: max. 0.28 A  
Rated output: max. 6.72 W  
Air displacement (unimpeded air flow):  
165 m³/h (97 cfm)  
Speed: 2650 rpm  
Noise level: up to 41.0 dB (A)  
at maximum speed activation



#### Also required:

Connection cable 230/115 V.  
Example D version, Part no. 7200.210.



#### Accessories:

1U mounting unit, Part no. 7320.440.  
Mounting module, Part no. 7320.450.



# Fan Systems

## For TS/FR(i)/TE



### 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 TS8 modular enclosures in line with customer requirements.

#### The modules:

##### Roof plate, two-piece with cutout

For fan mounting and cable entry at the rear by a sliding angular bracket with rubber cable clamp strip. In exchange for the existing roof plate. The two-piece design allows convenient retrofitting of cables at any time.

##### Cover plate

To cover the cutout, available solid or vented. The top-mounted cover plate may be raised for extra air displacement using the supplied spacers.

##### Fan insert

For active ventilation:

A fully pre-wired fan tray including 2.5 m (98.4") connection cable, with two fan motors and additional cutouts. The air displacement may be increased with a fan expansion kit.

#### Material:

Sheet steel, painted

#### Color:

RAL 7035 (light gray)

#### Technical specifications for one fan:

Voltage: 230 V

Power consumption: 15/14 W at 50/60 Hz

Air displacement (unimpeded air flow):

160/180 m³/h (94 to 106 cfm) at 50/60 Hz

Temperature range:

-10°C to +55°C (14°F to 131°F)

#### Detailed drawing,

see page 138.



#### Accessories:

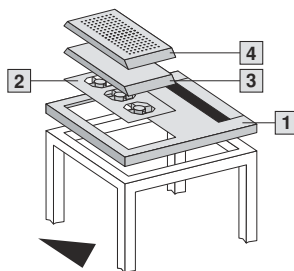
Fan expansion kit DK 7980.000.

Thermostat SK 3110.000,

see page 104.

Speed control SK 3120.000,

see page 105.



For modular enclosures mm (inches)		Part No. DK				Fan insert	
		Roof plate	Cover plate				
Width	Depth	1 With cutout	3 Solid	4 Vented	2 Fan insert	Fan pre-wired	Maximum no. of fans
600 (23.6)	600 (23.6)	7826.366	2102.180	2102.400	2102.320	2	2
	800 (31.5)	7826.368	2102.190	2102.410	2102.490	2	6
	900 (35.4)	7826.369	2102.190	2102.410	2102.490	2	6
	1000 (39.4)	7826.360	2102.190	2102.410	2102.490	2	6
800 (31.5)	600 (23.6)	7826.486	7885.100	7885.200	7885.000	2	3
	800 (31.5)	7826.488	7886.100	7886.200	7886.000	2	8
	900 (35.4)	7826.489	7886.100	7886.200	7886.000	2	8
	1000 (39.4)	7826.480	7886.100	7886.200	7886.000	2	8

### Fan unit, active

#### For TE 7000

For active ventilation of the TE 7000, a ventilation opening may be cut out of the front area in the standard roof plate and fitted with the fan module. The fan module is pre-wired ready for connection and has 2 fans, 1 thermostat and a connection cable including IEC 320 connector. An additional fan may be integrated.

#### Configuration:

Fan unit including assembly parts, 2 fans, thermostat and connection cable.

#### Technical specifications for one fan:

Fan extension kit.

#### Technical specifications of thermostat:

Voltage: 250 V

Temperature range:

+5°C to +55°C (41°F to 131°F)

For enclosures W x D mm (inches)	Number of pre-wired fans	Possible number of fans	Part No. TE
All dimensions	2	3	7000.670



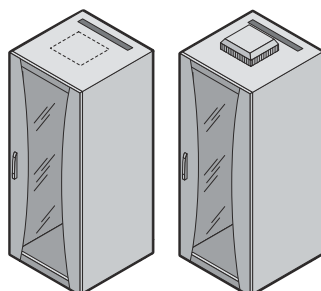
#### Also required:

Connection cable.



#### Accessories:

Fan expansion kit.







### Door mounted fan

**For TS8 modular server enclosures, especially for installing in perforated doors.**

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

#### Technical specifications:

- Standard cross member with two fans.
- Air displacement, unimpeded air flow 600 m<sup>3</sup>/h (353 cfm).
- By adding two fan expansion kits, the air displacement may be increased to 1200 m<sup>3</sup>/h (706 cfm).
- 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.

#### Configuration:

Wired ready for connection with 2.5 m (98") connection cable, including assembly parts.



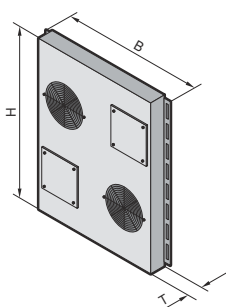
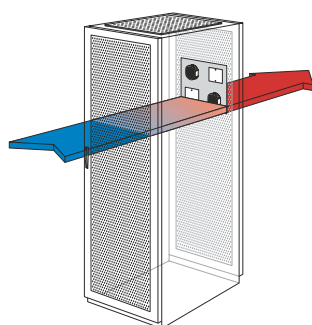
#### Accessories:

Fan expansion kit, see below.

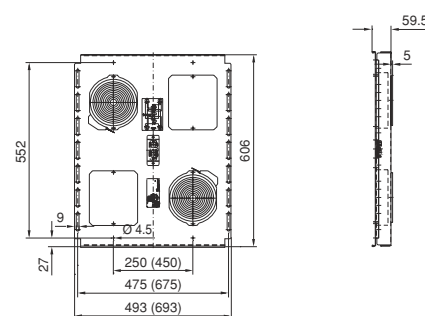
#### Note:

Only for mounting on the tubular door frame.

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



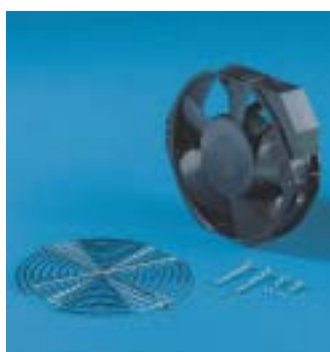
B = Width  
T = Depth



Part No. SK	3165.624 <sup>1)</sup>	3165.648 <sup>1)</sup>	3165.615 <sup>1)</sup>	3165.630 <sup>1)</sup>	3165.824 <sup>1)</sup>	3165.848 <sup>1)</sup>	3165.815 <sup>1)</sup>	3165.830 <sup>1)</sup>	Page
Voltage V, Hz	24 (DC)	48 (DC)	115, 50/60	230, 50/60	24 (DC)	48 (DC)	115, 50/60	230, 50/60	
<b>Air displacement (unimpeded air flow)</b>	<b>600 m³/h (353 cfm)</b>								
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 (inches)	H	606 (23.9)			606 (23.9)				
	B	493 (19.4)			693 (27.3)				
	T	64.5 (2.5)			64.5 (2.5)				
For doors with width in mm (inches)	600 (23.6)				800 (31.5)				
Noise level	55 dB (A)								
Temperature range	+20°C to +55°C (68°F to 131°F)								
Color	RAL 7035 (light gray)								
<b>Accessories</b>									
Temperature indicator	3114.024	–	3114.115	3114.100	3114.024	–	3114.115	3114.100	103
Thermostat	3110.000								104

<sup>1)</sup> Delivery times available on request.

Special voltages available on request. Technical modifications reserved.



### Fan expansion kit

**For door mounted fan**

To increase the air displacement of the door mounted fan.

To fit door mounted fan	Part No. SK
3165.624, 3165.824	<b>3165.024</b>
3165.648, 3165.848	<b>3165.048</b>
3165.615, 3165.815	<b>3165.115</b>
3165.630, 3165.830	<b>3165.230</b>



# Fan Systems

## For TS8 modular server enclosures



### Internal fan mounting panel

#### For TS8 modular server enclosures

A fan unit integrated into the TS8 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 retroactively by inserting or exchanging cover plates.

#### Technical specifications:

- Voltage: 230 V, 50/60 Hz
- Air displacement (3 fans): (unimpeded air flow) 200/230 m³/h (118/135 cfm)
- Power consumption (3 fans): 57/54 W
- Rated current (3 fans): 0.36/0.33 A

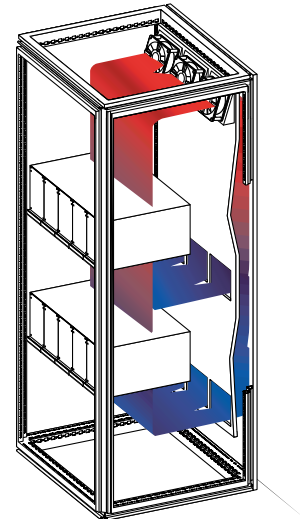
#### Configuration:

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

#### Property rights:

German patent no. 198 04 219  
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 TS8 enclosure mm (inches)		Height of internal panel mm (inches)	Part No. SK
Width	Height		
600 (23.6)	1800 (70.9)	1548 (61.0)	<b>3347.180</b>
	2000 (78.7)	1748 (68.8)	<b>3347.200</b>
80 (31.5)	1800 (70.9)	1548 (61.0)	<b>3348.180</b>
	2000 (78.7)	1748 (68.8)	<b>3348.200</b>



PU	Part No. SK
3	<b>3349.100</b>

#### 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

PU	Part No. SK
3	<b>3349.300</b>



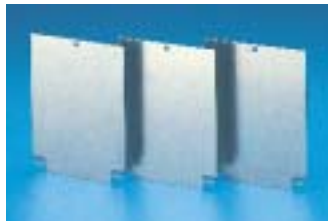
### Fan cross member

#### For internal fan mounting panel

May be added to increase the air circulation.

#### Technical specifications:

- Voltage: 230 V, 50/60 Hz
- Air displacement (3 fans): (unimpeded air flow) 200/230 m³/h (118/135 cfm)



### Cover plates

#### For internal fan mounting panel

For optional design of the air routing.



### Enclosure internal fan

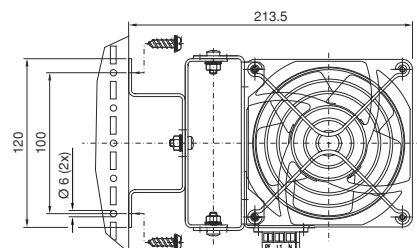
#### For TS8 modular server enclosures

To prevent hot spots and support the air routing of active enclosure climate control components. Adjustable in two axes. Attached to the TS8 frame section. Several fans may be cascaded using the quick-release clamping strip.

#### Configuration:

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

Air displacement, unimpeded air flow	Power consumption W	Rated current A	Voltage V, Hz	Part No. SK
160 m³/h (94 cfm)	19.0/18.0	0.12/ 0.11	230, 50/60	<b>3108.100</b>
	19.0/18.0	0.24/ 0.23	115, 50/60	<b>3108.115</b>
	3.5	0.15	24 V (DC)	<b>3108.024</b>



Climate Control





Condensation poses a high risk for control electronics, in outdoor and indoor locations. Various output ratings ensure that the correct thermal output is always available. Therefore the total required thermal output can be distributed with complete accuracy inside an enclosure.

### Simple assembly and perfect control



#### Fast assembly

This is achieved with a screw or snap fastening on the mounting panel or 35 mm (1.4") EN 50 022 support rails.

#### No condensation, and always the right temperature

The heater is controlled as required by a hygostat or enclosure internal thermostat.

### Maximum performance in the outdoor sector



#### Fully wired unit ready for connection

Compact power with 1000 W (3415 BTU) thermal output.

#### 19" rack mount

For seamless integration into the 482 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 (34 to 3415 BTU)
- Self-regulating PTC technology
- Quick-assembly system

### Important:

- For the correct temperature and to avoid condensation, use a thermostat or hygostat, see page 104
- The thermal output is increased with fans

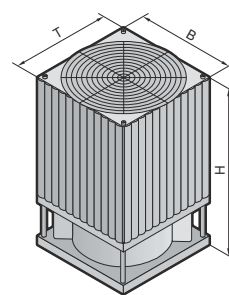
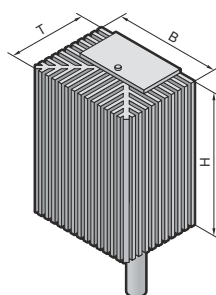
- Heaters should always be installed in an upright position. Leave a distance of 50 mm (2.0") at the top and bottom to allow circulation
- Heat is distributed evenly in large enclosures by using several low-output heaters

**General remarks and calculation formulas can be found on our website: [www.rittal-corp.com](http://www.rittal-corp.com)**



# Enclosure Heaters

Continuous thermal output 10 – 300 W (34 – 1025 BTU)



B = Width  
T = Depth

## Configuration:

Unit is ready to install with permanently attached connection cable (0.3 m (11.8")). 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 air conditioners, in order to prevent condensation

**Certifications,**  
see page 21.

**Detailed drawing,**  
see page 138.

**Performance diagrams,**  
available on the Internet,  
log onto [www.rittal-corp.com](http://www.rittal-corp.com).

Part No. SK		3105.000	3106.000	3115.000	3116.000	3107.000	3107.000 + 3108.000	3102.110 (incl. fan)	3102.000 (incl. fan)	
Dimensions in mm (inches)	H	75 (2.9)	125 (4.9)	110 (4.3)	185 (7.3)	140 (5.5)	178 (7.0)	168 (6.6)	168 (6.6)	
	B	45 (1.8)	45 (1.8)	64 (2.5)	64 (2.5)	80 (3.1)	80 (3.1)	120 (4.7)	120 (4.7)	
	T	35 (1.4)	35 (1.4)	45 (1.8)	45 (1.8)	118 (4.6)	118 (4.6)	120 (4.7)	120 (4.7)	
Voltage V, Hz		110 – 240 (AC/DC)					230, 50/60	115, 50/60	230, 50/60	
Continuous thermal output at T <sub>u</sub> = 20°C in W (BTU)		10 (34)	20 (68)	30 (102)	50 (171)	130 (444)	200 (683) <sup>1)</sup>	300 (1025) <sup>1)</sup>	300 (1025) <sup>1)</sup>	
Pre-fuse T		2 A		4 A						
Accessories		PU								Page
Thermostat		1	3110.000							104
Hygrostat		1	3118.000							104
Temperature indicator		1	3114.000							103

<sup>1)</sup> Output with fan

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



## Axial fan

### For heater SK 3107.000

Ball bearing  
Temperature range:  
–40°C to +85°C (–40°F to 185°F)  
Voltage:  
230 V, 50/60 Hz  
Power consumption: 18 watts  
Noise level: 33 dB (A)  
Speed: 2800/3300 rpm  
Air displacement: 50 m³/h (29 cfm)

PU	Part No. SK
1	3108.000



# Enclosure Heaters

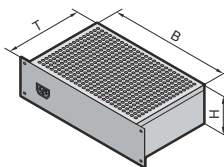
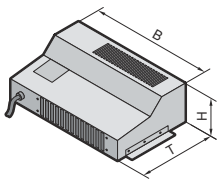
For CS outdoor enclosures, continuous thermal output 600/1000 W (2049/3415 BTU)



1



2



B = Width  
T = Depth

- 1 Enclosure heater  
2 Heater module

**Material:**  
Enclosure: Aluminum

**Finish:**  
Natural, 9763.023 with painted front panel

- Supply includes:**
- 1 Fully wired unit ready for connection with permanently attached connection cable.
- 2 Fully wired unit ready for connection, designed as a 482.6 mm (19") rack mount with 3 thermal components and 3 fan units.

**Certification,**  
see page 21.

**Detailed drawing,**  
available on the Internet,  
log onto [www.rittal-corp.com](http://www.rittal-corp.com).

**Performance diagrams,**  
available on the Internet,  
log onto [www.rittal-corp.com](http://www.rittal-corp.com).

Part No. CS		9769.015	9769.023	
Installation		in the enclosure	19" mounting rails	
Dimensions in mm (inches)	H	82 (3.2)	87.2 (3.4) 2U	
	B	325 (12.8)	482.6 (19)	
	T	220 (8.7)	236 (9.3)	
Voltage V, Hz		230 (AC), 50/60	230 (AC), 50/60	
Continuous thermal output in W (BTU)		1000 (3415)	600 (2049)	
Rated current maximum		5.0 A	2.6 A	
Temperature range		−33°C to +65°C (−27°F to 149°F)	−33°C to +65°C (−27°F to 149°F)	
Air displacement, unimpeded air flow		120 m³/h (70.6 cfm)	480 m³/h (283 cfm)	
Type of connection		Connection cable with wire end ferrules	Via front IEC connector (3-pole)	
Weight in kg (lb)		3.0 (6.6)	3.1 (6.8)	
Accessories		PU		
		Page		
Thermostat	1	3110.000	3110.000	104
Hygostat	1	3118.000	3118.000	104

B  
4.1

Enclosure Heaters



# Accessories For Climate Control

## Features

Finding the perfect climate control solution is easier than ever with matching system accessories. Perfectly coordinated components adapt the climate control components to your specific requirements. Be it targeted air routing or precise control of the equipment, Rittal has the ideal solution for any application.



### Air routing



**Air duct system for TopTherm roof-mounted air conditioner and air/water heat exchanger**  
With the air duct system, cold air may be routed directly to specific areas of the enclosure.



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



**Adaptor**  
For unhindered front air intake when using rack-mounted air conditioners in enclosures with front doors.

### Controller



**Enclosure internal thermostat and hygrometer**  
Constant temperature and humidity control to protect sensitive electronics.



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



**SK bus system**  
SK bus system with master/slave function to enable several air conditioners to communicate with one another.

### Installation/maintenance



**Fast assembly**  
Easy installation with prepared TS8 modular enclosure roof plates.

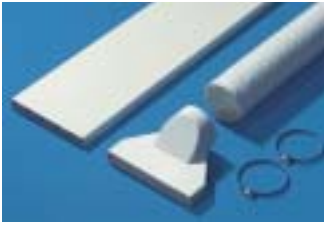


**Hose-proof hoods**  
For ratings IP 55 (NEMA 12) to EN 60 529/10.91 with filter fan units and outlet filters.



**Filter mats**  
For use in air conditioners under extreme conditions.





### Air duct system

#### For TopTherm roof-mounted air conditioners

The air duct system for Rittal TopTherm roof-mounted air conditioners makes it possible to route the cold air directly to specific areas of the enclosure. The risk of short circuits in the air circulation due to self-ventilated installed devices is eliminated.

The length of the flat duct is 1500 mm (59"), and it may be cut to the desired length.

#### Material:

Flame-resistant plastic to DIN 4102/B1.

#### Configuration:

Flat duct, compensating hose.



#### Accessories:

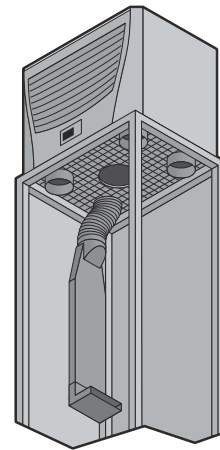
90° deflector.  
Cover plugs.



For air conditioner	PU	Part No. Air duct system SK
SK 3382. . . /SK 3383. . . /SK 3384. . . /SK 3385. . . /SK 3273. . . . /SK 3359. . . .	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 air conditioner may be reduced, depending on the application in question.



### 90° deflector

#### For air duct system

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

#### Material:

Flame-resistant plastic to DIN 4102/B1.

PU	Part No. SK
1	3286.990



### Plugs

#### For TopTherm roof-mounted air conditioners

To cover unneeded cold air outlets in TopTherm roof-mounted air conditioners.

