



*Schroff*

# 19"-FAN TRAYS

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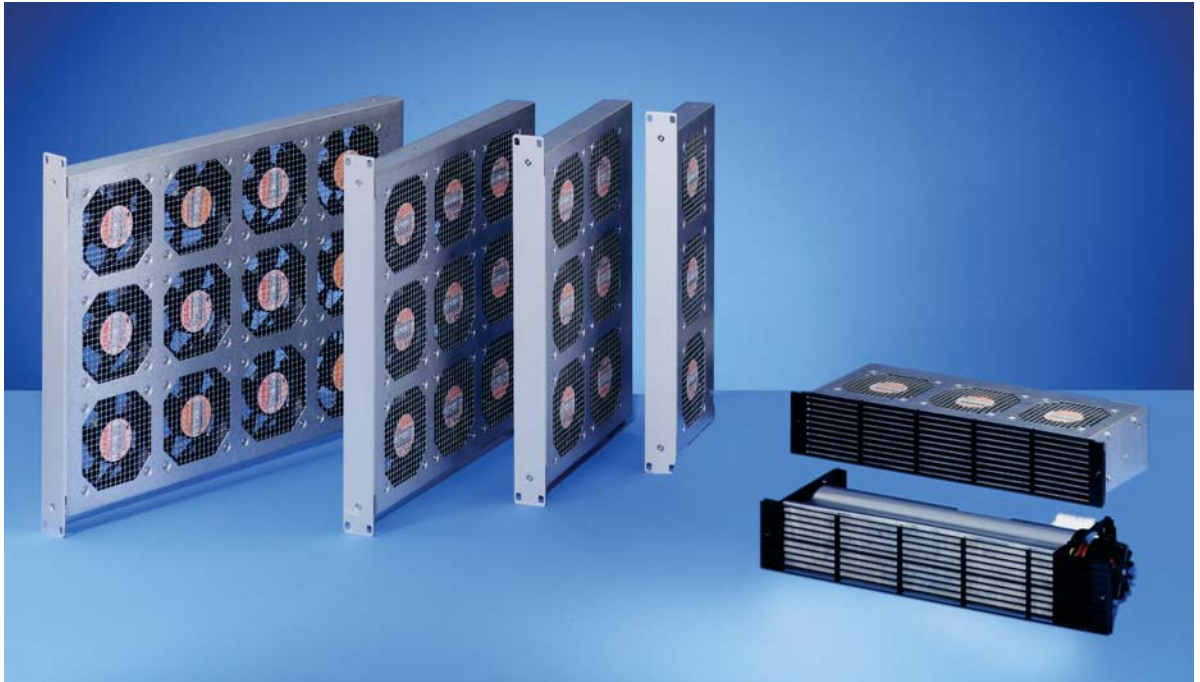
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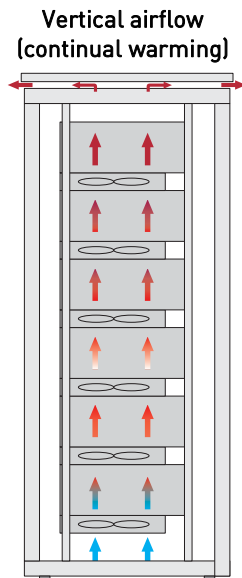
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**Standards/Approvals**

- 19" assembly area in accordance with: IEC 60297-3-101

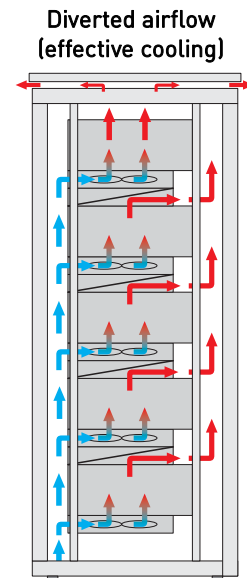
- Mechanical protection to DIN EN ISO 13857
- Contact protection to DIN EN ISO 13857
- Electrical safety to EN 60335 part 1
- Plastics self-extinguishing to UL 94 V0

**Airflow**



01109055

With vertical airflow the air becomes steadily warmer as it rises through the cabinet.



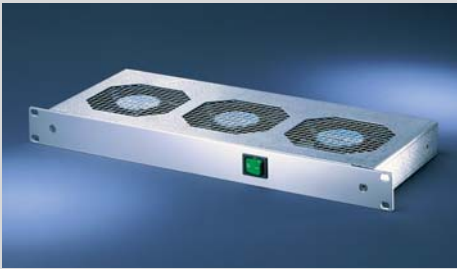
01109054

By using the 1 U airflow element, air is introduced from the front and extracted to the rear. Now all sub-assemblies receive the same cooling air.

# Climate control – 19" fan trays

## 19" fan trays

- To cool single components and assemblies in 19" cabinets
- High airflow rate for directed heat removal
- With axial or radial fans
- For voltages 230 V<sub>AC</sub>, 115 V<sub>AC</sub> or 24 V<sub>DC</sub>
- CE- approvals



01109002

### 19" fans

- 19" circulation fan, height 1 U
- 230 V<sub>AC</sub>, 115 V<sub>AC</sub> and 24 V<sub>DC</sub>
- Up to 1000 m<sup>3</sup>/h
- With/without mains switch or with temperature-dependent speed control



01192009

### 19" pusher fans

- Tangential fan, height 2 U
- 230 V<sub>AC</sub> and 115 V<sub>AC</sub>
- Up to 320 m<sup>3</sup>/h



01194005

- 19" pusher fan, height 2 U
- 230 V<sub>AC</sub> and 115 V<sub>AC</sub>
- Up to 530 m<sup>3</sup>/h