#### Material:

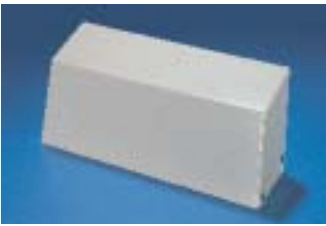
Polyurethane foam

For air conditioner	PU	Part No. SK
SK 3382. . . /SK 3359. . . .	2	3286.780
SK 3383. . . /SK 3384. . . /SK 3385. . . /SK 3273. . . .	2	3286.880
SK 3386. . . /SK 3387. . . .	2	3286.980



# Accessories For Climate Control

## Air routing

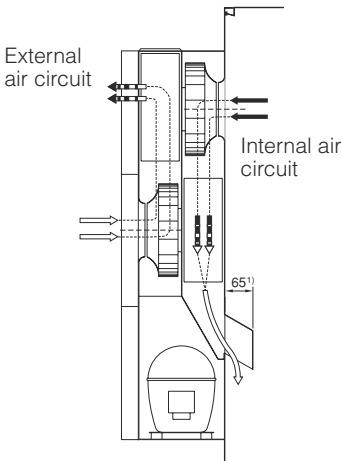


### Air diverter

For use in climate controlled enclosures, climate control doors, climate control sidewalls and Top-Therm wall-mounted air conditioners. For targeted 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 devices	Part No. SK
SK 8607. ... /SK 8687. ... SK 3306. ... /SK 3331. ...	<b>3213.300</b>
SK 3304. ... /SK 3305. ...	<b>3213.310</b>
SK 3328. ... /SK 3329. ...	<b>3213.320</b>
SK 3332. ...	<b>3213.330<sup>1)</sup></b>



<sup>1)</sup> 115 mm (4.5") for SK 3213.330



### Adaptor

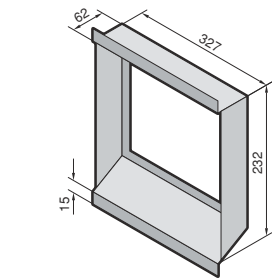
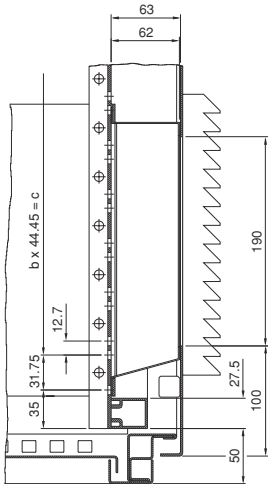
#### For front air infeed

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

**Material:**  
Sheet steel

**Configuration:**  
Adaptor, sealing gasket, foamed plastic gasket, assembly parts.

PU	Part No. SK
1	<b>3259.000</b>



### Air duct

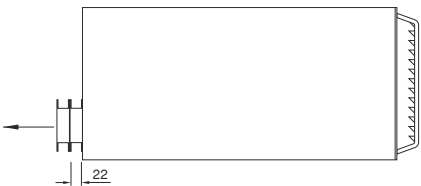
#### For discharge of waste air

For use of rack-mounted air conditioners SK 3292.134/SK 3278.134 in enclosures with a depth > 600 mm (23.6"). 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

**Configuration:**  
Air duct including attachment clamps.

PU	Part No. SK
10	<b>3220.000</b>



Air duct, may be extended to any length





### Digital enclosure internal temperature display and thermostat

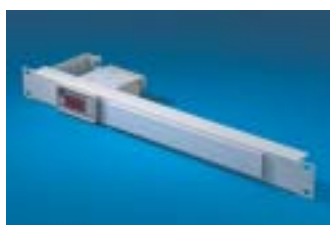
For installing on the enclosure door or wall and in an air conditioner or heat exchanger.

#### Technical specifications:

- Small dimensions
- Depth: 100 mm (3.9")
- The 3-digit 7-segment display is 13 mm (0.5") 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 (41°F to 158°F)
- With 1500 mm (59") 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 by the membrane keyboard at the front. Setting range: +5°C to +55°C (41°F to 131°F)
- Display and switching accuracy  $\pm 2$  K
- Mounting cutout 68 x 33 mm (2.7 x 1.3")
- Storage of the minimum and maximum recorded temperature until the system is reset

Voltage	Part No. SK
230 V (AC)	3114.100
115 V (AC)	3114.115 <sup>1)</sup>
24 V (DC)	3114.024 <sup>1)</sup>

<sup>1)</sup> Delivery times available on request.  
Special requirements available 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.

Voltage: 230 V (AC)

Special voltages available on request.

#### Technical specifications:

- Small dimensions
- Depth: 100 mm (3.9")
- The 3-digit 7-segment display is 13 mm (0.5") 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 (41°F to 158°F)
- With 1500 mm (59") 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 by the membrane keyboard at the front. Setting range: +5°C to +55°C (41°F to 131°F)
- Display and switching accuracy  $\pm 2$  K
- Mounting cutout 68 x 33 mm (2.7 x 1.3")
- Storage of the minimum and maximum recorded temperature until the system is reset

#### Configuration:

Panel, temperature indicator and thermostat, identification strip.

Color	Part No. DK
RAL 7035 (light gray)	7109.035



# Accessories For Climate Control

## Regulation/control



### Enclosure internal thermostat

Ideal for controlling filter fan 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:  
Category 5 – 3 (heating)  
AC 10 (4)<sup>1)</sup> A,  
DC = 30 W  
Category 5 – 4 (cooling)  
AC 5 (4)<sup>1)</sup> A,  
DC = 30 W  
(<sup>1)</sup>) = Inductive load at  $\cos \phi = 0.6$
- Setting range +5°C to +60°C (41°F to 140°F)
- Weight approximately 105 grams (3.7 oz)
- Dimensions 71 x 71 x 33 mm (2.8 x 2.8 x 1.3")
- Switching difference approximately 1 K  $\pm$  0.8 K

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



- A broad voltage spectrum, just one model covers 24 to 230 V.
- Time-saving connection technique using a terminal strip with a screw connection from the outside.
- Flexible mounting on a vertical or horizontal 35 mm (1.4") 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 level in the enclosure is exceeded. 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)<sup>1)</sup> A  
DC = maximum 20 W  
(<sup>1)</sup>) = Inductive load at  $\cos \phi = 0.6$
- Setting range 50 – 100 % relative humidity
- Weight approximately 100 g (3.5 oz)
- Dimensions 71 x 71 x 33.5 mm (2.8 x 2.8 x 1.3")
- Switching difference approximately 4 %

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

- A broad voltage spectrum, just one model covers 24 to 230 V.
- Time-saving connection technique using a terminal strip with a screw connection from the outside.
- Flexible mounting on a vertical or horizontal 35 mm (1.4") 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 filter fan units and enclosure heaters. In conjunction with screwed cable glands, it is also suitable for use as strain relief.

PU	Part No. SK
1	3110.200





### Speed control

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

#### Technical specifications:

- For mounting on a 35 mm (1.4") support rail EN 50 022
- Dimensions (H x W x D): 57 x 94 x 180 mm (2.4 x 3.7 x 7.1")
- Voltage: 230 V (AC)/115 V (AC)
- Setting range: +20°C to +55°C (68°F to 131°F)
- 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)

Voltage	Part No. SK
230 V (AC)	3120.000
115 V (AC)	3120.115 <sup>1)</sup>

<sup>1)</sup> Delivery times available on request.



#### Configuration:

Speed control, built into a PK enclosure 9512.100, NTC sensor, length 1.80 m (71").



### 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.

PU	Part No. DK
1 set	7526.964

#### Configuration:

Mounting adaptor including assembly parts.



### Interface card

#### For TopTherm air conditioners with comfort controller

The interface card is an extension for TopTherm air conditioners with comfort controller. In this way it is possible, to monitor a master/slave combination of up to 10 air conditioners. Control is achieved by standardized interfaces: RS232 (DB9) or RS 485, one PLC interface (DB9).

RS 422 (RJ 45 jack) is the connection to the Rittal CMC-TC. Remote monitoring by TCP-IP, graphical interfaces for operation, evaluation and control, documentation, connection to additional sensors for access control, 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 by a wide-range power pack DK 7320.425 (100 to 240 V AC, 50/60 Hz) or externally by a Kycon connector.

PU	Part No. SK
1	3124.200

#### Configuration:

Interface card integrated into a plastic box H x W x D mm (inches):

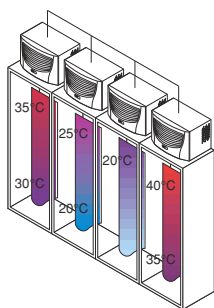
44 or 1 U x 136 x 129 (1.7 or 1 U x 5.4 x 5.1).

Serial SUB-D cable, 1.5 m (59").



# Accessories For Climate Control

## Regulation/control



### SK bus system

The SK bus system facilitates communications between several enclosure air conditioners, TopTherm .500/.510/.540, production date 05/02 or later, by a master/slave construction such as that required in complex bayed enclosure systems for optimum operating results.

#### Technical specifications:

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

For	Part No. SK
TopTherm	<b>3124.100</b>
Climate controlled enclosures	<b>3124.000</b>

#### Configuration:

3 m (118") shielded interface cable, including operating manual on programming the air conditioners.

#### Note:

$n_B = n_K - 1$

$n_B$ : Number of order units (SK bus system)

$n_K$ : Number of air conditioners to be linked

#### Property rights:

German patent no. 196 15 469



### Cable connection kit

#### For CS outdoor air conditioners

For simple connection of CS air conditioners. All cables preassembled with the corresponding connectors. Length of cables approximately 2500 mm (98").

#### Configuration:

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

PU	Part No. CS
1 set	<b>9765.105</b>



### 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 approximately 2500 mm (98").

Option	Part No. CS
3 cables for AC/DC and alarm connection	<b>9765.110</b>
2 cables for AC/DC and alarm connection	<b>9765.115</b>



### Test adaptor

#### For CS outdoor climate control equipment

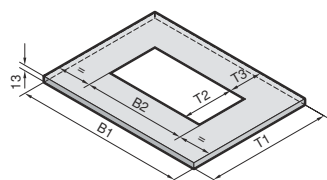
The 9-pole sub-D interface allows testing of all CS climate control equipment. Alternatively supports automatic or manual test procedures.

#### Configuration:

1 set = test adaptor including 2 m (78.7") connection cable.

PU	Part No. CS
1 set	<b>9765.050</b>





B = Width  
T = Depth

### Roof plates TS

For mounting on:

- TopTherm roof-mounted air conditioners
- TopTherm roof-mounted fan
- Vent attachment TS

The cutouts in the roof plate are arranged in such a way that the TopTherm roof-mounted air conditioners are positioned centrally on the enclosure.

#### Material:

Sheet steel

#### Configuration:

Assembly parts.

#### Color:

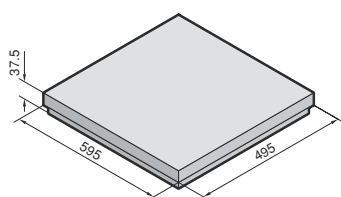
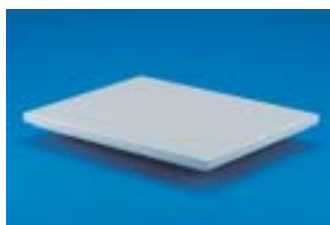
RAL 7035 (light gray)

For modular enclosures W x D mm (inches)	To fit the mounting of TopTherm	Part No. TS
600 x 600 (23.6 x 23.6)	SK 3382. . . .	<b>8801.300<sup>1)</sup></b>
800 x 600 (31.5 x 23.6)		<b>8801.320</b>
600 x 600 (23.6 x 23.6)	SK 3273.5 . . SK 3383. . . . SK 3384. . . . SK 3385. . . .	<b>8801.310<sup>1)</sup></b>
800 x 600 (31.5 x 23.6)		<b>8801.330</b>
1200 x 600 (47.2 x 23.6)	SK 3385. . . .	<b>8801.350</b>
800 x 600 (31.5 x 23.6)	SK 3386. . . . SK 3387. . . .	<b>8801.340<sup>2)</sup></b>
1200 x 600 (47.2 x 23.6)	SK 3387. . . .	<b>8801.360</b>

<sup>1)</sup> When mounting the air conditioners, there may be a collision with the eyebolts of the enclosure; for this reason roof fastening screws are supplied loose with the roof plates.

<sup>2)</sup> Attachment is from the inside using metal brackets and retaining clamps.

For mounting TopTherm	Dimensions in mm (inches)				Part No. TS
	B1	B2	T2	T3	
SK 3382. . . .	567.5 (22.3)	475 (18.7)	260 (10.2)	129.3 (5.1)	<b>8801.300</b>
SK 3382. . . .	767.5 (30.2)	475 (18.7)	260 (10.2)	129.3 (5.1)	<b>8801.320</b>
SK 3383. . . . / SK 3384. . . . / SK 3385. . . .	567.5 (22.3)	490 (19.3)	390 (15.4)	61.3 (2.4)	<b>8801.310</b>
SK 3383. . . . / SK 3384. . . . / SK 3385. . . .	767.5 (30.2)	490 (19.3)	390 (15.4)	61.3 (2.4)	<b>8801.330</b>
SK 3383. . . . / SK 3384. . . . / SK 3385.XXX	1167.5 (46.0)	490 (19.3)	390 (15.4)	61.3 (2.4)	<b>8801.350</b>
SK 3386. . . . / SK 3387. . . .	767.5 (30.2)	692 (27.2)	392 (15.4)	57.8 (2.8)	<b>8801.340</b>
SK 3386. . . . / SK 3387. . . .	1167.5 (46.0)	692 (27.2)	392 (15.4)	57.8 (2.8)	<b>8801.360</b>
	T1	for all models is 567.5 mm (22.3")			



### Vent attachment TS

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

#### Color:

RAL 7035 (light gray)

#### Rating:

IP 43

#### Configuration:

Assembly parts.

For roof plates with cutout mm (inches)	Part No. TS
490 x 390 (19.3 x 15.4)	<b>8801.380</b>



### Trim frame

#### For slimline air conditioners

Slimline air conditioners can be internally or externally mounted on an enclosure door or wall. The trim frame presents a closed front for the air conditioner.

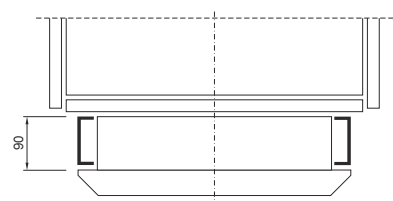
#### Material:

Sheet steel

#### Color:

RAL 7035

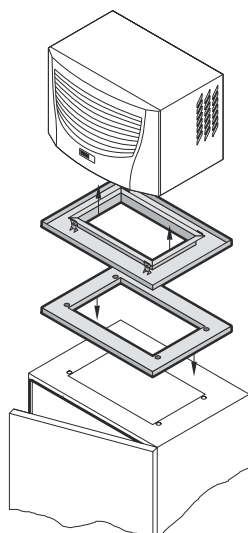
For air conditioner	Part No. SK
SK 3366. . . . SK 3377. . . .	<b>3377.000</b>





# Accessories For Climate Control

## General



### Quick-change frame

#### For TopTherm roof-mounted air conditioners

The quick-change frame is more than just an alternative to the standard air conditioner frame. Combined with the seal, the lower part of the frame is screw-fastened to the enclosure. This allows the plug-in air conditioner to be attached or removed from the top part of the quick-change frame that was previously mounted on the air conditioner using quick-release fasteners. In case of servicing, this means minimal assembly time and minimal downtime. The quick-change frame offers effective protection against the ingress of oil into the enclosure in oily atmospheres, due to its integrated drainage trough.

#### Material:

Sheet steel

#### Color:

RAL 7035 (light gray)

#### Configuration:

Quick-change frame, seal, quick-release fasteners.

For TopTherm air conditioner	Part No. SK
SK 3382. . . .	<b>3286.700</b>
SK 3383. . . . SK 3384. . . . SK 3385. . . .	<b>3286.800</b>
SK 3386. . . . SK 3387. . . .	<b>3286.900</b>

#### Property rights:

German patent no. 41 10 323

French Patent no. 2 675 317

GB patent no. 2 254 735



### Electronic condensate evaporator

For external mounting on enclosures.  
For use with all enclosure air conditioners and air/water heat exchangers.

Evaporation performance:

<sup>1)</sup> 2.4 l/d (0.6 gal/d)

<sup>2)</sup> 4.2 l/d (1.1 gal/d)

#### Color:

RAL 7035 (light gray)

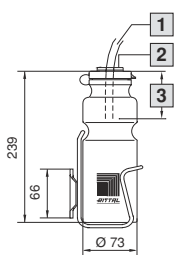
#### Configuration:

Electronic condensate evaporator, ready for connection.

Voltage in V, Hz	Part No. SK	
	For SK 3302/ SK 3303	For 400 mm (15.7") wide air conditioners
230 V, 50/60 Hz	<b>3301.560<sup>1)</sup></b>	<b>3301.570<sup>2)</sup></b>
115 V, 50/60 Hz	<b>3301.580<sup>1)</sup></b>	<b>3301.590<sup>2)</sup></b>

#### Detailed drawing,

see page 139.



### Condensate collecting bottle

For mounting on the enclosure.  
For use with all enclosure air conditioners and air/water heat exchangers.  
Safety overflow at the side.  
Capacity approximately 0.75 l (0.2 gal).

**1** Condensate discharge tube

**2** Membrane grommet

**3** Maximum 70 mm (2.8")

PU	Part No. SK
1	<b>3301.600</b>

#### Configuration:

Condensate collecting bottle, bottle holder including assembly parts.



### Condensate hose

For removing and forwarding condensate. For connecting to enclosure air conditioners.

#### Material:

PVC, transparent

#### Configuration:

10 m (394") hose.

For devices	Material thickness Ø	Part No. SK
SK 3302. . . . /SK 320. . . .	8 x 1.5 mm (0.06")	<b>3301.608</b>
SK 3303. . . . /SK 3361. . . .	10 x 1.5 mm (0.06")	<b>3301.610</b>
SK 3273. . . . /SK 3304. . . . SK 3305. . . . /SK 3328. . . . SK 3329. . . . /SK 3332. . . . SK 3366. . . . /SK 3359. . . . SK 3382. . . . /SK 3383. . . . SK 3384. . . . /SK 3385. . . . SK 3386. . . . /SK 3387. . . . SK 3377. . . .	12 x 2 mm (0.08")	<b>3301.612</b>



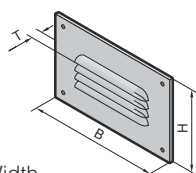


### Integrated louvers

For ventilation by convection; easily retrofitted using 4 screws.

**Material:**  
Sheet steel

**Color:**  
RAL 7035 (light gray)

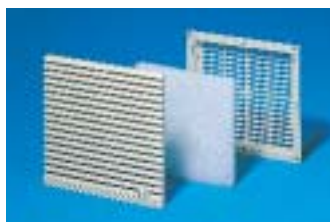


B = Width  
T = Depth

H mm (inches)	W mm (inches)	D mm (inches)	PU	Part No. SK
110 (4.3)	160 (6.3)	8 (0.3)	4	2541.235
100 (3.9)	210 (8.3)	8 (0.3)	4	2542.235
110 (4.3)	330 (13.0)	8 (0.3)	4	2543.235

For RAL 7032 (pebble gray), use order extension .200; to order primed version, use extension .300. Delivery times available on request.

**Detailed drawing,**  
see page 139.



### Outlet filter

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

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

**Color:**  
RAL 7035 (light gray)

**Configuration:**  
Outlet filter including filter mat.



Dimensions in mm (inches)	Part No. SK
116 x 22 (4.6 x 0.9)	3321.207
148 x 24.5 (5.9 x 1.0)	3322.207
204 x 30 (8.0 x 1.2)	3323.207
255 x 30 (10.0 x 1.2)	3325.207
323 x 30 (12.7 x 1.2)	3326.207

For RAL 7032 (pebble gray), use order extension .200.

**Note:**  
EMC version,  
see page 83.



#### Accessories:

Spare filter mats.  
Fine filter mats.



### Hose-proof hoods

#### For filter fan units/outlet filters

When the hose-proof hood is mounted above the filter fan unit and outlet filter in conjunction with a fine filter mat, a rating of IP 56 (NEMA 3R) to EN 60 529/10.91 is achieved. Particularly suitable for use in the food industry.

**Material:**  
Stainless steel

**Rating:**  
In conjunction with the filter fan units/outlet filters, NEMA 3R + 12 is met.



For	Dimensions in mm (inches)	Part No. SK
SK 3321. . . .	260 x 150 x 40 (10.2 x 5.9 x 1.6)	3321.800 <sup>1)</sup>
SK 3322. . . .	270 x 176 x 55 (10.6 x 6.9 x 2.2)	3322.800
SK 3323. . . .	410 x 233 x 55 (16.1 x 9.2 x 2.2)	3323.800
SK 3324. . . . SK 3325. . . .	500 x 282 x 85 (19.7 x 11.1 x 3.3)	3324.800
SK 3326. . . . SK 3327. . . .	560 x 350 x 110 (22.0 x 13.8 x 4.3)	3326.800

<sup>1)</sup> Delivery times available on request.





# Accessories For Climate Control

## General



### Front outlet grille 2U

#### 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.

PU	Part No. SK
1	3176.000

#### + Accessories:

Filter mat.



### Filter holder

#### For roof ventilation

The use of a filter mat is required in order to increase the ratings of the roof vent (SK 3148.000). Ratings IP 43 to EN 60 529/10.91 is achieved.

**Material:**  
Sheet steel

**Configuration:**  
Filter holder including filter mat.

H x W x D mm (inches)	Part No. SK
244 x 340 x 15 (9.6 x 13.4 x 0.6)	3175.000

#### + Accessories:

Spare filter mat.



### Bypass safety valve

For use with chiller systems and air/water heat exchangers.

**Material:**  
Brass

Option	PU	Part 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.

**Material:**  
Brass

Option	PU	Part No. SK
3/4" x 1/2" flow regulator valve	1	3301.930
3/4" x 3/4" flow regulator valve	1	3301.940





### Additives for chiller systems

**Configuration:**  
10 l (2.2 gal) canister.

Rifrost	Anti freeze water mixture	Part No. SK
Outdoor	1 : 2	<b>3301.950</b>
Standard	1 : 4	<b>3301.960</b>



### Filter mats

Rittal air conditioners 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 (-40°F to 176°F). Thickness: 10 mm (3.9").

#### For TopTherm air conditioners

For air conditioner	H x W x D mm (inches)	PU	Part No. SK
SK 3302.300/SK 3302.310	95 x 190 x 10 (3.7 x 7.5 x 0.4)	3	<b>3286.110</b>
SK 3302. ... /SK 3303. ... /SK 3361. ...	200 x 265 x 10 (7.9 x 10.4 x 0.4)	3	<b>3286.300</b>
SK 3304. ... /SK 3305. ... /SK 3328. ... /SK 3329. ... /SK 3332. ... /SK 3366. ...	268 x 344 x 10 (10.6 x 13.5 x 0.4)	3	<b>3286.400</b>
SK 3273. ... /SK 3382. ... /SK 3383. ... /SK 3384. ... /SK 3385. ... /SK 3359. ...	255 x 530 x 10 (10.0 x 20.9 x 0.4)	3	<b>3286.500</b>
SK 3386. ... /SK 3387. ...	300 x 720 x 10 (11.8 x 28.3 x 0.4)	3	<b>3286.600</b>
SK 3377. ...	210 x 205 x 10 (8.3 x 8.1 x 0.4)	3	<b>3253.010</b>

#### For discontinued air conditioners

For air conditioner	H x W x D mm (inches)	PU	Part No. SK
SK 3296. ... /SK 3272.100/SK 3290. ... /SK 3280.100/SK 3299. ... /SK 3261. ...	332 x 539 x 10 (13.1 x 21.2 x 0.4)	3	<b>3286.100</b>
SK 3265.100/SK 3266.100	332 x 270 x 10 (13.1 x 10.6 x 0.4)	3	<b>3267.100</b>
SK 3256. ...	300 x 395 x 10 (11.8 x 15.6 x 0.4)	3	<b>3254.000</b>
SK 3293. ... /SK 3281.100/SK 3298. ... /SK 3279.100/SK 3260. ... /SK 3269. ... /SK 3262.100/SK 3393. ... /SK 3381.100/SK 3391. ...	313 x 334 x 10 (12.3 x 12.3 x 0.4)	3	<b>3294.100</b>
SK 3255. ... /SK 3395. ...	245 x 350 x 10 (9.6 x 13.8 x 0.4)	3	<b>3253.000</b>
SK 3394. ...	200 x 315 x 10 (7.9 x 12.4 x 0.4)	3	<b>3285.000</b>
SK 3292.134/SK 3278.134	250 x 325 x 10 (9.8 x 12.7 x 0.4)	3	<b>3286.000</b>



### Filter mats

Made of chopped-fiber mat with a progressive structure. Temperature resistant to 100°C (212 °F), 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:

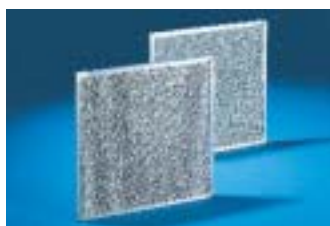
Chemical fiber

For centrifugal fans/front outlet grilles 2U	H x W x D mm (inches)	PU	Part No. SK
SK 3144.000/SK 3145.000/SK 3176.000	85 x 425 x 8 (3.3 x 16.7 x 0.3)	5	<b>3177.000</b>



# Accessories For Climate Control

## Filter mats



### Metal filter

When air conditioners 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:

Aluminum

Thickness: 10 mm (0.4")

#### For TopTherm air conditioners

For air conditioner	H x W x D mm (inches)	PU	Part No. SK
SK 3302.300/SK 3302.310	95 x 190 x 10 (3.7 x 7.5 x 0.4)	1	<b>3286.120</b>
SK 3302.100/SK 3302.110/SK 3303. . . /SK 3361. . . .	200 x 265 x 10 (7.9 x 10.4 x 0.4)	1	<b>3286.310</b>
SK 3304. . . /SK 3305. . . /SK 3328. . . /SK 3329. . . /SK 3332. . . /SK 3366. . . .	288 x 344 x 10 (11.3 x 13.5 x 0.4)	1	<b>3286.410</b>
SK 3273. . . /SK 3382. . . /SK 3383. . . /SK 3384. . . /SK 3385. . . /SK 3359. . . .	255 x 530 x 10 (10.0 x 20.9 x 0.4)	1	<b>3286.510</b>
SK 3386. . . /SK 3387. . . .	300 x 720 x 10 (11.8 x 28.3 x 0.4)	1	<b>3286.610</b>
SK 3377. . . .	210 x 205 x 10 (8.3 x 8.1 x 0.4)	1	<b>3253.220</b>

#### For discontinued air conditioners

For air conditioner	H x W x D mm (inches)	PU	Part No. SK
SK 3296. . . /SK 3272.100/SK 3290. . . /SK 3280.100	290 x 520 x 10 (11.4 x 21.3 x 0.4)	1	<b>3286.210</b>
SK 3299. . . /SK 3261. . . .	315 x 520 x 10 (12.4 x 21.3 x 0.4)	1	<b>3286.200</b>
SK 3265.100/SK 3266.100	320 x 265 x 10 (12.6 x 10.4 x 0.4)	1	<b>3267.200</b>
SK 3256. . . .	365 x 315 x 10 (14.3 x 12.4 x 0.4)	1	<b>3254.200</b>
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 (11.8 x 12.9 x 0.4)	1	<b>3294.200</b>
SK 3255. . . /SK 3395. . . .	210 x 348 x 10 (8.7 x 13.7 x 0.4)	1	<b>3253.200</b>
SK 3394. . . .	415 x 375 x 10 (16.3 x 14.8 x 0.4)	1	<b>3285.200</b>

#### For climate control doors

For climate control door	H x W x D mm (inches)	PU	Part No. SK
SK 3306. . . /SK 3307. . . /SK 3309. . . /SK 3310. . . .	100 x 424 x 10 (3.9 x 16.7 x 0.4)	1	<b>3284.200</b>
SK 3308. . . .	100 x 624 x 10 (3.9 x 24.6 x 0.4)	1	<b>3288.200</b>
SK 3331. . . .	150 x 380 x 10 (5.9 x 15.0 x 0.4)	1	<b>3289.200</b>

#### For Mini chiller systems

For chiller systems	H x W x D mm (inches)	PU	Part No. SK
SK 3318.600/SK 3318.610/SK 3319.600/SK 3319.610	255 x 530 x 10 (10.0 x 20.9 x 0.4)	1	<b>3286.510</b>
SK 3320.600/SK 3334.600	558 x 500 x 8 (22.0 x 19.7 x 0.3)	1	<b>3286.520</b>
SK 3360. . . .	268 x 344 x 10 (10.6 x 13.5 x 0.4)	1	<b>3286.410</b>





### Spare filter mats

Made of chopped-fiber mat with a progressive structure.  
Temperature resistant to 100°C (212°F), 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 fiber

#### For filter fan units

For filter fan units	H x W x D mm (inches)	PU	Part No. SK
SK 3321. . . .	89 x 89 x 10 (3.5 x 3.5 x 0.4)	5	<b>3321.700</b>
SK 3322. . . .	120 x 120 x 12 ((4.7 x 4.7 x 0.5)	5	<b>3322.700</b>
SK 3323. . . .	173 x 173 x 17 (6.8 x 6.8 x 0.7)	5	<b>3171.100</b>
SK 3324. . . /SK 3325. . . .	221 x 221 x 17 (8.7 x 8.7 x 0.7)	5	<b>3172.100</b>
SK 3326. . . .	289 x 289 x 17 (11.4 x 11.4 x 0.7)	5	<b>3173.100</b>
SK 3327. . . .	289 x 289 x 10 (11.4 x 11.4 x 0.4)	5	<b>3327.700</b>

#### For filter holders

For filter holders	H x W x D mm (inches)	PU	Part No. SK
SK 3175.000	242 x 338 x 20 (9.5 x 13.3 x 0.8)	3	<b>3174.000</b>



### Fine filter mats

Made of chopped-fiber mat with a progressive structure.  
Temperature-resistant to 100°C (212°F), 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 fiber

#### For filter fan units/outlet filters

For filter fan units/outlet filters	H x W x D mm (inches)	PU	Part No. SK
SK 3323. . . .	173 x 173 x 12 (6.8 x 6.8 x 0.5)	5	<b>3181.100</b>
SK 3324. . . /SK 3325. . . .	221 x 221 x 12 (8.7 x 8.7 x 0.4)	5	<b>3182.100</b>
SK 3326. . . /SK 3327. . . .	289 x 289 x 12 (11.4 x 11.4 x 0.5)	5	<b>3183.100</b>





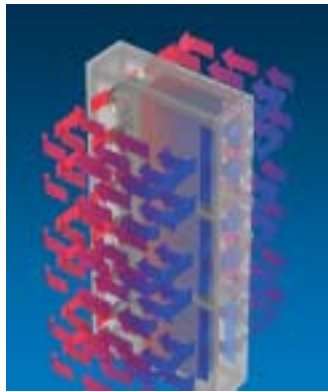
# Liquid Cooling

## Features



From passive air climate control to active liquid cooling of high-performance CPUs, Rittal provides all the required components and systems, designed to your requirements.

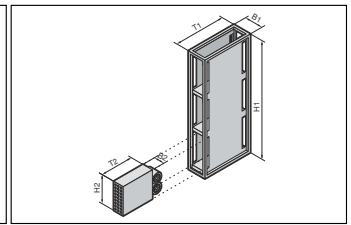
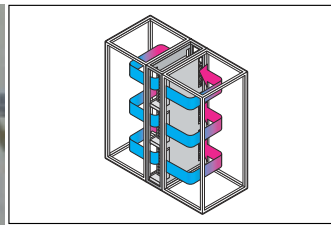
Software-assisted planning and calculation of requirements, together with modular, rack-compatible technology, help to minimize investment costs, thereby offering a future safe solution with a high degree of flexibility.



### Liquid cooling package



Modular, upgradeable and temperature neutral cooling concept. 12 kW (40,982 BTU) cooling capacity, with three cooling modules supported per cooling rack.



#### Optimized air routing

Cold air is blown in at the sides, so that the cold air is evenly distributed in front of the 482.6 mm (19") level.

Optionally 1 or 2 server racks may be cooled – both stand-alone and bayed sitings are possible. Bayable to TS and PS server racks, even retroactively.



### Rack-mounted chiller system



#### Microcontroller control



#### Liquid-cooled computers

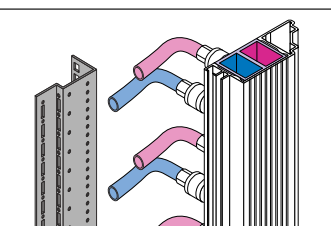
In a 482.6 mm (19") server rack are supplied by the shortest route by six cooling circuits, without the need for an additional rising main.



#### Vibration-free installation



### Cooling circuit distributor for processor climate control

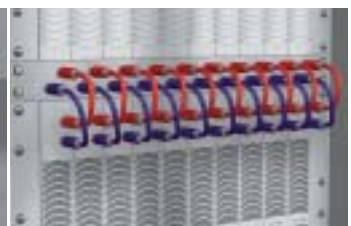


The distribution pipes for inlet and return lines for targeted, reliable liquid cooling may be integrated into all standard rack systems.



#### Cooling circuit distributor kit Blade server

The 482.6 mm (19") distributors are connected to the rising main.

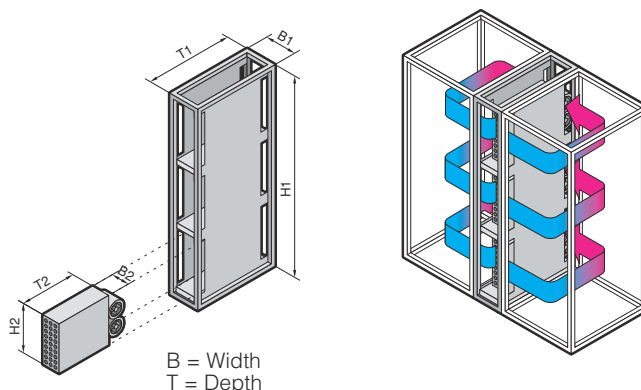


#### Cooling circuit distributor 482.6 mm (19")

Connections for 10 servers and a main connection to the vertical rising main.



## Rittal liquid cooling package



Modular, upgradeable and temperature neutral cooling concept.

- Maximum cooling capacity 12 kW (40,982 BTU), with three cooling modules possible per cooling rack
- Approximate cooling capacity 4 kW (13,661 BTU) per cooling module at 800 m³/h (471 cfm) air displacement
- Optimized air routing: Cold air is blown in at the sides, so that the cold air is evenly distributed in front of the 482.6 mm (19") level

- Optionally 1 or 2 server racks may be cooled – stand-alone and bayed siting possible
- Bayable to TS and PS server racks, even retroactively
- Active condensate handling
- Optional control and monitoring<sup>1)</sup> of the cooling rack via Rittal CMC-TC
- Two-piece modules; for easy installation in narrow passageways

#### Technical specifications:

- Mounted as a cooling rack on a server rack based on TS8 modular enclosure, with H = 2000 mm (78.7"), D = 1000 mm (39.4").
- Each cooling rack can accommodate a maximum of three air/water heat exchanger cooling modules.
- Standard supply: Cooling rack equipped with one cooling module.
- Individual modules upgradeable to full installation by quick-release couplings.

- Controlled by a separate module which may be connected to the CMC-TC for incorporation into the network (monitoring).
- Condensation management: The pump in the condensate tray pumps any condensation into the return section of the cooling circuit.

Part No. SK	Enclosure + 3 modules		Individual module for 230 V/115 V
	3301.230	3301.210	3301.250
Voltage V, Hz	230, 50/60	115, 50/60	230, 50/60
Dimensions in mm (inches)	H 2000 (78.7)		550 (21.7)
	B 300 (11.8)		250 (9.8)
	T 1000 (39.4)		950 (37.4)
Useful cooling capacity at 15°C (59°F) water inlet, 15 l/min (4 gal/min), 20°C (68°F) cold air in W/BTU	4000/3500 (13,661/11,953)		

Rated current maximum	1.8 A
Pre-fuse T	5.0 A
Cooling medium	Water (specifications may be found on the Internet)
Water inlet temperature	+5°C to +30°C (41°F to 86°F)
Permissible operating pressure p. maximum	2 to 8 bar (29 to 116 psi)
Temperature range	+5°C to +40°C (41°F to 104°F)
Ratings to EN 60 529/10.91	IP 30
Duty cycle	100 %
Type of connection	Current: Connection cable with earthing-pin plug: Water: 3/4" quick-release fastener
Weight in kg (lb)	Maximum 160 (352.7)
Color	RAL 7035 (light gray)
Air displacement of fans	Maximum 2400/2100 m³/h (1413/1236 cfm)
Temperature control	Electronically controlled magnetic valve and 4-way fan control

<sup>1)</sup> Flow, leakage, inlet/return, intake/exhaust temperature.

The general remarks on air/water heat exchangers apply; (available on the Internet, log onto [www.rittal-corp.com](http://www.rittal-corp.com)).

**For professional installation of the heat exchanger, where possible, the enclosures being cooled should be sealed against the ingress of ambient air:**

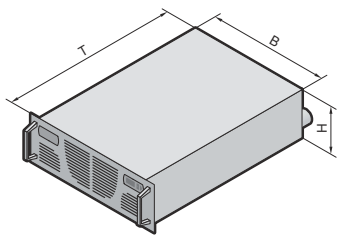
Description	Dimensions in mm (inches)	PU	Part No.	Description	Dimensions in mm (inches)	PU	Part No.
Sidewall, screw-fastened	H x D 2000 x 1000 (78.7 x 39.4)	2	<b>8100.235</b>	Divided partitioning plate for retrofitted sealing in the base area	W x D 600 x 1000 (23.6 x 39.4)	1	<b>7825.300</b>
Viewing door	H x W 2000 x 600 (78.7 x 23.6)	1	<b>8610.600<sup>2)</sup></b>		800 x 1000 (31.5 x 39.4)	1	<b>7825.302</b>
	2000 x 800 (78.7 x 31.5)	1	<b>8610.800<sup>2)</sup></b>	Divided roof plate for cable entry	W x D 600 x 1000 (23.6 x 39.4)	1	<b>7826.605<sup>3)</sup></b>
Sheet steel door, solid	H x W 2000 x 600 (78.7 x 23.6)	1	<b>7824.205<sup>2)</sup></b>		800 x 1000 (31.5 x 39.4)	1	<b>7826.805<sup>3)</sup></b>
	2000 x 800 (78.7 x 31.5)	1	<b>7824.207<sup>2)</sup></b>	Sealing kit for two-sided cooling when bayed		1 set	<b>7825.305</b>
<sup>2)</sup> Alternatively: Sealing kit for vented sheet steel doors	H x W 2000 x 600 (78.7 x 23.6)	1	<b>7824.185</b>				
	H x W 2000 x 800 (78.7 x 31.5)	1	<b>7824.187</b>				

<sup>3)</sup> Retro-fitting is not possible.



# Cooling

## Rack-mounted chiller system



B = Width  
T = Depth

Liquid-cooled computers in a 482.6 mm (19") server rack are supplied by the shortest route by six cooling circuits, without an additional rising main.

- Partial liquid cooling in diverse environments
- Combination of air and liquid cooling possible

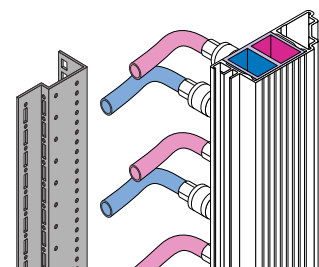
- Technical specifications:**
- Installation in the 482.6 mm (19") level of the enclosure
  - 6 cooling circuit connections for server/CPU cooling on the back of the chiller via drip-free quick-release couplings
  - Vibration-free installation
  - 2 freely programmable alarm outputs
  - Operating pressure display
  - Optional automatic bypass

- ! Also required:**
- Quick-release couplings
  - Heat sink, retaining clamps
  - Hose, see page 118.