01102017

- 19" pusher fan, height 3 U
- 230 V<sub>AC</sub> and 115 V<sub>AC</sub>
- Up to 570 m<sup>3</sup>/h
- Variable air outlet with/without pipe connection, upward or to rear

### 19" fans

1 U with/without front switch ..... 4.6

1 U speed-controlled and monitored ..... 4.8

### 19" blower units

Pusher fan, 2 U with tangential blower ..... 4.9

Pressure fan, 2 U, (160, 220 mm deep) ..... 4.10

Pusher fan, 3 U... 4.12

ServicePLUS configuration .... 4.14

### Accessories

19" airflow element ..... 4.15

AC fans ..... 4.16

DC fans ..... 4.16

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### ServicePLUS from page 4.19

- e.g. other airflow capacities
- e.g. supply voltages
- e.g. other dimensions
- e.g. custom solutions

[www.schroff.biz/ServicePLUS](http://www.schroff.biz/ServicePLUS)



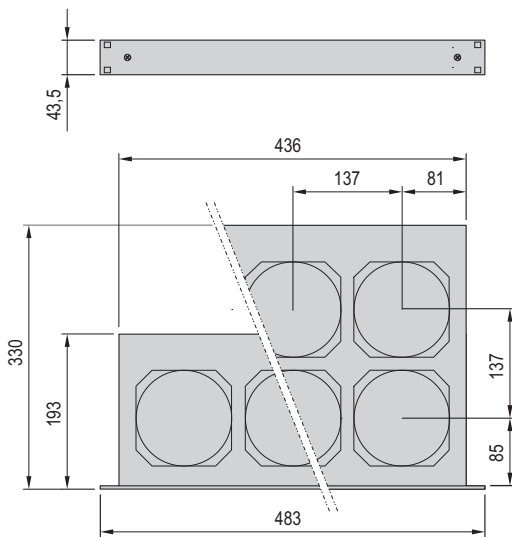
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## Climate control – 19" fan trays

### 19" fan 1 U



01194002



KTA44306

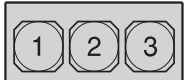
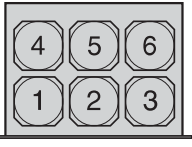
- Mechanical strain relief for mains cables
- Can be adapted to subracks
- Contact protection in accordance with DIN EN ISO 13857



### Delivery comprises (ready to connect)

Item	Qty	Description
1	1	19" circulation fan, 1 U, cover/base plate, St, 1 mm, finish AlZn, with perforation; front panel 1 U, Al, 3 mm, anodised
2	3 / 6	Fan, see Order Information
3a	1	AC with IEC connector (mains input IEC 60320), incl. safety clamp for mechanical strain relief
b3	1	DC version with connecting cable, cable length 2.5 m

### Order Information

	24 V <sub>DC</sub> Part no.	115 V <sub>AC</sub> Part no.	230 V <sub>AC</sub> Part no.
	<b>10713-103</b>	<b>10713-102</b>	<b>10713-100</b>
	<b>10713-107</b>	<b>10713-106</b>	<b>10713-104</b>
<b>Replacement fan 1 piece</b>	<b>20713-240</b>	<b>20713-244</b>	<b>20713-243</b>
<b>Side panel connecting bracket</b> between europacPRO subrack and fan, including fixing material kit, PU 4 pieces			<b>21101-954</b>
<b>Equipment cable SCHUKO/UTE</b> SCHUKO/UTE plug, IEC 60320 C13 socket, 2.5 m, 1 piece			<b>60103-131</b>
<b>Equipment cable, BS</b> British Standard plug, IEC 60320 C13 socket, 2.5 m, 1 piece			<b>60103-137</b>
<b>Equipment cable, USA</b> USA plug, IEC 60320 socket, 2 m, 1 piece			<b>60103-141</b>



ServicePLUS see page 4.19

### Technical data

Voltage	230 V <sub>AC</sub>		115 V <sub>AC</sub>		24 V <sub>DC</sub>
	Frequency in Hz	50	60	50	60
Number of fans	3/6		3/6		3/6
Airflow volume in m <sup>3</sup> /h (3/6 fans)	440/845	520/1000	440/845	520/1000	506/970
Noise level in dB(A) (3/6 fans)	56.5/59.4	60.2/62.9	56.5/59.4	60.2/62.9	60.5/63.3
Power consumption in W (3/6 fans)	45/90	42/84	46.5/93	43.5/87	24/48
Max. stat. pressure in Pa	73	88	73	88	68
Permissible ambient temperature in °C	-40 ... +70 °C				
Lifespan in h L <sub>10</sub> 40 °C	43500				
Lifespan in h L <sub>10</sub> 55 °C	20000				

### Note

- Fan dimensioning see page 4.18
- Replacement fans see chapter Climate control - Accessories
- Versions with multiple fans see ServicePLUS configuration page 4.14

## Climate control – 19" fan trays

## 19" fan 1 U with front switch



01194003



01197002


- Front-mounted illuminated mains switch on AC devices, coupled with additional rear mains outlet; mechanical strain relief for mains input and mains output cables
- Can be adapted to subracks
- Contact protection in accordance with DIN EN ISO 13857



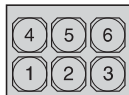
Delivery comprises (ready to connect)