<b>Part No. SK</b>		<b>3301.260</b>
Voltage V, Hz		230, 50/60
Dimensions in mm (inches)	H	175 (6.9)
	B	442 (17.4)
	T	751 (29.6) + 100 mm (3.9") for water connections
<b>Cooling capacity at</b> <b>T<sub>w</sub> = 25°C (77°F)</b> <b>T<sub>u</sub> = 32°C (89.6°F),</b> <b>2 l/h (0.5 gal/h) in W (BTU)</b>		<b>1000/1070 (3415/3654)</b>
Power consumption		640/790 W
Rated current maximum		4.5 A
Refrigerant		R134a, 550 g
P <sub>max.</sub> cooling circuit		25 bar (363 psi)
Temperature range	Environment	+10°C to +40°C (50°F to 104°F)
	Liquid media	+10°C to +35°C (50°F to 95°F)
Pump capacity	<b>4 l/min (1.1 gal/min)</b>	2 bar (29 psi)
Tank		Pressure-sealed
Tank capacity		–
Water connections		Quick-release coupling, drip-free
Weight in kg (lb)		45 (99.2)
Color		Textured RAL 7035 (light gray)
Ratings (electric)		IP 20
Air displacement of fans		450 m³/h (265 cfm)
Temperature control		Microcontroller, setting range +10°C to +30°C (50°F to 86°F) (factory setting +18°C (64°F))

Delivery times available on request.





## Cooling manifold for racks

### Water cooling

High performance for CPUs, power packs and disk drives by cooling directly at the area where heat is generated. The manifold pipes for inlet and return lines for targeted, reliable liquid cooling may be integrated into all standard rack systems.

They are linked to an external, central air conditioner which also controls the inlet temperature. The drip-free quick-release coupling ensures an extremely high level of operational reliability. Monitoring of the systems function is performed by the Rittal CMC-TC module.

There are 2 complete basic packages available for retrofitting for different enclosure heights.

### Configuration:

#### Package 1

Water intake:

Connection system, non-return valve and 10 m (394") hose, 1/2", fittings, filter, vent valve.

Water distribution:

Cooling circuit distributor for 20 CPU cooling circuits, vent valve, 40 bulkhead couplings, 50 m (1969" or 10.9 yards) distributor hose, 6 mm (0.2").

#### Package 2

Water intake:

Connection system, non-return valve and 10 m (394") hose, 1/2", fittings, filter, vent valve.

Water distribution:

Cooling circuit distributor for 40 CPU cooling circuits, vent valve, 80 bulkhead couplings, 100 m (3937" or 109 yards) distributor hose, 6 mm (0.2").

For modular enclosure height		Part No. SK	
mm (inches)	U	Package 1	Package 2
1200 (47.2)	24	<b>3301.810</b>	–
2000 (78.7)	42	–	<b>3301.820</b>



### Also required:

Chiller system, see page 50 onwards.



### Accessories:

Manifold accessories.

## Cooling circuit manifold kit

### For blade server

Our liquid cooling for server racks serves as a basis for this solution. The large number of drip free taps to the individual computer is now replaced by the connection of horizontal liquid subdistributors, where the drip-free connectors for connection of the Powerblade are found. 5 units are possible with 7U per server and 1 per 482.6 mm (19") distributor. The individual 482.6 mm (19") distributors are connected to the rising main with drip-free connectors, so that the system is modular and scaleable.

### Configuration:

1 vertical rising main with 5 taps,  
1 482.6 mm (19") cooling circuit distributor with 10 inlet and return connections,  
1 connection hose (inlet and return) from the 482.6 mm (19") cooling circuit distributor to the vertical rising main,  
1 connection hose (inlet and return) from the vertical rising main to the chiller.

PU	Part No. SK
1	<b>3301.280</b>



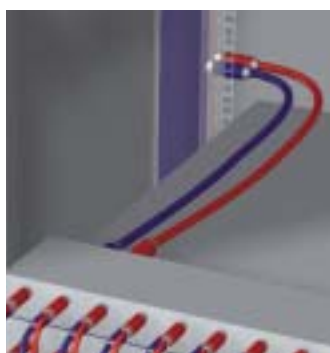
### Also required:

Chiller system, see page 50 onwards.

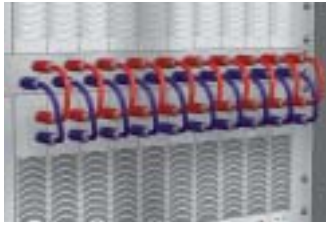


### Accessories:

482.6 mm (19") distributor, distributor accessories.







### Cooling circuit manifold 19"

For installation in the 482.6 mm (19") level with drip-free connections for 10 servers and a main connection to the vertical rising main; 0.5 m (19.7") hose in each case for the inlet and return.

PU	Part No. SK
1	3301.270



#### Accessories:

Manifold accessories.

### Manifold accessories

Description	PU	Part No. SK
Heat sink	1	3301.000
Connector for heat sink	6 mm (0.23")	2
	4 mm (0.15")	2
Retaining clamps	Athlon	1
	Opteron	1
	Xeon	1
	P 4	1
Connection system for hose (sold by the meter)	4 mm (0.15")	1
	6 mm (0.23")	1
Screw-in coupling G 1/8" with seal	10	3301.090
Screw-in connector G 1/8" with seal	10	3301.130
Connector sleeve, 6 mm (0.23")	10	3301.160
Connector grommet, 6 mm (0.23")	10	3301.170
Straight screw-in connector G 1/8", 6 mm (0.23")	10	3301.180
Sealing plug, 6 mm (0.23")	10	3301.190
Y-adaptor, 6 to 2 x 4 mm (0.15")	10	3301.700
Water distribution: 2 x rising main 24U for TS8, vent valve, screw-in connector 1/2", screw-in coupling 1/2"	1	3301.710
Water distribution: 2 x rising main 42U for TS8, vent valve, screw-in connector 1/2", screw-in coupling 1/2"	1	3301.720
Water infeed: 2 x connector grommet 1/2", 2 x connector sleeve 1/2", hose 1/2" (10 m (394")), non-return valve 1/2", dirt trap (with 2 x 1/2" connector sleeve), screw-in connector 1/2" (on the air conditioner), screw-in coupling 1/2" (on the air conditioner), 6 x hose clamps 1/2"	1	3301.730
Monitoring at the connection to the CMC: Temperature sensor + clamping screw fastening	1	3301.740
Accessories/work materials	Hose cutter	1
	Thermally conductive paste	1
	Teflon sealing tape	1
	Sealing plug 1/4"	1

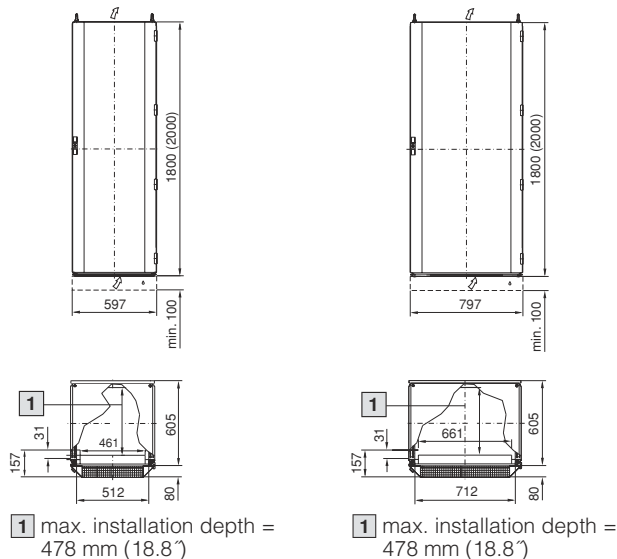


### 4.1 Climate controlled enclosures

Single-door, useful cooling capacity 1100/1500 W (3756/5123 BTU)

1100 W (3756 BTU)

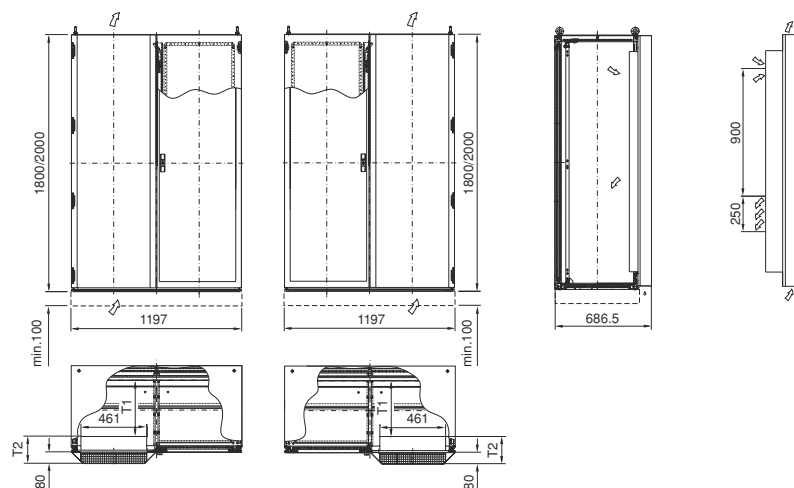
1500 W (5123 BTU)



Two-door, useful cooling capacity 2000/2500 W (6830/8538 BTU)

Device position  
left

Device position  
right



	2000 W (6830 BTU)	2500 W (8538 BTU)
D (T1) max.	445 (17.5)	415 (16.3)
D (T2)	190 (7.5)	220 (8.7)



Climate control doors

4.1 Climate control doors

For installing in 600 mm (23.6") wide TS8 modular enclosures, useful cooling capacity 1100/1500 W (3756/5123 BTU)

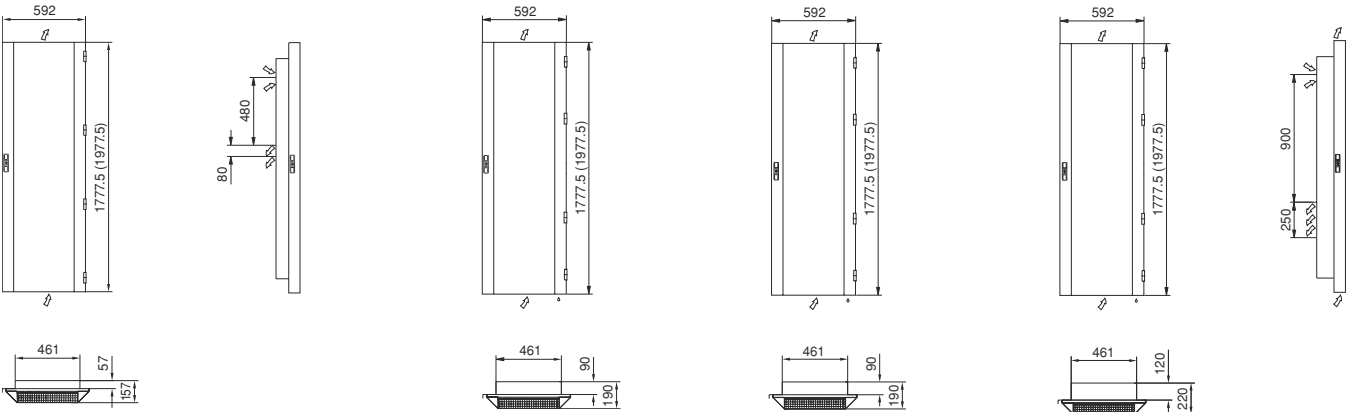
For installing in 600 mm (23.6") wide TS8 modular enclosures, useful cooling capacity 2000/2500 W (6830/8538 BTU)

1100 W (3756 BTU)

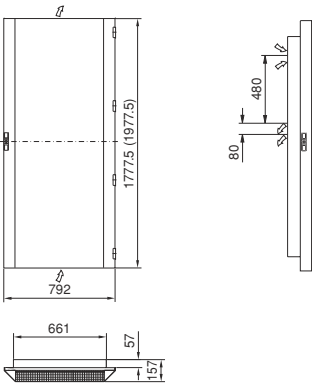
1500 W (5123 BTU)

2000 W (6830 BTU)

2500 W (8538 BTU)



For installing in 800 mm (31.5") wide TS8 modular enclosures, useful cooling capacity 1500 W (5123 BTU)



For installing in 1200 mm (47.2") wide TS8 modular enclosures, useful cooling capacity 1100/1500 W (3756/5123 BTU)

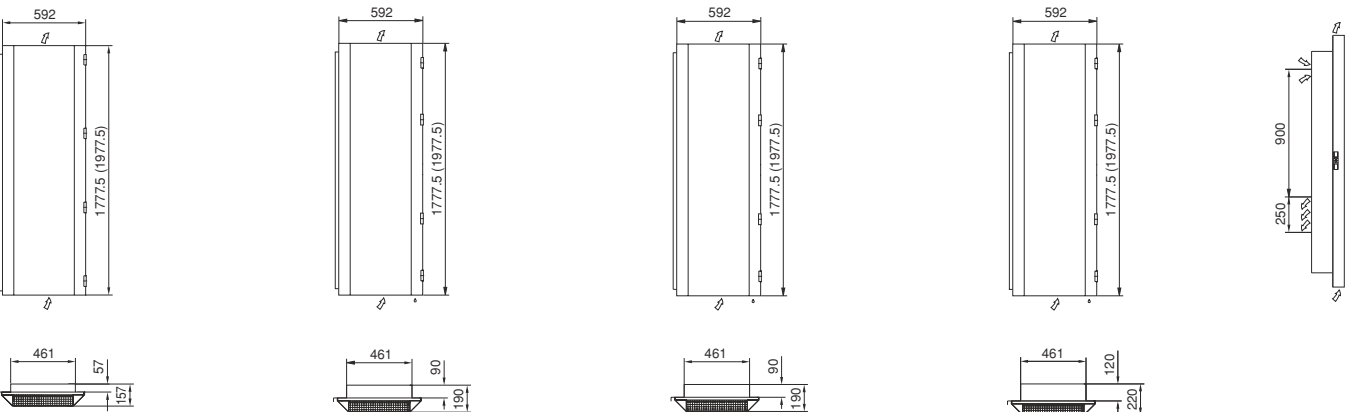
For installing in 1200 mm (47.2") wide TS8 modular enclosures, useful cooling capacity 2000/2500 W (6830/8538 BTU)

1100 W (3756 BTU)

1500 W (5123 BTU)

2000 W (6830 BTU)

2500 W (8538 BTU)

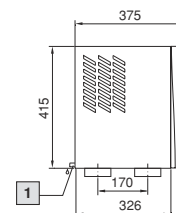
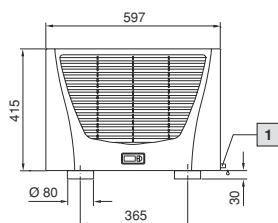
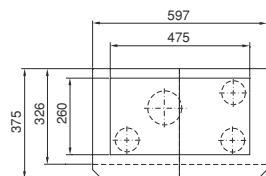




### 4.1 Roof-mounted air conditioners

Useful cooling capacity 500/750 W (1708/2561 BTU)

Mounting cutout



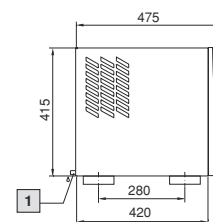
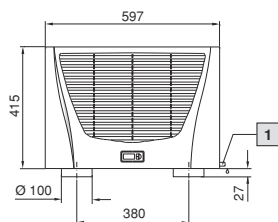
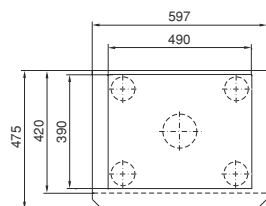
1 Condensate discharge 1/2", flexible

Useful cooling capacity 1000 W (3415 BTU)

Useful cooling capacity 1100 W (3756 BTU)

Useful cooling capacity 1500/2000 W (5123/6830 BTU)

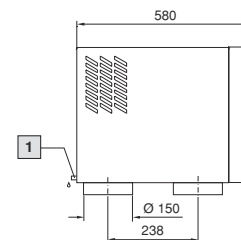
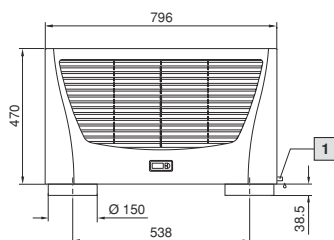
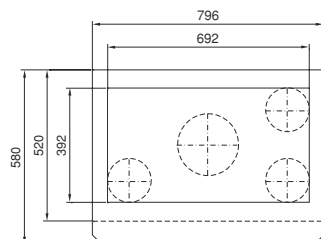
Mounting cutout



1 Condensate discharge 1/2", flexible

Useful cooling capacity 3000/4000 W (10,246/13,661 BTU)

Mounting cutout



1 Condensate discharge 1/2", flexible

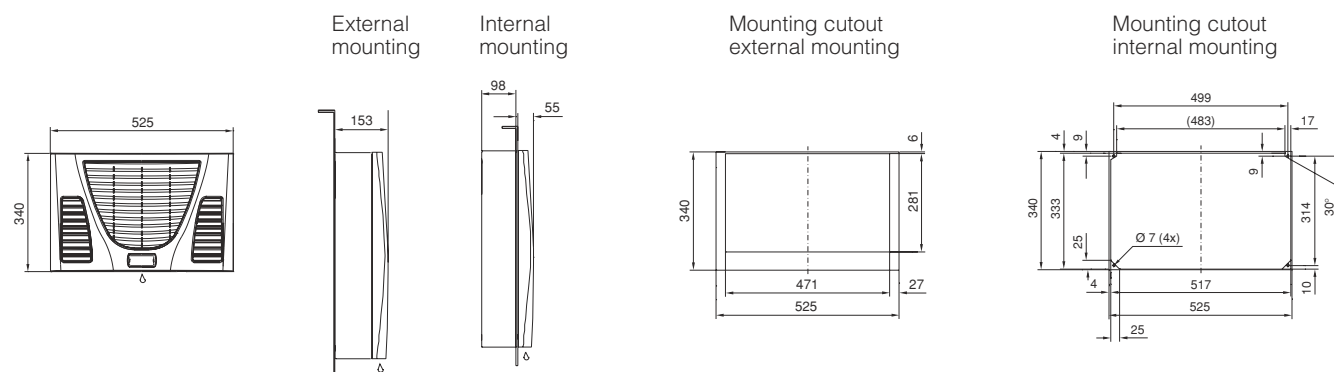


# Climate Control

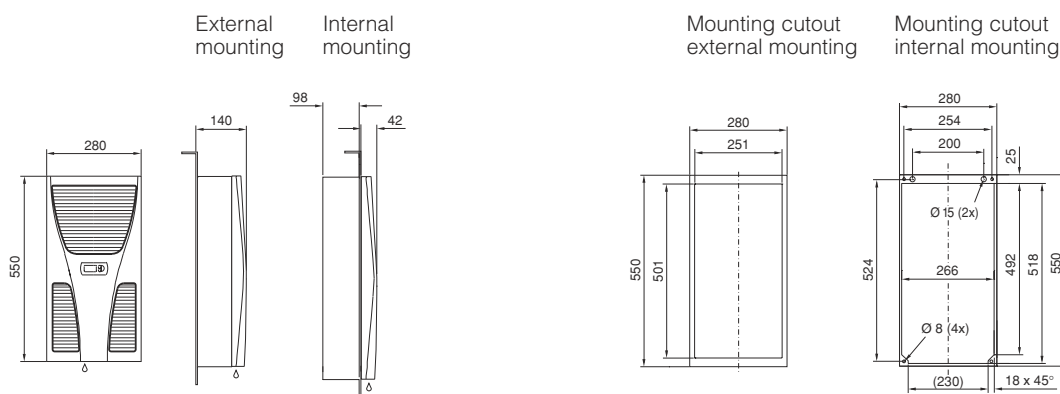
## Wall-mounted air conditioners

### 4.1 Wall-mounted air conditioners

Mini in horizontal format, useful cooling capacity 300 W (1025 BTU)

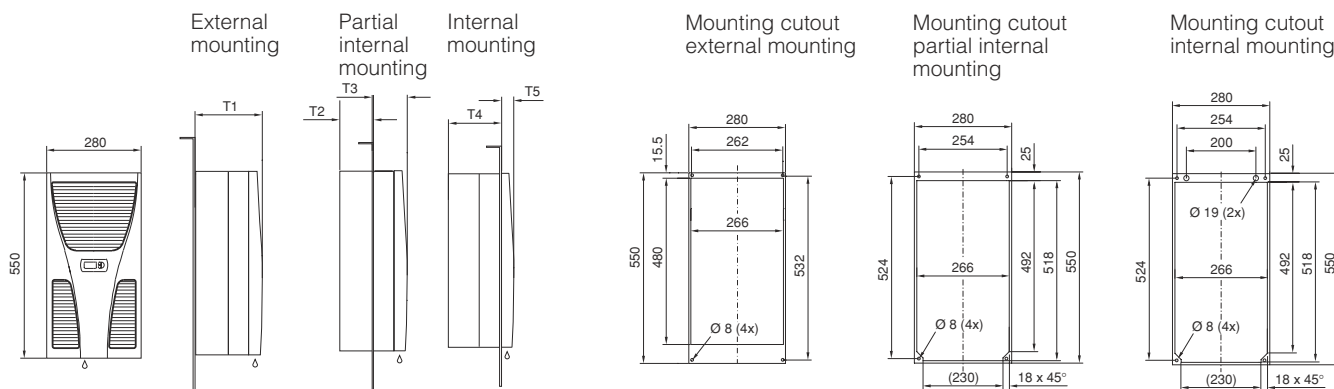


Useful cooling capacity 300 W (1025 BTU)