Item	Qty	Description
1	1	19" circulation fan, 1 U, top/base plate, St, 1 mm, finish ALZn, with perforation; front panel 1 U, Al, 3 mm, anodised
2	3 / 6	Fan, see Order Information
3a	1	AC version with mains switch, illuminated green; plug (mains input IEC 60320) incl. safety clamp for mechanical strain relief; coupled mains output socket (IEC 60320)
b3	1	DC version with mains switch and connecting cable, cable length 2.5 m

## Order Information

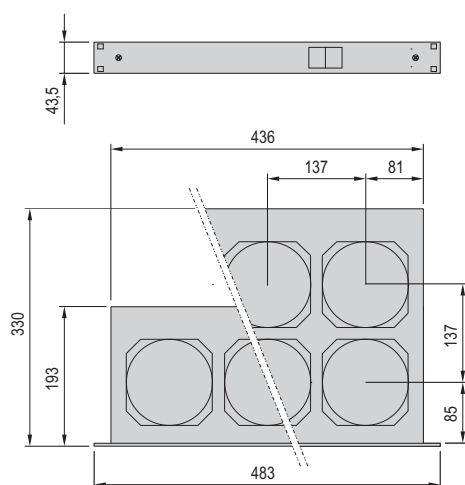
	24 V <sub>DC</sub> Part no.	115 V <sub>AC</sub> Part no.	230 V <sub>AC</sub> Part no.
	<b>10713-111</b>	<b>10713-110</b>	<b>10713-108</b>

KTA44857

	<b>10713-115</b>	<b>10713-114</b>	<b>10713-112</b>
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KTA44858

<b>Replacement fan</b> 1 piece	<b>20713-240</b>	<b>20713-244</b>	<b>20713-243</b>
<b>Side panel connecting bracket</b> between europacPRO subrack and fan, including fixing material kit, PU 4 pieces			<b>21101-954</b>
<b>Equipment cable SCHUKO/UTE</b> SCHUKO/UTE plug, IEC 60320 C13 socket, 2.5 m, 1 piece			<b>60103-131</b>
<b>Equipment cable, BS</b> British Standard plug, IEC 60320 C13 socket, 2.5 m, 1 piece			<b>60103-137</b>
<b>Equipment cable, USA</b> USA plug, IEC 60320 socket, 2 m, 1 piece			<b>60103-141</b>
<b>Mains cable, IEC</b> IEC 60320 C14 plug, IEC 60320 C13 socket, 2.5 m, 1 piece			<b>60197-053</b>



KTA45963



ServicePLUS see page 4.19

## Technical data

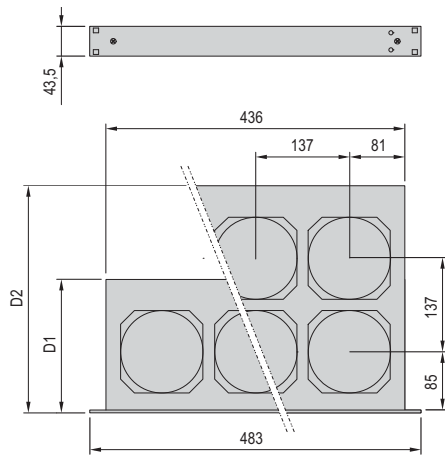
Voltage	230 VAC		115 VAC		24 VDC
	50	60	50	60	-
Frequency in Hz					
Number of fans	3/6		3/6		3/6
Airflow volume in m <sup>3</sup> /h (3/6 fans)	440/845	520/1000	440/845	520/1000	506/970
Noise level in dB(A) (3/6 fans)	56.5/59.4	60.2/62.9	56.5/59.4	60.2/62.9	60.5/63.3
Power consumption in W (3/6 fans)	45/90	42/84	46.5/93	43.5/87	24/48
Max. stat. pressure in Pa	73	88	73	88	68
Permissible ambient temperature in °C	-40 ... +70 °C				
Lifespan in h L <sub>10</sub> 40 °C	43500				
Lifespan in h L <sub>10</sub> 55 °C	20000				

- Fan dimensioning, see page 4.18
- Replacement fans, see chapter Climate control - Accessories
- Versions with multiple fans see ServicePLUS configuration page 4.14

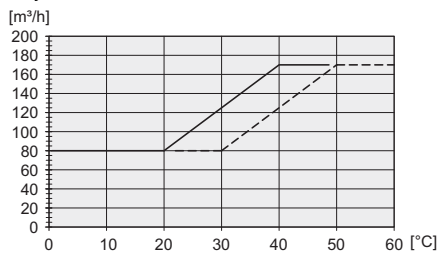
## Climate control – 19" fan trays



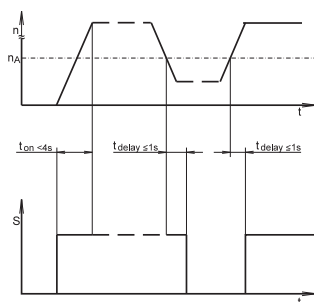
Photo shows 19" fan unit with 3 fans, without switch



Airflow capacity with one fan



Monitoring signal



$n$  = rotating speed,  $S$  = signal,  $n_A$  = speed threshold value "Alarm"

### 19" fan 1 U, with speed control and function monitoring

- Low noise through temperature dependent airflow volume
- Range selectable: 20 ... 40 °C and 30 ... 50 °C
- External sensor, at sensor breakage max speed will be set automatically
- Function control with LEDs and via potential-free contact
- Contact protection in accordance with DIN EN ISO 13857
- 2 versions, 24 V<sub>DC</sub> or 230 V<sub>AC</sub>



Delivery comprises (ready for connection)