Useful cooling capacity 500 W (1708 BTU)

Useful cooling capacity 750 W (2561 BTU)

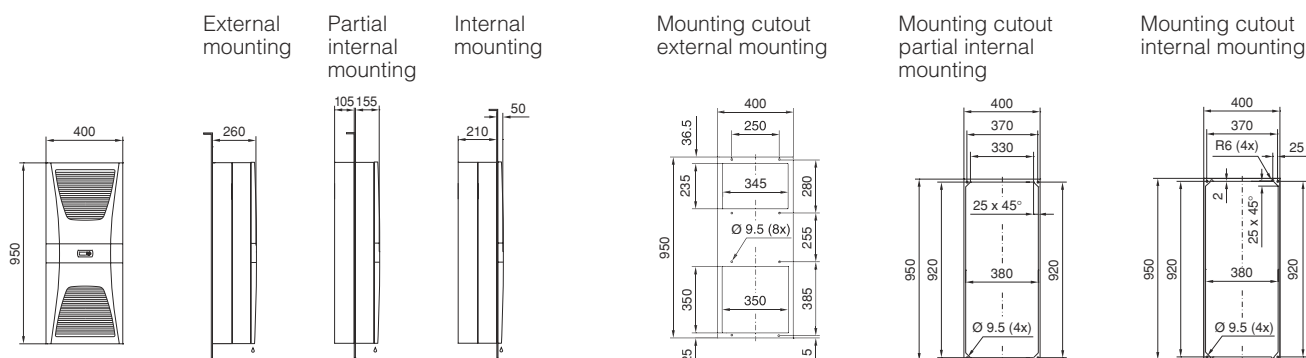


	D (T1)	D (T2)	D (T3)	D (T4)	D (T5)
500 W (1708 BTU)	200 (7.9)	100 (3.9)	100 (3.9)	158 (6.2)	42 (1.7)
750 W (2561 BTU)	280 (11.0)	125 (4.9)	155 (6.1)	235 (9.3)	45 (1.8)

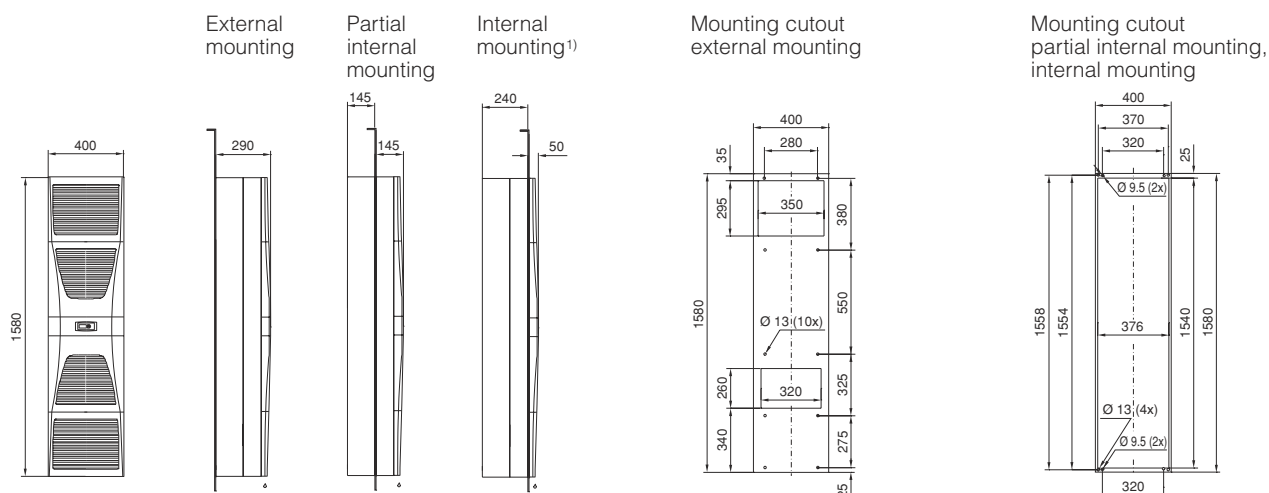


### 4.1 Wall-mounted air conditioners

Useful cooling capacity 1500/2000 W (5123/6830 BTU)

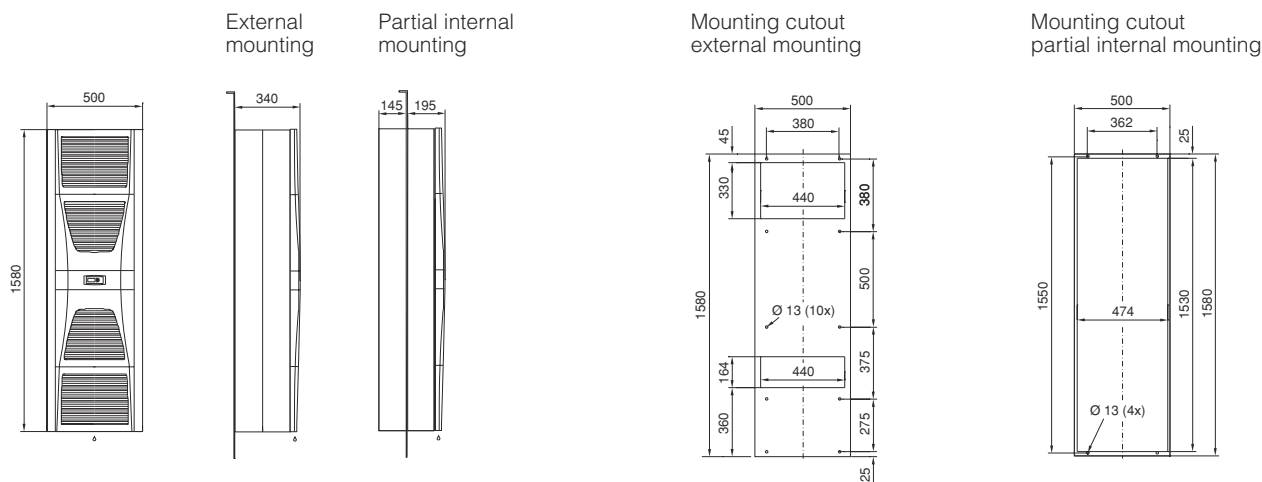


Useful cooling capacity 1500/2000 W (5123/6830 BTU)



<sup>1)</sup> For installation in 600 mm (23.6") wide doors, move the mounting cutout from the center of the door to the hinged side by at least 10 mm (0.4").

Useful cooling capacity 4000 W (13,661 BTU)

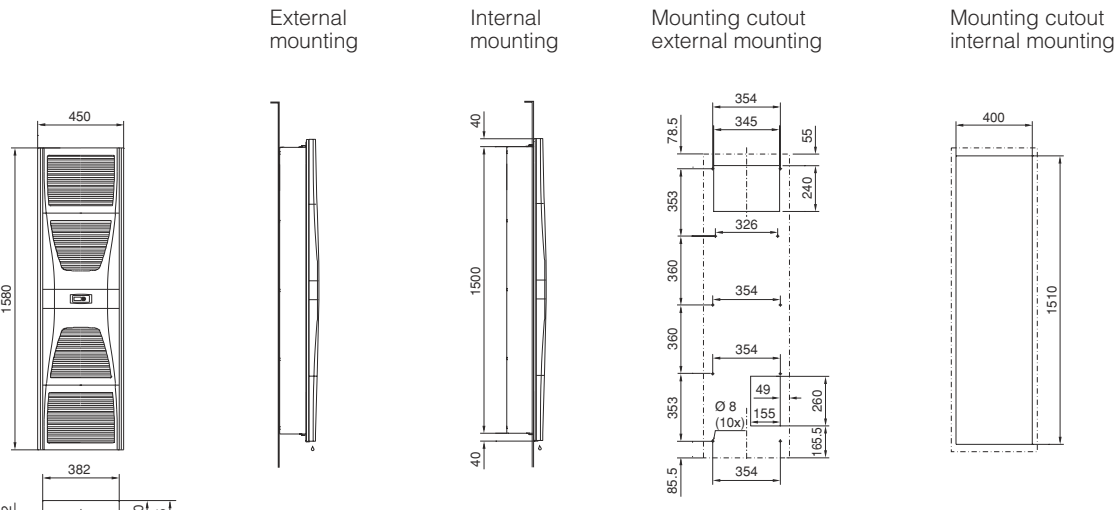




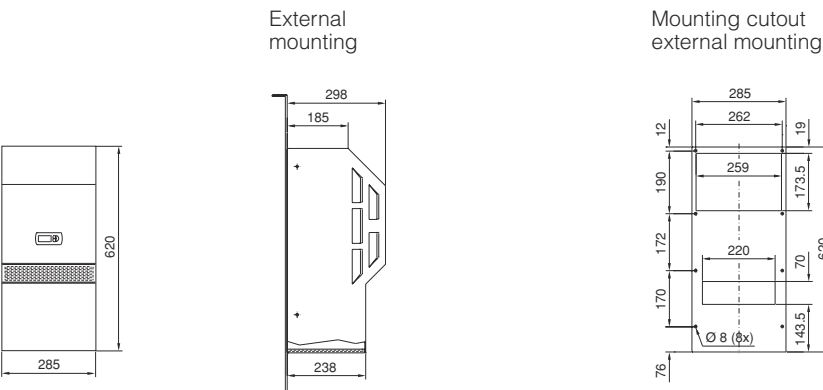
Wall-mounted air conditioners

4.1 Wall-mounted air conditioners

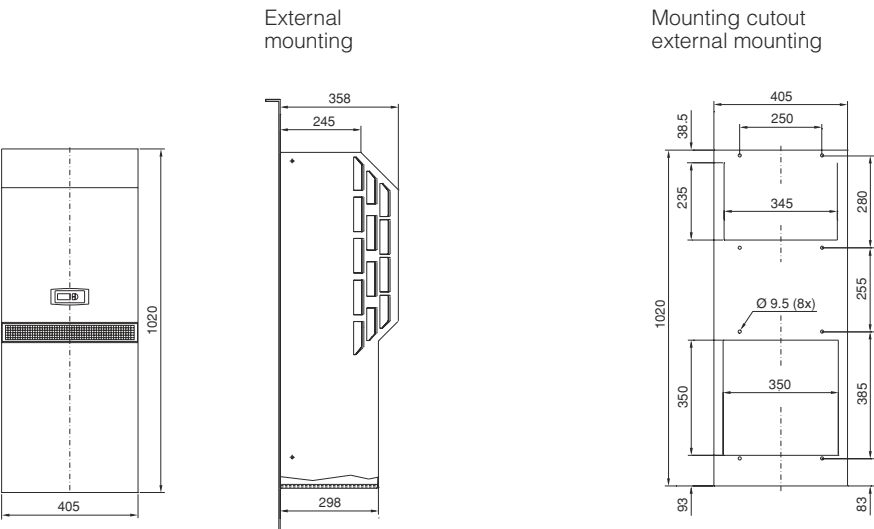
Useful cooling capacity 1500 W (5123 BTU)  
(SK 3366.XXX and SK 3377.XXX)



Design NEMA 4X, useful cooling capacity 500 W (1708 BTU)



Design NEMA 4X, useful cooling capacity 1000/1500 W (3415/5123 BTU)

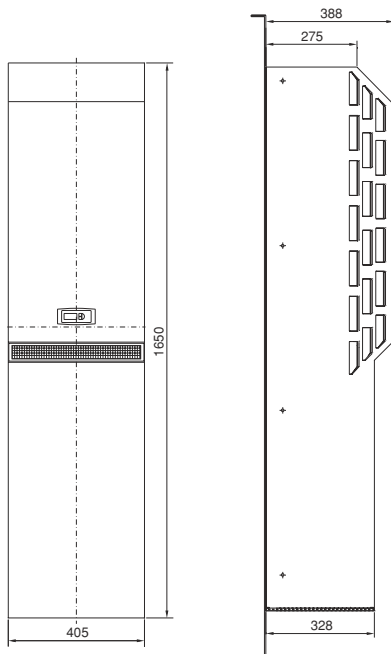




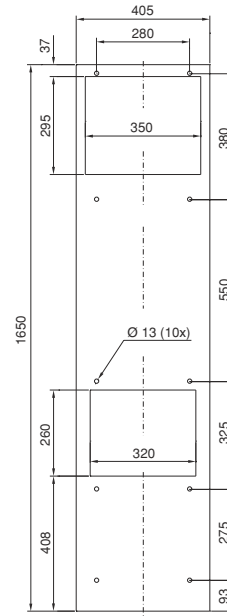
### 4.1 Wall-mounted air conditioners

Design NEMA 4X, useful cooling capacity 2000/2500 W (6830/8538 BTU)

External mounting



Mounting cutout  
external mounting





# Climate Control

## Chillers

### 4.2 Options for chillers

	Pressure-sealed system	Open system with tank	Designed as a once-through cooler without tank	Hot gas bypass control in the cooling circuit	More powerful pump(s)	Heater in the tank (1000 W)	Water level switch	Flow monitor	Water filter/oil filter	Water-cooled condenser	Upstream pipework, free from non-ferrous metals	Automatic tank filling	Fault signal with individual messages	Ambient temperature control	Automatic bypass	Manual bypass	Harting connector	Outdoor siting	Special spray finish	Special voltage	Metal filter mat	Castors	Refrigerant R134a	Double pump unit	Filter mat monitoring	Base tray	Tank (stainless steel 1.4301)	Additional medium connections	
Chillers mini and mini for wall-mounting																													
SK 3318.600	■	-	■	-	□	-	-	■	-	□	□	-	-	□	-	□	□	□	□	□	□	□	■	-	■	-	-	-	
SK 3318.610	-	■	-	-	□	-	-	■	-	□	□	-	-	□	-	□	□	□	□	□	□	□	■	-	■	-	-	-	
SK 3319.600	■	-	■	-	□	-	-	■	-	□	□	-	-	□	-	□	□	□	□	□	□	□	■	-	■	-	-	-	
SK 3319.610	-	■	-	-	□	-	-	■	-	□	□	-	-	□	-	□	□	□	□	□	□	□	■	-	■	-	-	-	
SK 3320.600	-	■	-	□	□	□	□	■	-	□	□	-	-	□	□	□	□	□	□	□	□	□	■	-	■	-	■	-	
SK 3334.600	-	■	-	□	□	□	□	■	-	□	□	-	-	□	□	□	□	□	□	□	□	□	■	-	■	-	■	-	
SK 3360.100	-	■	-	□	□	-	□	■	-	□	□	-	-	□	-	□	□	-	□	□	□	-	■	-	■	-	-	-	
SK 3360.250	-	■	-	□	□	-	□	■	-	□	□	-	-	□	-	□	□	-	□	□	□	-	■	-	■	-	-	-	
SK 3360.400	-	■	-	□	□	-	□	■	-	□	□	-	-	□	-	□	□	-	□	□	□	-	■	-	■	-	-	-	
Chillers freestanding and industrial enclosure																													
SK 3336.100	-	■	□	□	□	□	■	□	□	□	□	□	□	□	□	□	□	□	□	□	□	□	■	-	-	-	■	□	
SK 3336.200	-	■	□	□	□	□	■	□	□	□	□	□	□	□	□	□	□	□	□	□	□	□	■	-	-	-	■	□	
SK 3336.300	-	■	□	□	□	□	■	□	□	□	□	□	□	□	□	□	□	□	□	□	□	□	■	-	-	-	■	□	
SK 3336.500	-	■	□	□	□	□	■	□	□	□	□	□	□	□	□	□	□	□	□	□	□	□	■	-	-	-	■	□	
SK 3336.600	-	■	□	□	□	□	■	□	□	□	□	□	□	□	□	□	□	□	□	□	□	□	■	-	-	-	■	□	
SK 3336.650	-	■	□	□	□	□	■	□	□	□	□	□	□	□	□	□	□	□	□	□	□	□	■	-	-	-	■	□	
SK 3336.700	-	■	□	□	□	□	□	■	□	□	□	□	□	□	□	□	□	□	□	□	□	□	-	-	-	-	■	□	
SK 3336.710	-	■	□	□	□	□	□	■	□	□	□	□	□	□	□	□	□	□	□	□	□	□	-	-	-	-	■	□	
SK 3336.720	-	■	□	□	□	□	□	■	□	□	□	□	□	□	□	□	□	□	□	□	□	□	-	-	-	-	■	□	
SK 3336.730	-	■	□	□	□	□	□	■	□	□	□	□	□	□	□	□	□	□	□	□	□	□	-	-	-	-	■	□	
SK 3336.740	-	■	□	□	□	□	□	■	□	□	□	□	□	□	□	□	□	□	□	□	□	□	-	-	-	-	■	□	
SK 3336.750	-	■	□	□	□	□	□	■	□	□	□	□	□	□	□	□	□	□	□	□	□	□	-	-	-	-	■	□	
SK 3339.100	-	■	□	□	□	□	□	■	□	□	□	□	□	□	□	□	□	□	□	□	□	□	-	-	-	-	■	□	
SK 3339.200	-	■	□	□	□	□	□	■	□	□	□	□	□	□	□	□	□	□	□	□	□	□	-	-	-	-	■	□	
SK 3339.300	■	-	■	□	□	□	□	■	□	□	□	□	□	□	□	□	□	□	□	□	□	□	-	-	-	-	-	□	
SK 3339.400	■	-	■	□	□	□	□	■	□	□	□	□	□	□	□	□	□	□	□	□	□	□	-	-	-	-	-	□	
SK 3339.500	■	-	■	□	□	□	□	■	□	□	□	□	□	□	□	□	□	□	□	□	□	□	-	-	-	-	-	□	
Chillers freestanding enclosure for oil																													
SK 3337.200	■	□	■	□	□	□	-	□	□	-	-	-	□	□	-	-	□	□	□	□	□	□	-	-	-	-	□	□	
SK 3337.300	■	□	■	□	□	□	-	□	□	-	-	-	□	□	-	-	□	□	□	□	□	□	-	-	-	-	□	□	
SK 3337.500	■	□	■	□	□	□	-	□	□	-	-	-	□	□	-	-	□	□	□	□	□	□	-	-	-	-	□	□	
SK 3337.600	■	□	■	□	□	□	-	□	□	-	-	-	□	□	-	-	□	□	□	□	□	□	-	-	-	-	□	□	
SK 3337.650	■	□	■	□	□	□	-	□	□	-	-	-	□	□	-	-	□	□	□	□	□	□	-	-	-	-	□	□	
SK 3337.700	■	□	■	□	□	□	-	□	□	-	-	-	□	□	-	-	□	□	□	□	□	□	-	-	-	-	□	□	
SK 3337.710	■	□	■	□	□	□	-	□	□	-	-	-	□	□	-	-	□	□	□	□	□	□	-	-	-	-	□	□	
SK 3337.720	■	□	■	□	□	□	-	□	□	-	-	-	□	□	-	-	□	□	□	□	□	□	-	-	-	-	□	□	
SK 3337.730	■	□	■	□	□	□	-	□	□	-	-	-	□	□	-	-	□	□	□	□	□	□	-	-	-	-	□	□	
SK 3337.740	■	□	■	□	□	□	-	□	□	-	-	-	□	□	-	-	□	□	□	□	□	□	-	-	-	-	□	□	
SK 3337.750	■	□	■	□	□	□	-	□	□	-	-	-	□	□	-	-	□	□	□	□	□	□	-	-	-	-	□	□	
Chillers in the TS8 modular system																													
SK 3335.060	-	■	-	□	□	□	□	□	□	□	□	□	□	□	□	□	□	□	□	□	□	□	□	□	□	□	□	-	
SK 3335.075	-	■	-	□	□	□	□	□	□	□	□	□	□	□	□	□	□	□	□	□	□	□	□	□	□	□	□	-	
SK 3335.100	-	■	-	□	□	□	□	□	□	□	□	□	□	□	□	□	□	□	□	□	□	□	□	□	□	□	□	-	
SK 3335.120	-	■	-	□	□	□	□	□	□	□	□	□	□	□	□	□	□	□	□	□	□	□	□	□	□	□	□	-	
SK 3335.150	-	■	-	□	□	□	□	□	□	□	□	□	□	□	□	□	□	□	□	□	□	□	□	□	□	□	□	-	
SK 3335.200	-	■	-	□	□	□	□	□	□	□	□	□	□	□	□	□	□	□	□	□	□	□	□	□	□	□	□	-	
SK 3335.250	-	■	-	□	□	□	□	□	□	□	□	□	□	□	□	□	□	□	□	□	□	□	□	□	□	□	□	-	