Item	Qty	Description
1	1	19" circulation fan, 1 U; cover/base plate, St, 1 mm, finish Al-Zn, with perforation front panel 1 U, Al, 3 mm, anodised
2	3 / 6	DC fan, see Order information
3	1	Connecting cable, length 2.5 m, open-ended
4	1	Temperature sensor for speed control, NTC resistor, cable length 1.5 m

### Order Information

	24 V <sub>DC</sub>		230 V <sub>AC</sub>		
	D mm	Without switch Part No.	D mm	With switch Part No.	Without switch Part No.
D1 <small>KTA44857</small>	193	<b>10713-099</b>	250	19713-121	–
D2 <small>KTA44858</small>	330	<b>10713-098</b>	397	–	<b>19713-006</b>

### Accessories

Filter mat, class G 2 for 3 fans, PU 3 pieces	<b>60713-169</b>
Filter mat, class G 2 for 6 fans, PU 3 pieces	<b>60713-170</b>

### Technical data

Voltage AC version (fans 24 V <sub>DC</sub> )	86 ... 260 V <sub>AC</sub>	
Voltage DC version	24 V <sub>DC</sub> (21 ... 27)	
Number of fans	3	6
Max. airflow volume in m <sup>3</sup> /h	467	895
Noise level in dB(A)	63.5	66.4
Max. stat. pressure in Pa	70	70
Power consumption in W	15.9	31.8 W
Permissible ambient temperature °C	–20 ... +65 °C	
Life in h L <sub>10</sub> 40 °C	70000	

### Technical data Regulation/monitoring

Control range	Changeover switch between 20 ... 40 °C and 30 ... 50 °C
Sensor	External NTC resistor, cable length 1.5 m
Sensor connector	Rear-mounted plug contact, max. rotation speed in case of sensor breakage
Signal at	Speed < 30 % nominal speed; switch-on delay < 4 s, signal delay < 1 s (see monitoring signal)
Signalling	Display via LEDs; potential-free contact (changeover), switching capacity 5 W, max. switching voltage 170 V, open collector on request

- Fan dimensioning see page 4.18



ServicePLUS see page 4.19

## Climate control – 19" fan trays

### Pusher fan, 2 U, with tangential fan



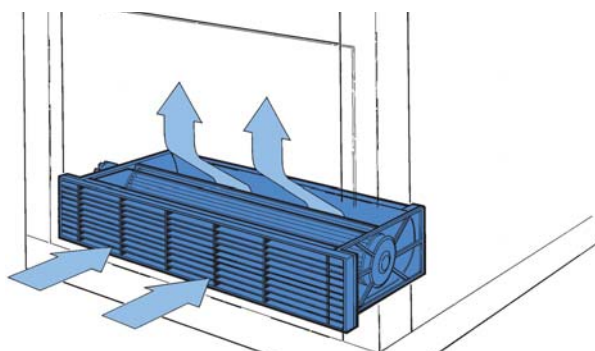
01192009

- High airflow volume
- Integrated filter mat
- 2 versions:
  - LE1: 19" bolt-on dimension, fan unit is wider than 19"
  - LE2: 19" reduced width, for easy assembly



#### Delivery comprises (ready to connect)

Item	Qty	Description
1	1	Blower unit 2 U, with grille, PA 6.6, UL 94 V-0, front grille 2 U, PPO, UL 94 V-0; filter mat, synthetic fibre, filter class G 2
2	1	Fan
3	1	Terminal block



A3532

#### Order Information

Description	115 V <sub>AC</sub>		230 V <sub>AC</sub>	
	Part no.		Part no.	
LE1: Pusher fan 2 U, tangential blower	<b>60713-003</b>	<b>60713-001</b>		
LE2: Pusher fan 2 U, tangential blower	<b>60713-004</b>	<b>60713-002</b>		
Spare filter mat PU 10 pieces			<b>20705-008</b>	

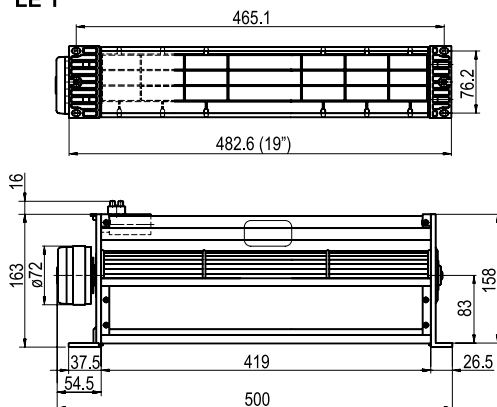
#### Dimensions

Voltage	115 V <sub>AC</sub>		230 V <sub>AC</sub>	
	Part no.		Part no.	
Frequency in Hz	50	60	50	60
Airflow volume in m <sup>3</sup> /h	320	330	320	330
Noise level in dB(A)	59	62	59	62
Max. stat. pressure in Pa	65	70	65	70
Power consumption in W	30	40	37	46
Permissible ambient temperature in °C	-20 ... +65 °C			
Lifespan in h	30000			

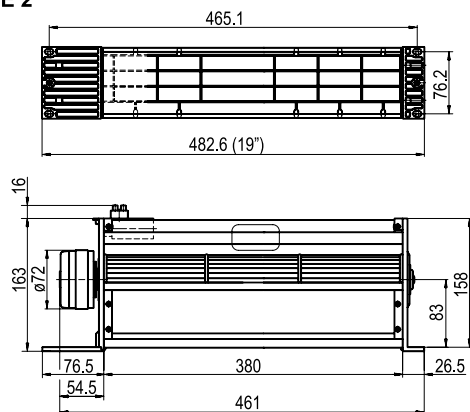
#### Note

- 24 V<sub>DC</sub> on request
- Fan dimensioning, see page 4.18

LE 1



LE 2



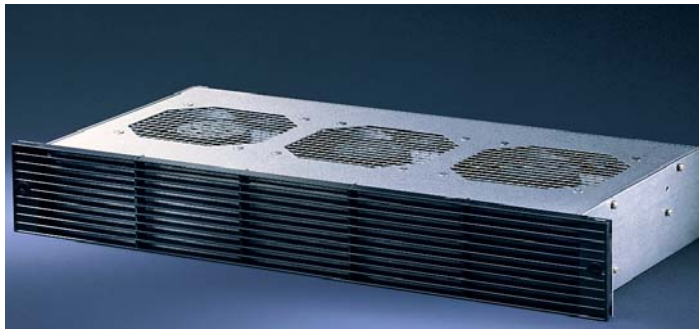
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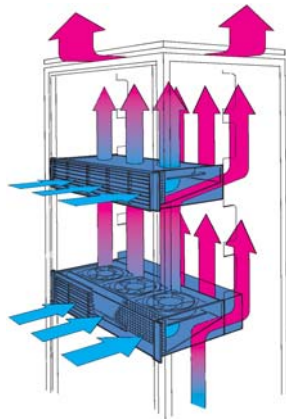
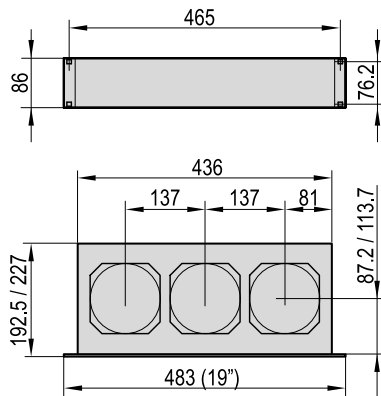
ServicePLUS see page 4.19

## Climate control – 19" fan trays

### 19" pusher fan 2 U (depth 160 mm or 220 mm)



01194005



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- Integrated air deflector prevents heat buildup in the assemblies mounted below
- Optionally with rear additional fan, 2 U, for active cooling of assemblies beneath the pusher fan
- Can be adapted to subracks
- Contact protection in accordance with DIN EN ISO 13857



#### Delivery comprises (ready to connect)

Item	Qty	Description
1	1	19" pusher fan 2 U, case, St, 1 mm, finish Al-Zn; front grille 2 U, PPO, UL 94 V-0 Filter mat, synthetic fibre, filter class G 2
2	3	Fan
3a	1	AC-version with plug (mains input, IEC 60320), incl. safety clamp, mechanical strain relief for mains input cable; socket to connect an optional supplementary fan
3b	1	Wide AC input range with DC fans, version as 3 a, additionally speed-controlled and monitored
3c	1	DC version with connecting cable, cable length 2.5 m

#### Note

- Supplementary fan for AC version see page 4.11
- Fan dimensioning, see page 4.18



ServicePLUS see page 4.19

#### Order Information

Description	Front panel Al, anodised 86 ... 260 V <sub>AC</sub> (fan 24 V <sub>DC</sub> ) 515 m <sup>3</sup> /h Part no.	Front panel, plastic, black				
		24 V <sub>DC</sub> 515 m <sup>3</sup> /h Part no.	115 V <sub>AC</sub> 300/330 m <sup>3</sup> /h Part no.	115 V <sub>AC</sub> 445/530 m <sup>3</sup> /h Part no.	230 V <sub>AC</sub> 300/330 m <sup>3</sup> /h Part no.	230 V <sub>AC</sub> 445/530 m <sup>3</sup> /h Part no.
For board depth 160 mm	19713-540	10713-537	10713-520	10713-536	10713-518	10713-534
For board depth 220 mm	–	10713-529	–	–	–	10713-526
Replacement fan piece	20713-240	20713-240	20713-147	20713-244	20700-001	20713-243
Equipment cable SCHUKO/UTE SCHUKO/UTE plug, IEC 60320 C13 socket, 2.5 m, 1 piece						60103-131
Equipment cable BS British Standard plug, IEC 60320 C13 socket, 2.5 m, 1 piece						60103-137
Equipment cable USA USA plug, IEC 60320 socket, 2 m, 1 piece						60103-141
Side panel connecting bracket between europac subrack, including fixing material kit						21101-104
Side panel connecting bracket between europacPRO subrack and fan, including fixing material kit, PU 4 pieces						21101-954
Spare filter mat PU 3 pieces						60713-501

#### Technical data with 3 fans

Voltage	24 V <sub>DC</sub>		115 V <sub>AC</sub>				230 V <sub>AC</sub>			
	24 V <sub>DC</sub>	24 V <sub>DC</sub>	50	60	50	60	50	60	50	60
Frequency in MHz	–	–	50	60	50	60	50	60	50	60
Airflow volume in m <sup>3</sup> /h	515	515	300	330	445	530	300	330	445	530
Noise level in dB(A)	59.8	59.8	52.2	56.1	55.2	58.2	52.2	56.1	55.2	58.5
Max. stat. pressure in Pa	68	68	41	41	78	88	41	41	78	88
Power consumption in W	24	24	42	33	46.5	43.5	42	33	45	42
Permissible ambient temperature in °C	–20 ... +70 °C	–20 ... +70 °C	–40 ... +70 °C				–40 ... +70 °C			
Life in h, <sup>1</sup> at 40 °C, <sup>2</sup> at 55 °C	20000 <sup>2</sup>	20000 <sup>2</sup>	50000 <sup>1</sup>		20000 <sup>2</sup>		50000 <sup>1</sup>		20000 <sup>2</sup>	