■ Standard  
□ Optional



## 4.2 Options for chillers

	Water-cooled condenser	Radial fan	Hot gas bypass control in the cooling circuit	Harting connector	Special spray finish	Special voltage	Ambient temperature control	Control voltage 24 V DC	Liquid injection valve	Fault signal "Filter mat dirty"	Immersion depth 650 mm (25.6")	Immersion depth 750 mm (29.5")	Immersion depth 850 mm (33.5")	Immersion depth 1000 mm (39.4")
<b>Immersible chillers</b>														
SK 3338.020	□	□	□	□	□	□	□	■	□	□	□	□	□	□
SK 3338.040	□	□	□	□	□	□	□	■	□	□	□	□	□	□
SK 3338.060	□	□	□	□	□	□	□	■	□	□	□	□	□	□
SK 3338.080	□	□	□	□	□	□	□	■	□	□	□	□	□	□
SK 3338.100	□	□	□	□	□	□	□	□	□	□	□	□	□	□
SK 3338.120	□	□	□	□	□	□	□	□	□	□	□	□	□	□
SK 3338.140	□	□	□	□	□	□	□	□	□	□	□	□	□	□
SK 3338.160	□	□	□	□	□	□	□	□	□	□	□	□	□	□
SK 3338.180	□	□	□	□	□	□	□	□	□	□	□	□	□	□
SK 3338.200	□	□	□	□	□	□	□	□	□	□	□	□	□	□
SK 3338.220	□	□	□	□	□	□	□	□	□	□	□	□	□	□
SK 3338.240	□	□	□	□	□	□	□	□	□	□	□	□	□	□
SK 3338.260	□	□	□	□	□	□	□	□	□	□	□	□	□	□
SK 3338.280	□	□	□	□	□	□	□	□	□	□	□	□	□	□
SK 3338.300	□	□	□	□	□	□	□	□	□	□	□	□	□	□
SK 3338.320	□	□	□	□	□	□	□	□	□	□	□	□	□	□
SK 3338.340	□	□	□	□	□	□	□	□	□	□	□	□	□	□
SK 3338.360	□	□	□	□	□	□	□	□	□	□	□	□	□	□
SK 3338.500	□	□	□	□	□	□	□	■	□	□	□	□	□	□
SK 3338.520	□	□	□	□	□	□	□	■	□	□	□	□	□	□
SK 3338.540	□	□	□	□	□	□	□	■	□	□	□	□	□	□
SK 3338.560	□	□	□	□	□	□	□	■	□	□	□	□	□	□
SK 3338.580	□	□	□	□	□	□	□	□	□	□	□	□	□	□
SK 3338.600	□	□	□	□	□	□	□	□	□	□	□	□	□	□
SK 3338.620	□	□	□	□	□	□	□	□	□	□	□	□	□	□
SK 3338.640	□	□	□	□	□	□	□	□	□	□	□	□	□	□
SK 3338.660	□	□	□	□	□	□	□	□	□	□	□	□	□	□
SK 3338.680	□	□	□	□	□	□	□	□	□	□	□	□	□	□
SK 3338.700	□	□	□	□	□	□	□	□	□	□	□	□	□	□
SK 3338.720	□	□	□	□	□	□	□	□	□	□	□	□	□	□
SK 3338.740	□	□	□	□	□	□	□	□	□	□	□	□	□	□
SK 3338.760	□	□	□	□	□	□	□	□	□	□	□	□	□	□
SK 3338.780	□	□	□	□	□	□	□	□	□	□	□	□	□	□
SK 3338.800	□	□	□	□	□	□	□	□	□	□	□	□	□	□
SK 3338.820	□	□	□	□	□	□	□	□	□	□	□	□	□	□
SK 3338.840	□	□	□	□	□	□	□	□	□	□	□	□	□	□

■ Standard  
□ Optional



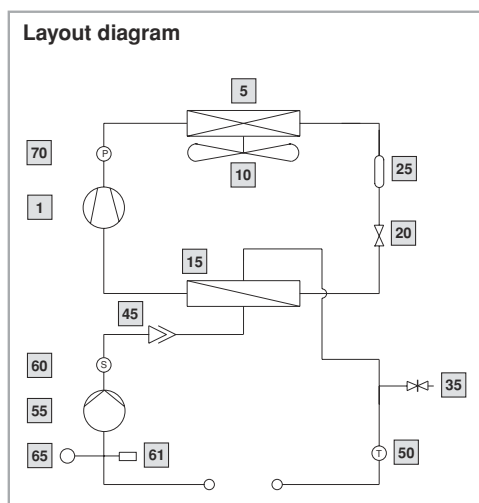
## Chillers

### 4.2 Chillers

Mini, cooling capacity 960/1490 W (3279/5089 BTU)

Key to the adjacent drawing:

- 1 Compressor
- 5 Condenser
- 10 Condenser fan
- 15 Evaporator coil
- 20 Expansion valve
- 25 Filter dryer
- 35 Filling
- 45 Vent valve
- 50 Temperature sensor
- 55 Pump
- 60 Flow monitor
- 61 Overpressure valve
- 65 Pressure relief valve
- 70 High-pressure switch



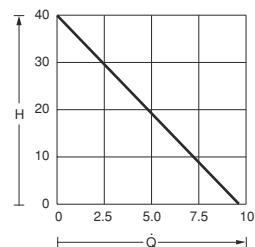
**Note:**

With a lockable external cooling cycle, a bypass (overpressure valve) should be provided in the external water pipes.

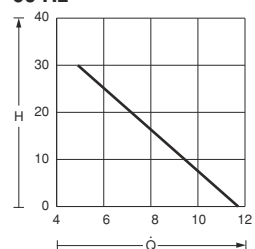
**Characteristic curves of pump**

Part No. SK  
3318.600/3318.610/  
3319.600/3319.610

**50 Hz**



**60 Hz**

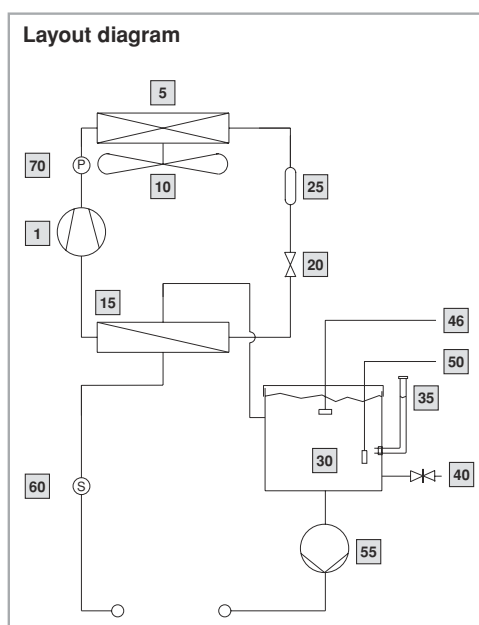


H = Delivery head H [m]  
Q = Delivery flow Q [l/min]

Mini, cooling capacity 3000/4500 W (10,246/13,661 BTU)

Key to the adjacent drawing:

- 1 Compressor
- 5 Condenser
- 10 Condenser fan
- 15 Evaporator coil
- 20 Expansion valve
- 25 Filter dryer
- 30 Tank
- 35 Filling
- 40 Tank drain
- 46 Water level switch, optional
- 50 Temperature sensor
- 55 Pump
- 60 Flow monitor
- 70 High-pressure switch



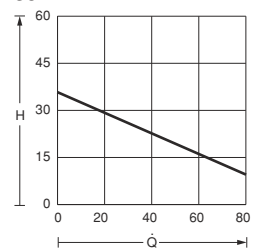
**Note:**

With a lockable external cooling cycle, a bypass (overpressure valve) should be provided in the external water pipes.

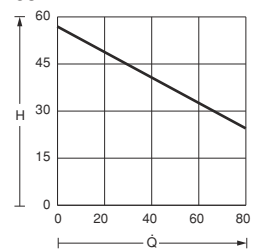
**Characteristic curves of pump**

Part No. SK  
3320.600/3334.600

**50 Hz**



**60 Hz**



H = Delivery head H [m]  
Q = Delivery flow Q [l/min]

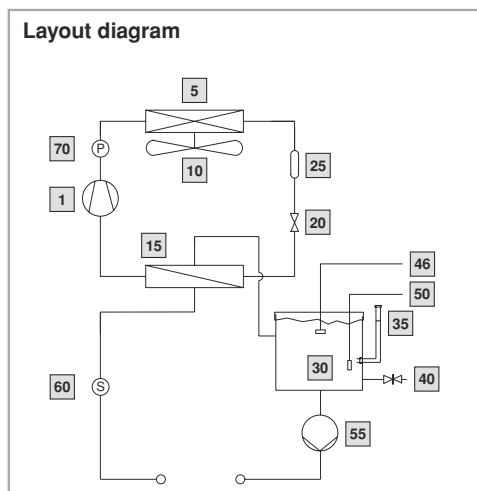


### 4.2 Chillers

**Mini, for wall-mounting, cooling capacity 1000/2500/4000 W  
(3415/8538/13,661 BTU)**

**Key to the adjacent drawing:**

- 1** Compressor
- 5** Condenser
- 10** Condenser fan
- 15** Evaporator coil
- 20** Expansion valve
- 25** Filter dryer
- 30** Tank
- 35** Filling
- 40** Tank drain
- 46** Water level switch, optional
- 50** Temperature sensor
- 55** Pump
- 60** Flow monitor
- 70** High-pressure switch



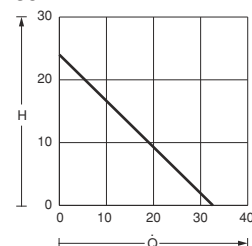
**Note:**

With a lockable external cooling cycle, a bypass (overpressure valve) should be provided in the external water pipes.

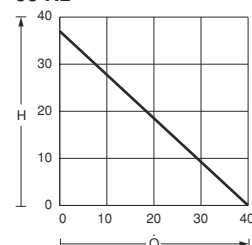
**Characteristic curves of pump**

Part No. SK  
3360.100/3360.250/  
3360.400

**50 Hz**



**60 Hz**

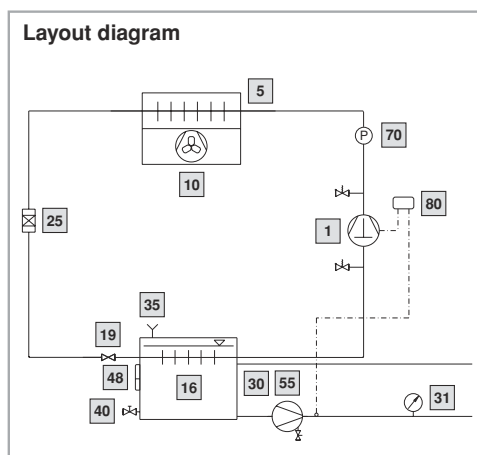


H = Delivery head H [m]  
Q = Delivery flow Q [l/min]

**Freestanding enclosure, cooling capacity 2100 to 7700 W  
(7172 to 26,267 BTU)**

**Key to the adjacent drawing:**

- 1** Compressor
- 5** Condenser
- 10** Condenser fan
- 16** Multi-coil vaporizer
- 19** Capillary tube/expansion valve<sup>1)</sup>
- 25** Filter dryer
- 30** Tank
- 31** Pressure gauge
- 35** Filling
- 40** Tank drain
- 48** Level indicator
- 55** Pump
- 70** High-pressure switch
- 80** Thermostat



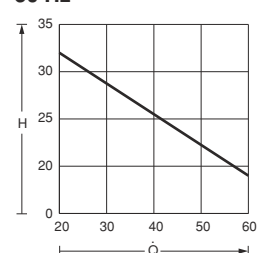
**Note:**

With a lockable external cooling cycle, a bypass (overpressure valve) should be provided in the external water pipes.

**Characteristic curves of pump**

Part No. SK  
3336.100/3336.200/3336.300/  
3336.500/3336.600/3336.650

**50 Hz**



H = Delivery head H [m]  
Q = Delivery flow Q [l/min]

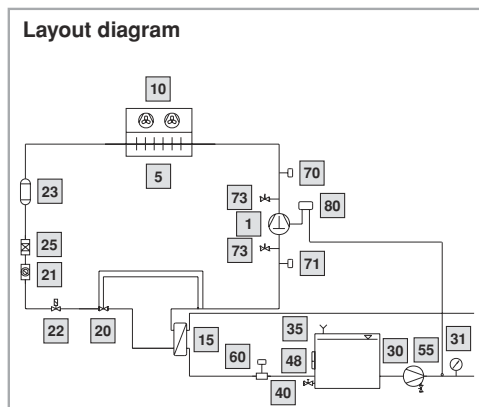


### 4.2 Chillers

Freestanding enclosure, cooling capacity 10000 to 25200 W (34,152 to 86,063 BTU)

Key to the adjacent drawing:

- 1 Compressor
- 5 Condenser
- 10 Condenser fan
- 15 Evaporator coil
- 20 Expansion valve
- 21 Inspection glass
- 22 Magnetic valve
- 23 Liquid collector
- 25 Filter dryer
- 30 Tank
- 31 Pressure gauge
- 35 Filling
- 40 Tank drain
- 48 Level indicator
- 55 Pump
- 60 Flow monitor
- 70 High-pressure switch
- 71 Low-pressure switch
- 73 Shut-off valve
- 80 Thermostat



**Note:**

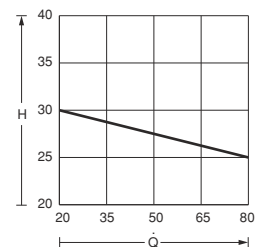
With a lockable external cooling cycle, a bypass (overpressure valve) should be provided in the external water pipes.

**Characteristic curves of pump**

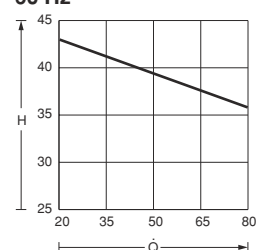
Part No. SK

3336.700/3336.710/3336.720

**50 Hz**



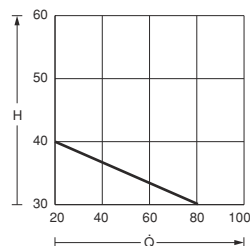
**60 Hz**



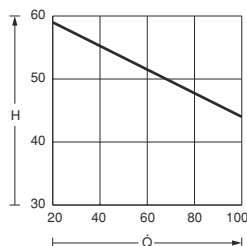
Part No. SK

3336.730/3336.740/3336.750

**50 Hz**



**60 Hz**



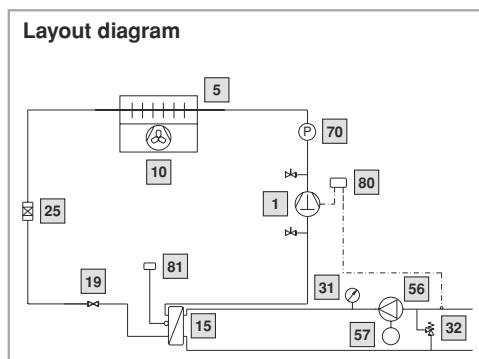
H = Delivery head H [m]  
Q = Delivery flow Q [l/min]

Freestanding enclosure for oil, cooling capacity 2550 to 7900 W (8709 to 26,980 BTU)

Key to the adjacent drawing:

- 1 Compressor
- 5 Condenser
- 10 Condenser fan
- 15 Evaporator coil
- 19 Capillary tube/expansion valve<sup>1)</sup>
- 25 Filter dryer
- 31 Pressure gauge
- 32 Automatic bypass valve
- 56 Oil pump
- 57 Motor for oil pump
- 70 High-pressure switch
- 80 Thermostat
- 81 Anti-frost thermostat

<sup>1)</sup> from SK 3337.500





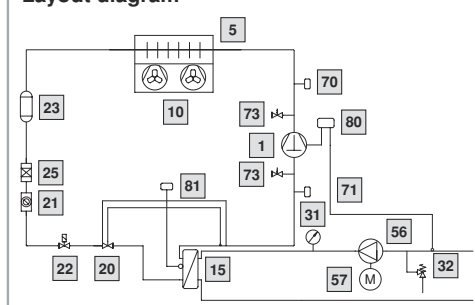
### 4.2 Chillers

Freestanding enclosure for oil, cooling capacity 10600 to 26100 W (36,201 to 89,136 BTU)

Key to the adjacent drawing:

- |                     |                           |
|---------------------|---------------------------|
| 1 Compressor        | 31 Pressure gauge         |
| 5 Condenser         | 32 Automatic bypass valve |
| 10 Condenser fan    | 56 Oil pump               |
| 15 Evaporator coil  | 57 Motor for oil pump     |
| 20 Expansion valve  | 70 High-pressure switch   |
| 21 Inspection glass | 71 Low-pressure switch    |
| 22 Magnetic valve   | 73 Shut-off valve         |
| 23 Liquid collector | 80 Thermostat             |
| 25 Filter dryer     | 81 Anti-frost thermostat  |

Layout diagram

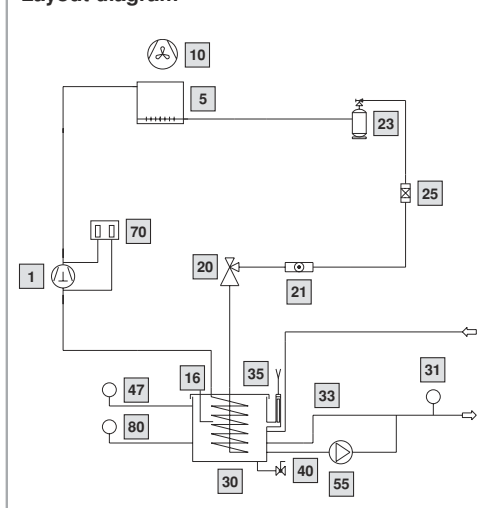


In TS8 modular enclosure system, cooling capacity 6000/7500 W (20,491/25,614 BTU)

Key to the adjacent drawing:

- |                         |
|-------------------------|
| 1 Compressor            |
| 5 Condenser             |
| 10 Condenser fan        |
| 16 Multi-coil vaporizer |
| 20 Expansion valve      |
| 21 Inspection glass     |
| 23 Liquid collector     |
| 25 Filter dryer         |
| 30 Tank                 |
| 31 Pressure gauge       |
| 33 Fixed pump bypass    |
| 35 Filling              |
| 40 Tank drain           |
| 47 Level switch         |
| 55 Pump                 |
| 70 High-pressure switch |
| 80 Thermostat           |

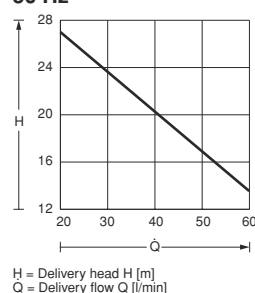
Layout diagram



Characteristic curves of pump

Part No. SK  
3335.060/3335.075

50 Hz



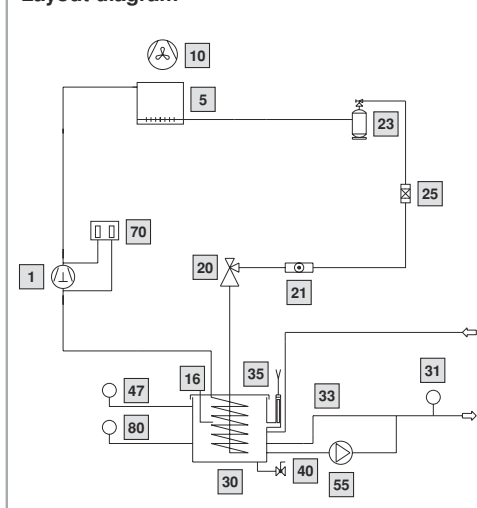
H = Delivery head H [m]  
Q = Delivery flow Q [l/min]

In TS8 modular enclosure system, cooling capacity 10000 to 25000 W (34,152 to 85,379 BTU)

Key to the adjacent drawing:

- |                         |
|-------------------------|
| 1 Compressor            |
| 5 Condenser             |
| 10 Condenser fan        |
| 16 Multi-coil vaporizer |
| 20 Expansion valve      |
| 21 Inspection glass     |
| 23 Liquid collector     |
| 25 Filter dryer         |
| 30 Tank                 |
| 31 Pressure gauge       |
| 33 Fixed pump bypass    |
| 35 Filling              |
| 40 Tank drain           |
| 47 Level switch         |
| 55 Pump                 |
| 70 High-pressure switch |
| 80 Thermostat           |

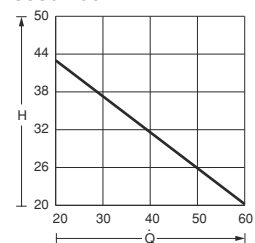
Layout diagram



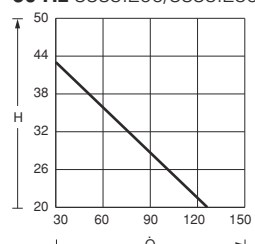
Characteristic curves of pump

Part No. SK

50 Hz 3335.100/3335.120/  
3335.150



50 Hz 3335.200/3335.250



H = Delivery head H [m]  
Q = Delivery flow Q [l/min]



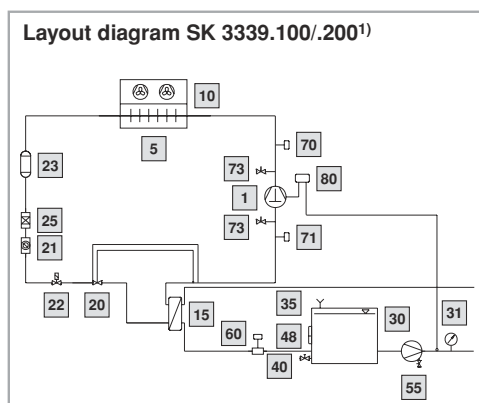
### 4.2 Chillers

In industrial enclosure, cooling capacity 32 kW to 172 kW (109,286 to 587,411 BTU)

Key to the adjacent drawing:

- 1 Compressor
- 5 Condenser
- 10 Condenser fan
- 15 Evaporator coil
- 20 Expansion valve
- 21 Inspection glass
- 22 Magnetic valve
- 23 Liquid collector
- 25 Filter dryer
- 30 Tank
- 31 Pressure gauge
- 35 Filling
- 40 Tank drain
- 48 Level indicator
- 55 Pump
- 60 Flow monitor
- 70 High-pressure switch
- 71 Low-pressure switch
- 73 Shut-off valve
- 80 Thermostat

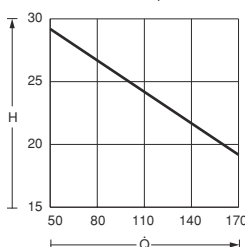
1) Layout diagram SK 3339.300 – .500 available on request.



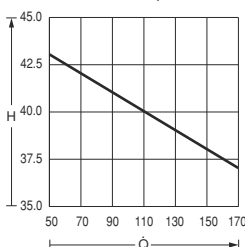
#### Characteristic curves of pump

Part No. SK

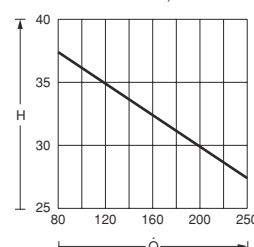
50 Hz 3339.100/3339.200



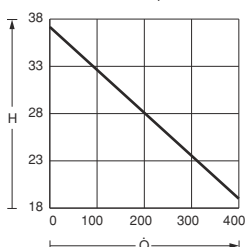
60 Hz 3339.100/3339.200



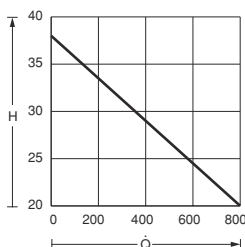
50 Hz 3339.250, 3339.280



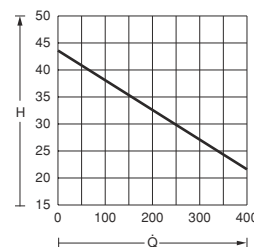
50 Hz 3339.300/3339.400



50 Hz 3339.500



50 Hz 3339.450



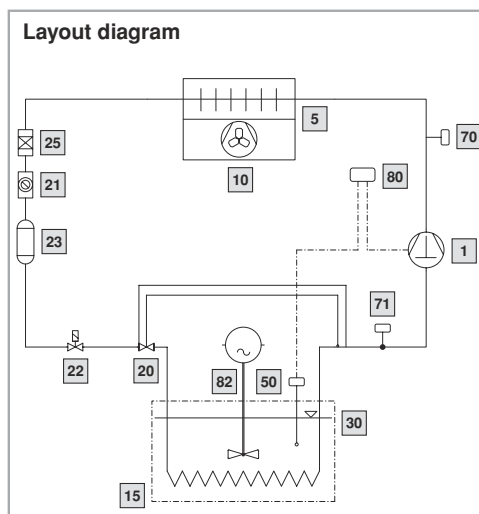
H = Delivery head H [m]  
Q = Delivery flow Q [l/min]

### 4.2 Immersible chillers

Useful cooling capacity 2400 to 77900 W (8196 to 266,042 BTU)

Key to the adjacent drawing:

- 1 Compressor
- 5 Condenser
- 10 Condenser fan
- 15 Evaporator coil
- 20 Expansion valve
- 21 Inspection glass
- 22 Magnetic valve
- 23 Liquid collector
- 25 Filter dryer
- 30 Tank, to be supplied by the customer
- 50 Temperature sensor
- 70 High-pressure switch
- 71 Low-pressure switch
- 80 Thermostat
- 82 Stirrer





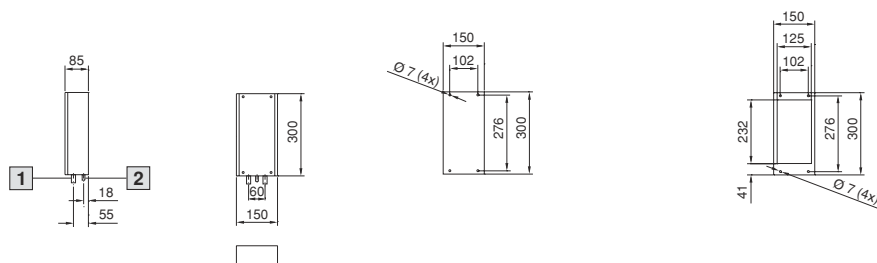
### 4.3 Air/water heat exchanger

Micro, wall-mounted, useful cooling capacity 300 W (1025 BTU)

Mounting holes  
for internal mounting

Mounting cutout  
for external mounting

- 1 Cooling water connection
- 2 Condensate discharge

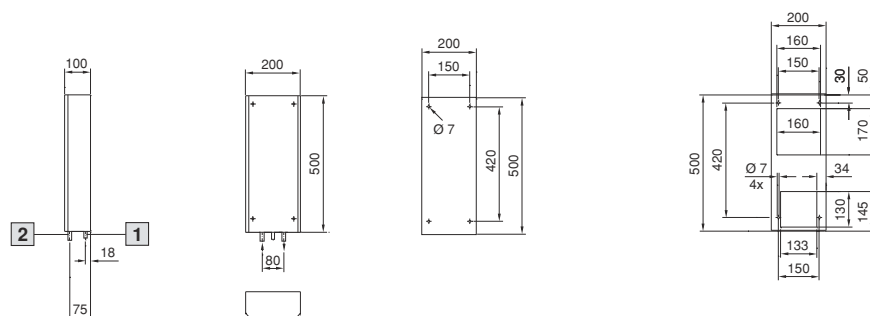


### Wall-mounting, useful cooling capacity 600 W (2049 BTU)

Mounting holes  
for internal mounting

Mounting cutout  
for external mounting

- 1 Condensate discharge 1/2"
- 2 Cooling water connection 1/2"

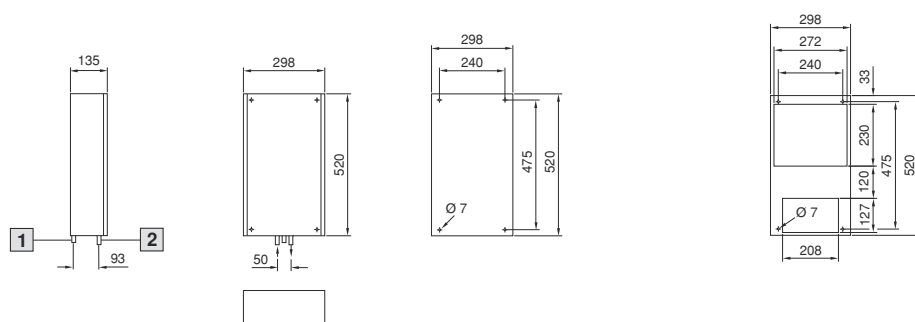


### Wall-mounting, useful cooling capacity 1000 W (3415 BTU)

Mounting holes  
for internal mounting

Mounting cutout  
for external mounting

- 1 Condensate discharge 1/2"
- 2 Cooling water connection 1/2"

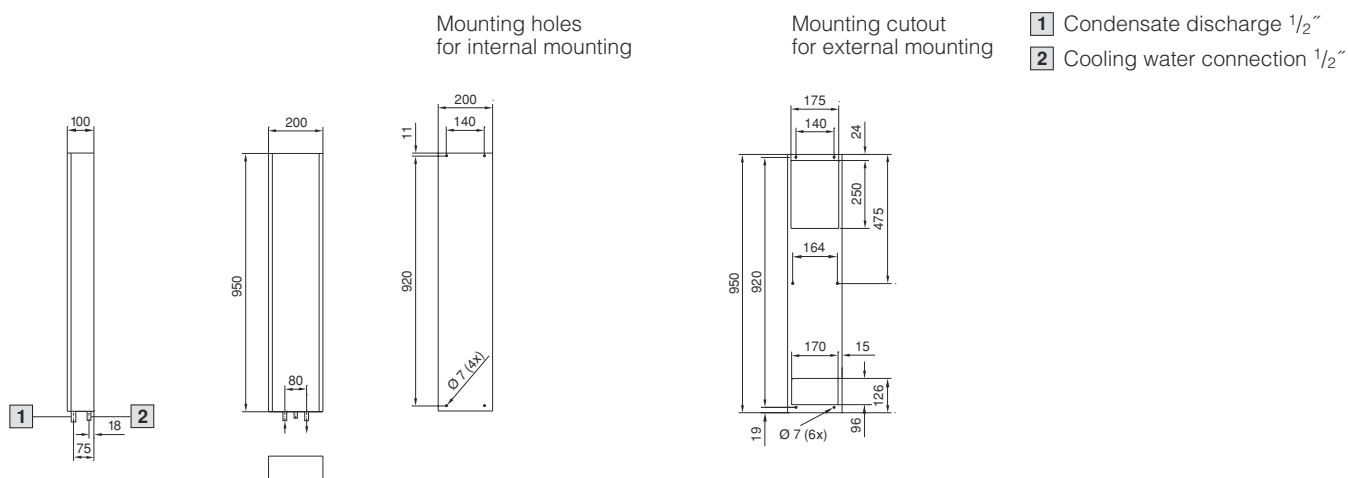




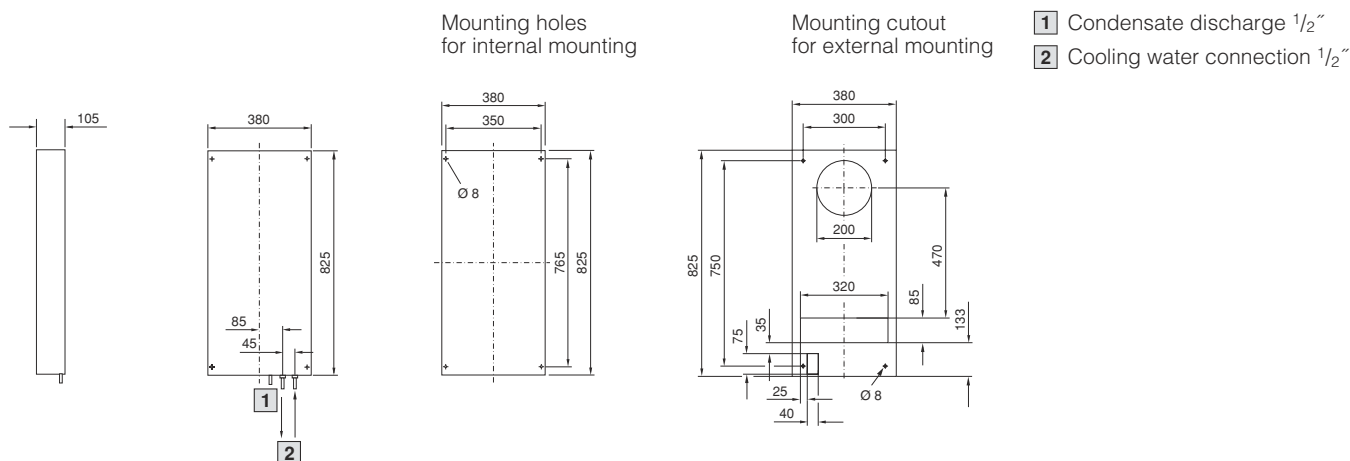
## Air/water heat exchangers

### 4.3 Air/water heat exchanger

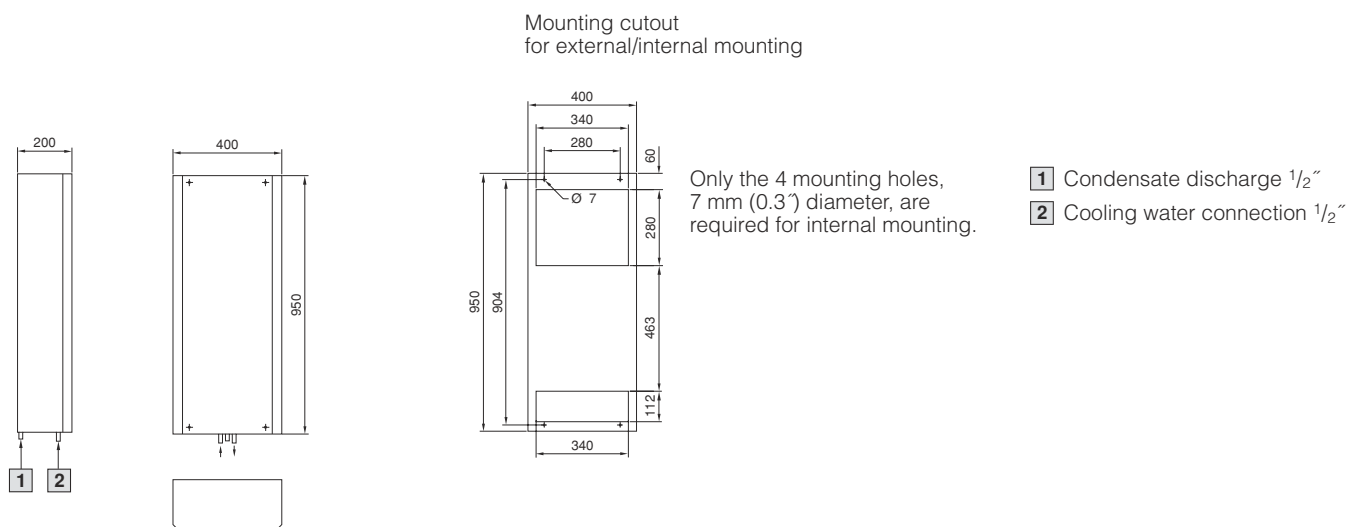
Wall-mounting, useful cooling capacity 1250 W (4269 BTU)



Wall-mounting, useful cooling capacity 1540 W (5259 BTU)



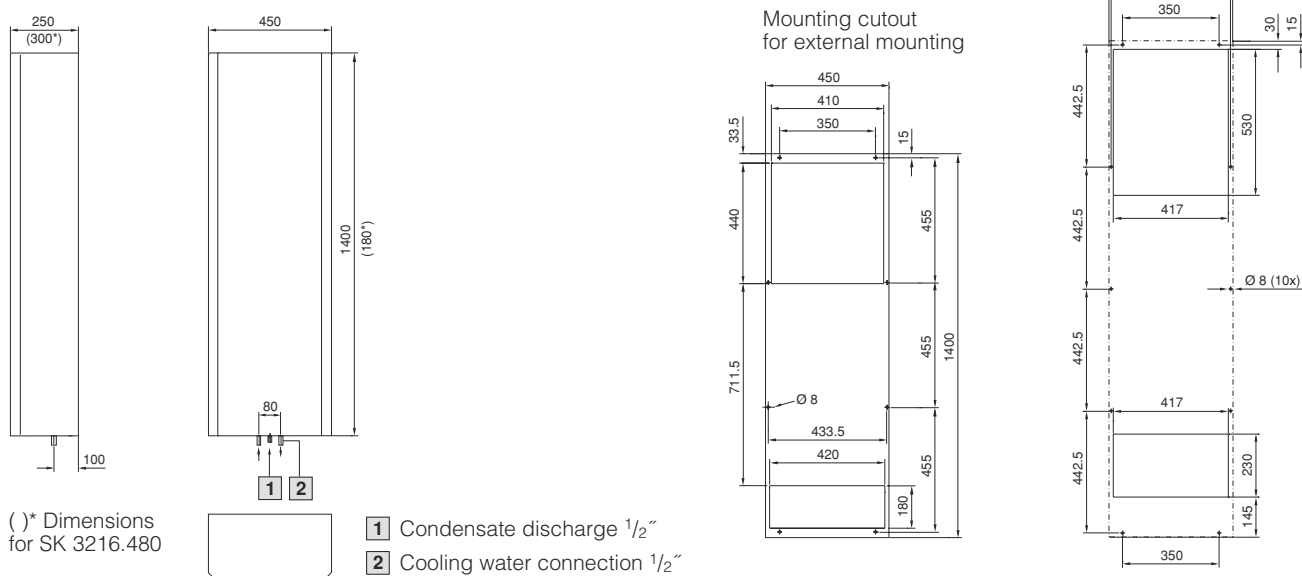
Wall-mounting, useful cooling capacity 2250/3000 W (7684/10,246 BTU)





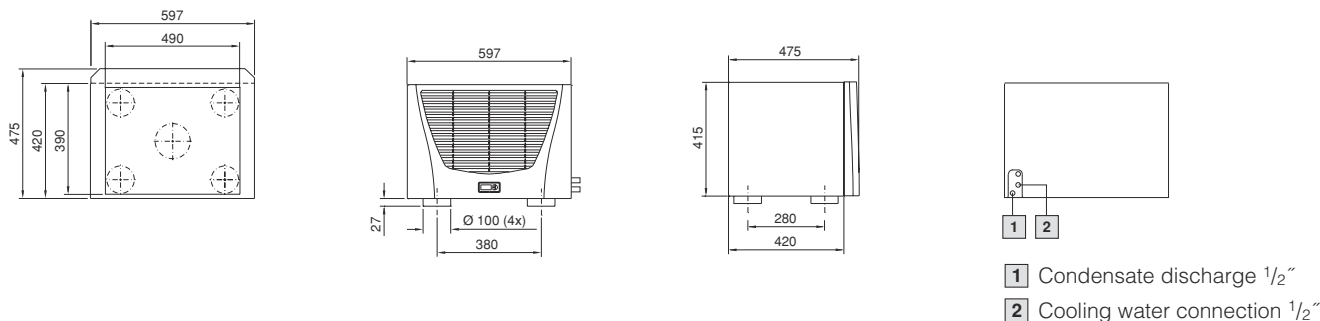
### 4.3 Air/water heat exchangers

Wall-mounting, useful cooling capacity 4500 W (15,368 BTU) and 7000 W (23,906 BTU)