# Climate control – 19" fan trays

## Supplementary fans with housing for pusher fan 2 U



01194006

- Extra 2 U useable space:  
By using a built-on fan, components mounted below the 19" pusher fan can be cooled
- No additional voltage supply necessary: connection is via 19" pusher fan, 2 U
- Contact protection in accordance with DIN EN ISO 13857



Delivery comprises (ready to fit and connect)

Item	Qty	Description
1	1	Housing with grille, St, 1 mm, finish AlZn
2	4	Fan
3	1	Cable with plug (electrical connection via socket on 19" blower fan); safety clamp (mechanical strain relief for mains input cable)

### Order Information

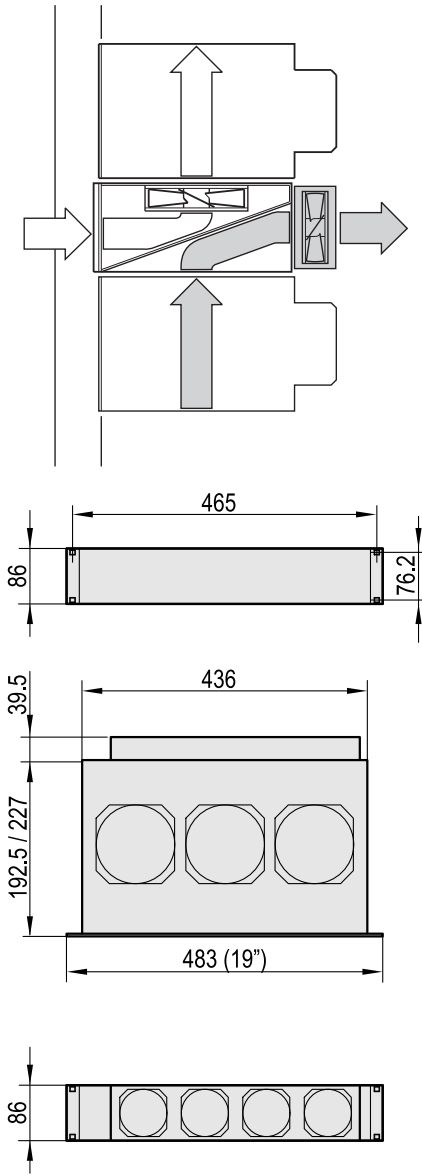
Description	115 V <sub>AC</sub> Part no.	230 V <sub>AC</sub> Part no.
Supplementary fans with housing for pusher fan 2 U	10713-532	<b>10713-530</b>

### Technical data with 3 fans

Voltage	115 VAC		230 VAC	
	Frequency in MHz	50	60	50
Airflow volume in m <sup>3</sup> /h	130	155	130	155
Noise level in dB(A)	51	54	51	54
Max. stat. pressure in Pa	44	62	44	62
Permissible ambient temperature in °C	-40 ... +70		-40 ... +70	
Power consumption in W	30	24	27	21
Life in h at 55 °C	20000		20000	

### Note

- 24 V<sub>DC</sub> version available on request
- Fan dimensioning see page 4.18



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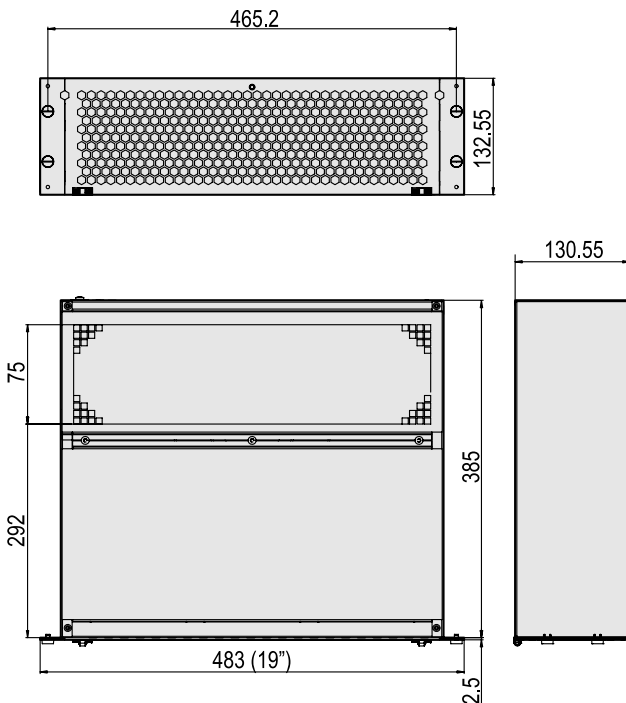
ServicePLUS see page 4.19

## Climate control – 19" fan trays

### 19" pusher fan 3 U



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01103052



ServicePLUS see page 4.19

With cover plates, this pusher fan can be re-fitted to different cooling concepts

- Ventilation directed accurately to the electronics
- Air infeed from front, air exits at the top rear of cabinet (guided upwards by cover plates or via hoses to rear and upwards)
- Contact protection in accordance with DIN EN ISO 13857



Delivery comprises (ready for connection)

Item	Qty	Description
1	1	Case, St, 1 mm, AlZn; perforated hinged front panel, Al, 2.5 mm; filter mat, synthetic fibre, filter class G 2 in accordance with DIN EN 779
2	1	Radial fan with mains fuse
3	1	Plug (mains input, IEC 60320); safety clamp, mechanical strain relief for mains input cable

### Order Information

Description	115 V <sub>AC</sub>		230 V <sub>AC</sub>	
	Part no.		Part no.	
19" pusher fan 3 U	10713-547		10713-546	

### Accessories

Equipment cable SCHUKO/UTE SCHUKO/UTE plug, IEC 60320 C13 socket, 2.5 m, 1 piece	60103-131
Equipment cable, BS British Standard plug, IEC 60320 C13 socket, 2.5 m, 1 piece	60103-137
Equipment cable, USA USA plug, IEC 60320 socket, 2 m, 1 piece	60103-141
Side panel connecting bracket between europac subrack and fan, including fixing material kit, PU 4 pieces	21101-958
Side panel connecting bracket between europacPRO subrack and fan, including fixing material kit, PU 4 pieces	21101-954
Spare filter mat PU 3 pieces	60713-868

### Technical data

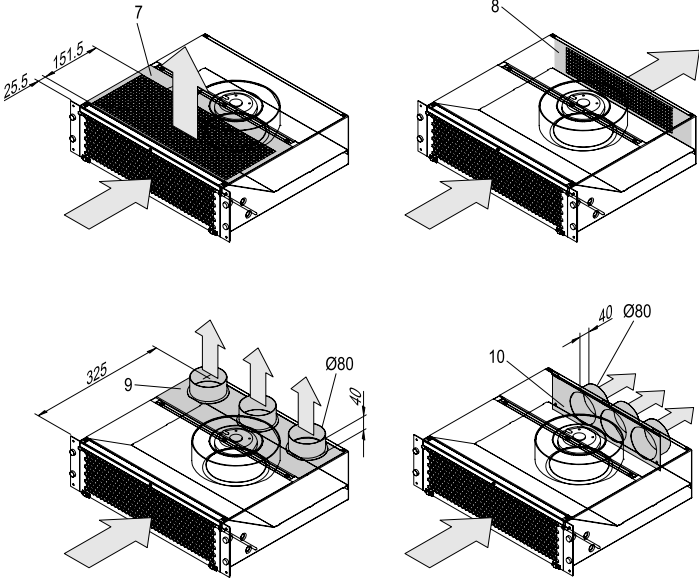
Voltage	115 VAC		230 VAC	
	50	60	50	60
Frequency in MHz	50	60	50	60
Airflow volume in m <sup>3</sup> /h	510	570	510	570
Noise level per fan in dB(A)	62	64	62	64
Max. stat. pressure in Pa	320	410	320	410
Power consumption in W	55	65	58	75
Max. ambient temperatures in °C	-20 ... +50		-20 ... +50	
Life in h at 55 °C	20000		20000	

### Note

- Wide input voltage range 90 V ... 260 V<sub>AC</sub> available on request
- Temperature control and function monitoring (alarm via RS 232) on request
- Air deflector plates for other cooling concepts see page 4.13
- Fan dimensioning see page 4.18

**Climate control – 19" fan trays**

**Air deflector plate for 19" pusher fan 3 U**



01103053

■ For 19" pusher fan 3 U

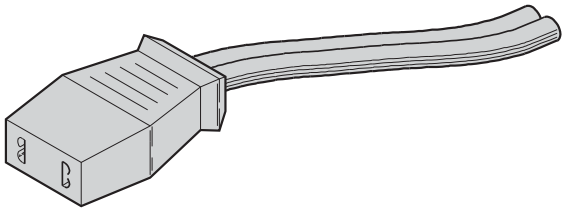
**Order Information**

Item	Description	Qty/PU	Part no.
7	Air deflector plate to front, St, 1 mm, finish ALZn	1	20713-504
8	Air outlet to rear: upper cover plate, without perforation, 1 mm, finish ALZn	1	20713-505
9	Air deflector plate with hose connection on upper rear, external diameter 80 mm, St, 1 mm, finish ALZn	1	20713-503
10	Air deflector plate with hose connection to rear, external diameter 80 mm, St, 1 mm, finish ALZn	1	20713-502



ServicePLUS see page 4.19

**Connecting cable with connector socket**



KTA43091

■ Connecting cable with connector for AC fans (25 mm and 38 mm height) and DC fans (38 mm height), cable length 1 m

**Delivery comprises**

Item	Qty	Description
1	1	Cable, PVC (2 x 0.75 mm <sup>2</sup> ), 1 m long, with 2 FASTON connectors 2.8 x 0.5 mm, DIN 46343 T1

**Order Information**

Description	Part no.
Connecting cable with plug	<b>21101-246</b>

## Climate control – 19" fan trays

### ServicePLUS: Configuration with assembly



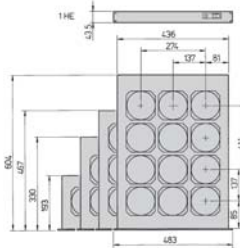
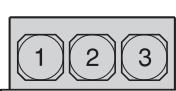






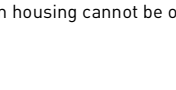
01102012

- You can plan and build up your product yourself using the order information table below
- Dimensions of fan trays
  - Height 1 U
  - Width 19"
  - Depth 193, 300, 467, 604 mm for 3, 6, 9 or 12 fans
- Create your 19" fan trays from individual parts (assembled within 10 working days)

### Example configuration

Qty	Description	Order no.
1	Housing, 1 piece	20713-213
1	Front panel with switch, AC, 1 piece	20713-231/05
1	Filter mat, 1 piece	60713-246/05
6	Fan, AC, height 25 mm; mounted at position 1, 3, 5, 7, 9, 11	20700-001/05