Roof-mounted, useful cooling capacity 2500 W (8538 BTU)

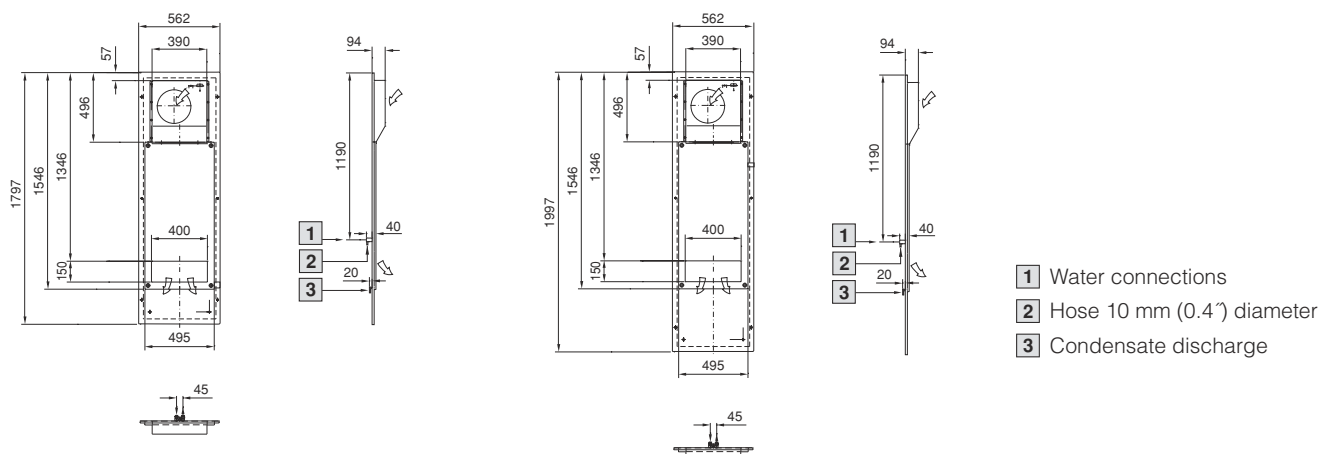
Roof-mounted, useful cooling capacity 4000 W (13,661 BTU)



As a sidewall for 600 mm (23.6") deep TS8 modular enclosures, useful cooling capacity 700 W (2391 BTU)

SK 3316.180

SK 3316.200

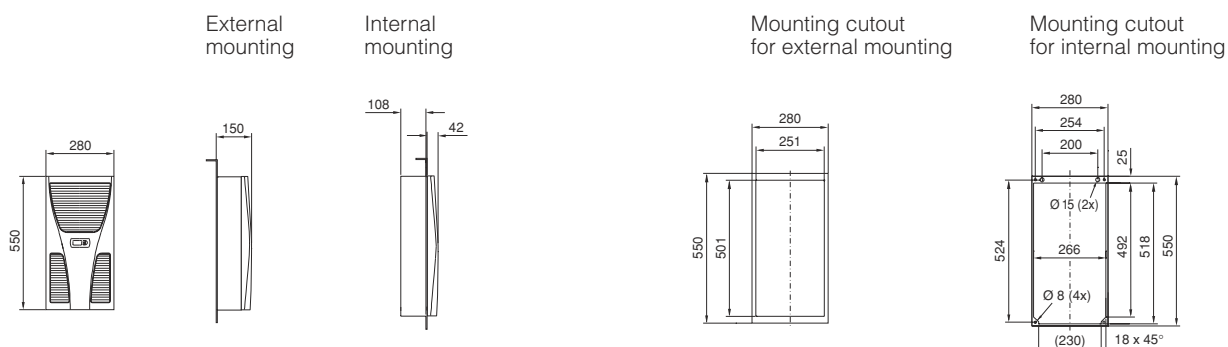




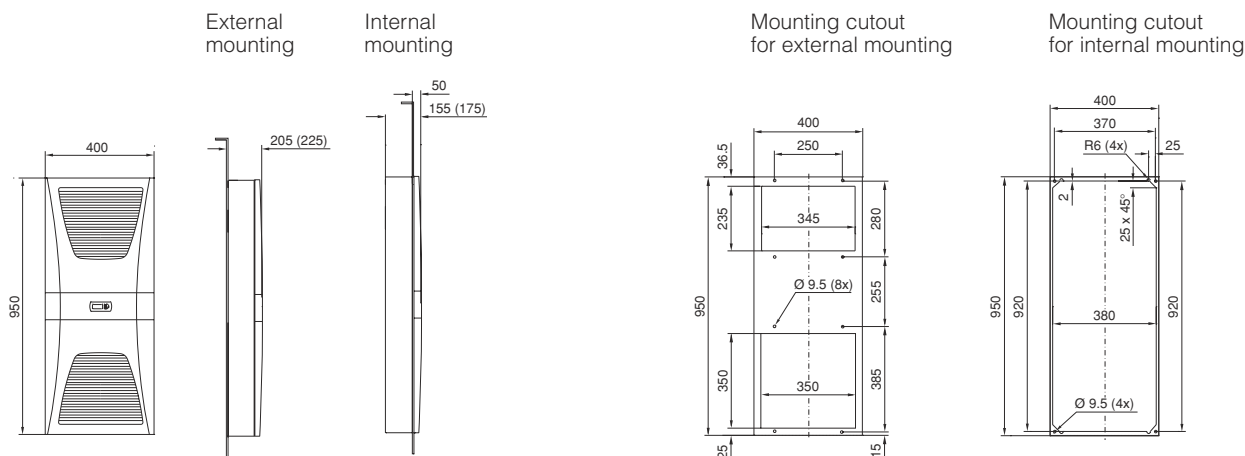
## TopTherm air/air heat exchangers

### 4.3 TopTherm air/air heat exchanger

Wall-mounted, specific thermal capacity 17.5 W/C

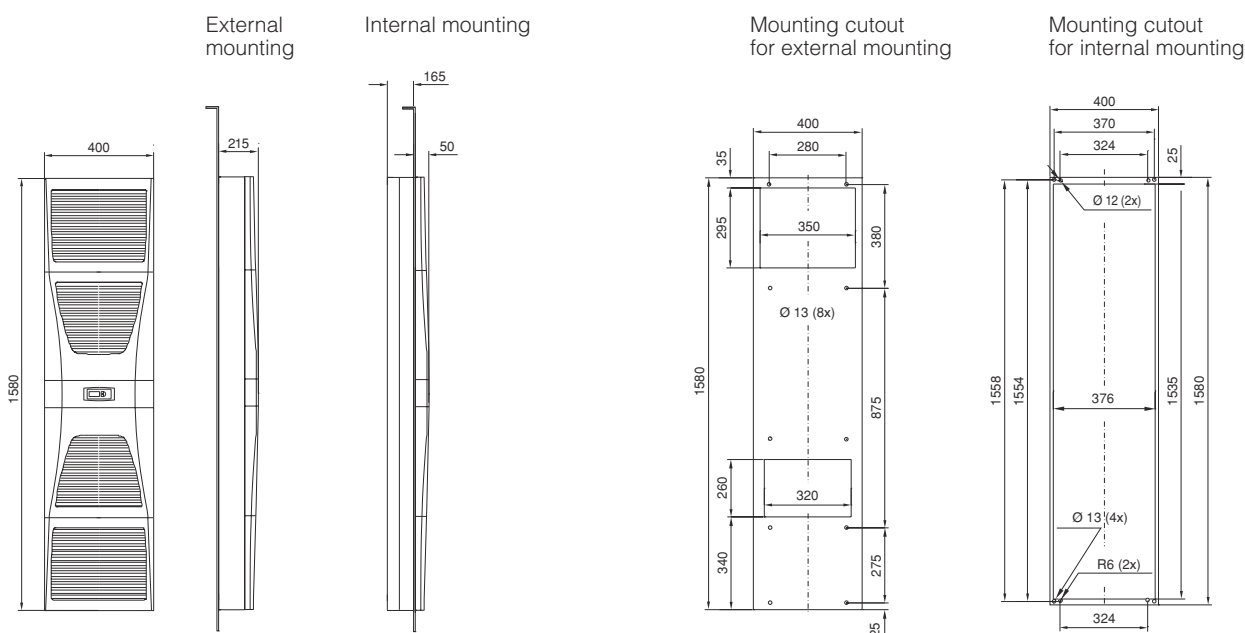


Wall-mounting, specific thermal capacity 30 – 60 W/C



Dimensions in brackets for 45 W/C and 60 W/C

Wall-mounted, specific thermal capacity 90 W/C





## Air/air heat exchangers/rack-mounted climate control

### Air/air heat exchanger

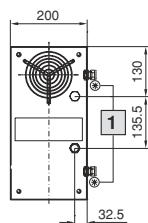
Wall-mounted

SK 3129.800

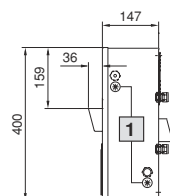
External mounting

Mounting cutout for external mounting

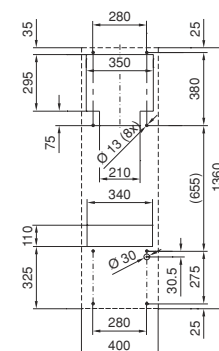
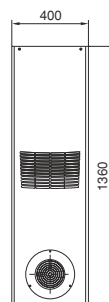
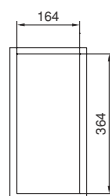
Back side



Side view



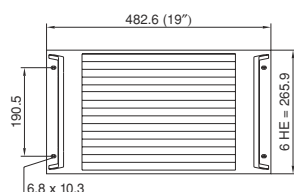
Mounting cutout for external and internal mounting



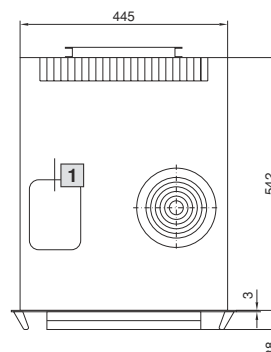
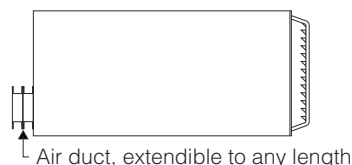
1 Optional cable pass-through

### 4.5 Rack-mounted air conditioner

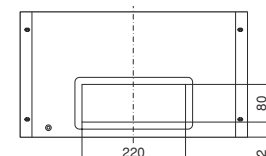
For 482.6 mm (19"), useful cooling capacity 1000 W (3415 BTU)



HE = U



View of the rear of the unit

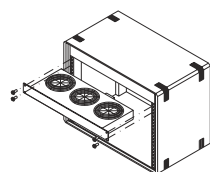


1 Service flap (thermostat)

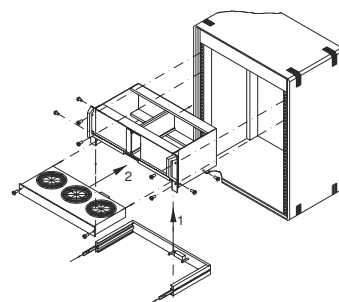
### 4.5 Rack-mounted fan

For 482.6 mm (19"), air displacement 320/480 m<sup>3</sup>/h (188/283 cfm)

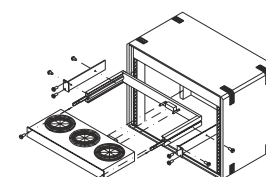
Rack-mounted fan mounted between a pair of 482.6 mm (19") rails



Vario rack-mounted fan mounted in subracks 84 HP

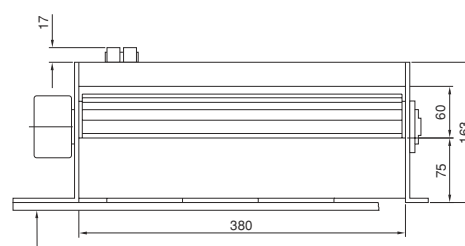
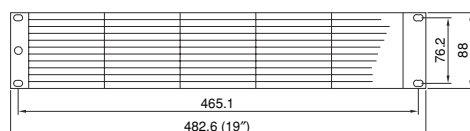


Vario rack-mounted fan mounted between a pair of 482.6 mm (19") rails



### 4.5 Centrifugal fan

Air displacement 320 m<sup>3</sup>/h (188 cfm)



Front grille



# Climate Control

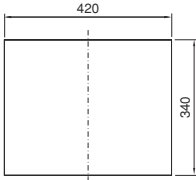
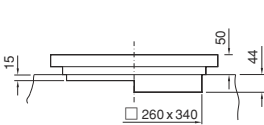
## Climate control tailored to enclosures/heaters

### 4.5 Roof-mounted fan

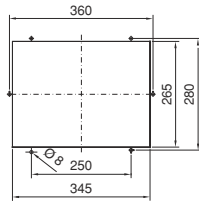
Air displacement 360 m³/h (212 cfm)

Without fan

With fan

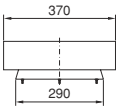
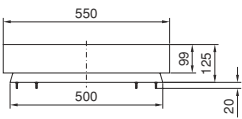


Mounting cutout

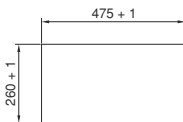


### 4.5 Roof-mounted fan and vent attachment

Air displacement (unimpeded air flow) 400/800 m³/h (235/471 cfm)

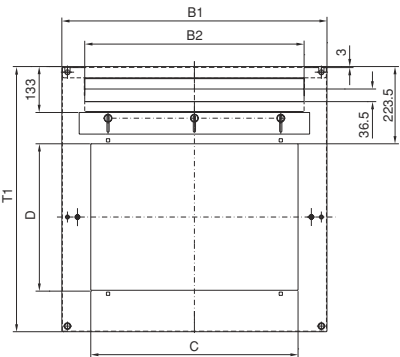


Mounting cutout



### 4.5 Fan roof, modular, two-piece for TS/FR(i)

Air displacement per fan (unimpeded air flow) 160/180 mm³/h (94/106 cfm) at 50/60 Hz



For enclosures		Cover plate		Roof dimensions			C	D	Part No. TS
W (B) mm (inches)	D (T) mm (inches)	Solid	Vented	W (B1)	W (B2)	D (T1)			
mm (inches)									
600 (23.6)	600 (23.6)	2102.180	2102.400	567.5 (22.3)	435 (17.1)	567.5 (22.3)	400 (15.7)	224 (8.8)	<b>7826.366</b>
	800 (31.5)	2102.190	2102.410			767.5 (30.2)		424 (16.7)	<b>7826.368</b>
	900 (35.4)	2102.190	2102.410			867.5 (34.2)			<b>7826.369</b>
	1000 (39.4)	2102.190	2102.410			967.5 (38.1)			<b>7826.360</b>
800 (31.5)	600 (23.6)	7885.100	7885.200	767.5 (30.2)	635 (25.0)	567.5 (22.3)	600 (23.2)	224 (8.8)	<b>7826.486</b>
	800 (31.5)	7886.100	7886.200			767.5 (30.2)		424 (16.7)	<b>7826.488</b>
	900 (35.4)	7886.100	7886.200			867.5 (34.2)			<b>7826.489</b>
	1000 (39.4)	7886.100	7886.200			967.5 (38.1)			<b>7826.480</b>

### 4.6 Enclosure heaters

Continuous thermal output 10 – 300 W (40 – 1030 BTU)

SK 3102.000  
including fan

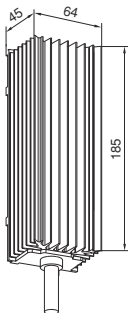
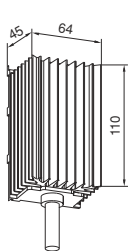
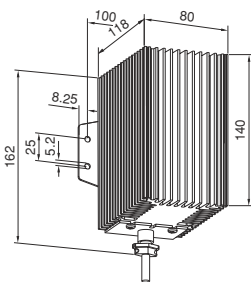
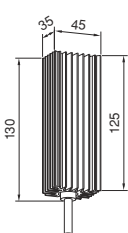
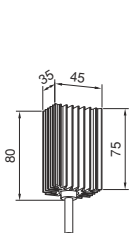
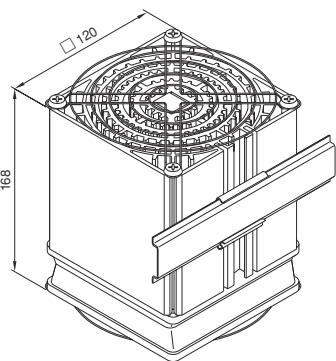
SK 3105.000

SK 3106.000

SK 3107.000

SK 3115.000

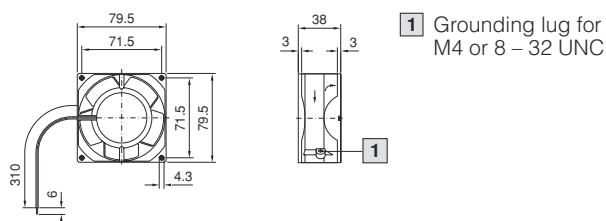
SK 3116.000





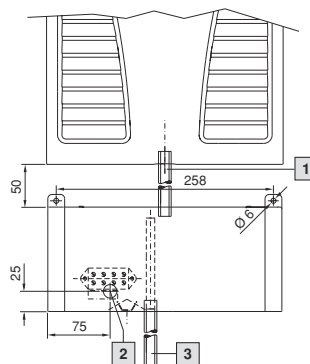
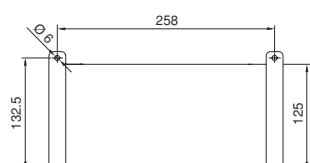
### 4.6 Axial fan

For heater SK 3107.000

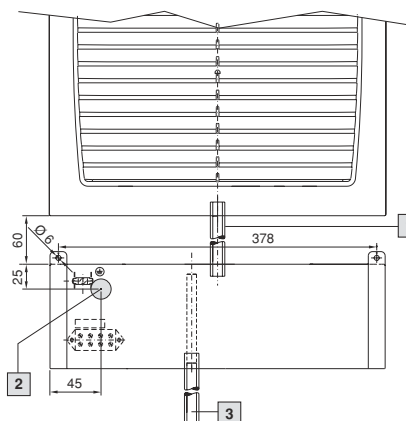
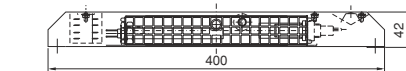
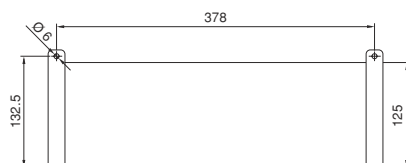


### 4.7 Electronic condensate evaporator

SK 3301.560/.580

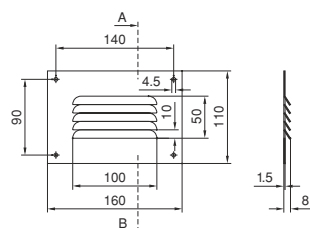


SK 3301.570/.590

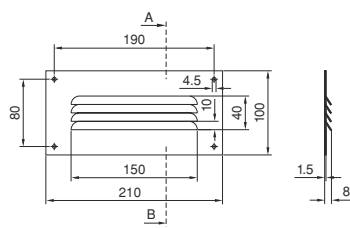


### 4.7 Integrated louvers

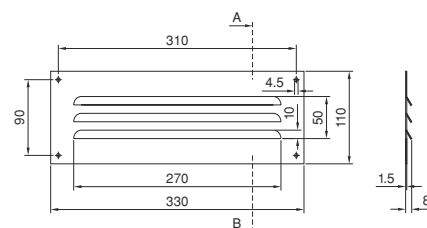
SK 2541.235



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SK 2543.235





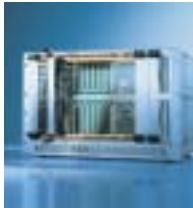
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