### Order Information

Fan height	Fan housing 1) cover/base plate, St, 1 mm, finish ALZn, with perforation	Front panel without switch		Front panel with switch		Filter mat G 2 can only be fitted where fan height is 25 mm	Fans		
		AC (230 V)	DC	AC (230 V)	DC				
	a44537	mm	1 piece	1 piece	1 piece	1 piece	1 piece	PU 3 pieces	see page
		25	20713-212	20713-220/05	20713-224/05	20713-228/05	20713-236/05	60713-243	4.16
	KTA44857	38	20713-216	20713-220/05	20713-224/05	20713-228/05	20713-236/05	-	4.16
		25	20713-213	20713-221/05	20713-225/05	20713-229/05	20713-237/05	60713-244	4.16
	KTA44858	38	20713-217	20713-221/05	20713-225/05	20713-229/05	20713-237/05	-	4.16
		25	20713-214	20713-222/05	20713-226/05	20713-230/05	20713-238/05	60713-245	4.16
	KTA44859	38	20713-218	20713-222/05	20713-226/05	20713-230/05	20713-238/05	-	4.16
		25	20713-215	20713-223/05	20713-227/05	20713-231/05	20713-239/05	60713-246	4.16
	KTA44860	38	20713-219	20713-223/05	20713-227/05	20713-231/05	20713-239/05	-	4.16

1) Fan housing cannot be ordered without fans

### Note

- Unused fan mounting positions are covered with foam material
- Versions for 115 V or with switch available on request
- Fan dimensioning see page 4.18

**Climate control – 19" fan trays**

**1 U air deflector chassis for 19" fan trays**



01109001



01109002

1 U air deflector chassis (bottom) with 1 U fan tray (top)

- Optimised cooling together with 19" fan trays
- Vertical buildup of heat is avoided by means of improved airflow
- Fitting options:
  - One fan tray: cool air is drawn in from the front and guided upwards
  - Two fan trays: cool air is drawn in from the front, directed upwards and guided to the rear (see application diagram)
- Versions:
  - With solid front panel to direct airflow
  - With perforated front panel to allow air to flow in/out
- Optional filter mat, simple to swap during operation

**NEW**

**Delivery comprises** (assembled)

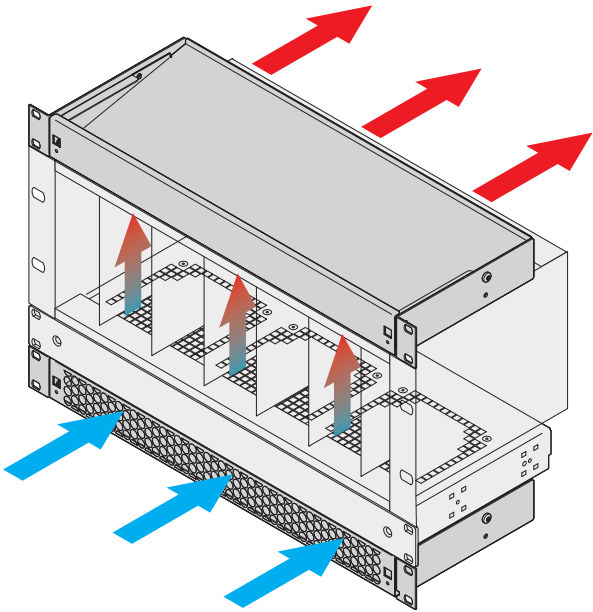
Item	Qty	Description
1	1	Air deflector plate, St, 1 mm, finish Zincor, width 432.8 mm (without side panel)
2	2	Side panel, St, 1.5 mm, finish Zincor; with 19" mounting bracket, powder-coated (see Order information for colour)
3a	1	Front panel, perforated, St, 1.5 mm, finish Zincor, powder-coated (see Order information for colour); two quick-release fasteners, black
3b	1	Front panel, solid, St, 1.5 mm, finish Zincor, powder-coated (see Order information for colour); two quick-release fasteners, black
4	1	Assembly kit

**Order Information**

1 U air deflector chassis for 19" fan trays	Depth mm	Colour	Part no. Front panel, perforated	Part no. Front panel, solid
for single-row fan trays (3 fans)	193	RAL 7035	10713-140	10713-146
	193	RAL 9005	10713-142	10713-148
	193	RAL 9006	10713-144	10713-150
for double-row fan trays (6 fans)	330	RAL 7035	10713-141	10713-147
	330	RAL 9005	10713-143	10713-149
	330	RAL 9006	10713-145	10713-151

**Accessories**

Filter mat, class G 2 for 3 fans, PU 3 pieces	<b>60713-169</b>
Filter mat, class G 2 for 6 fans, PU 3 pieces	60713-331



01109051

Application: air deflector chassis mounted below 19" fan tray, guides the cool air upwards from front; second air deflector chassis at top guides the warm air to the rear

## Climate control – 19" fan trays

### AC fans/replacement fans



01108005

#### Delivery comprises

Item	Qty	Description
1	1	Fan (width 119 mm, depth 119 mm)

#### Order Information

Description	Height mm	Airflow volume m <sup>3</sup> /h	115 V <sub>AC</sub>		230 V <sub>AC</sub>	
			Part no.	Part no.	Part no.	Part no.
Type A	25	84	<b>20713-146</b>		<b>20713-142</b>	
Type B	25	108	<b>20713-147</b>		<b>20700-001</b>	
Type C	38	162	<b>20713-244</b>		<b>20713-243</b>	
<b>Assembly kit for fan PU 1 kit</b>					<b>21102-013</b>	

#### Dimensions AC fans

Type	Type A		Type B		Type C	
	50	60	50	60	50	60
Frequency in Hz						
Airflow volume in m <sup>3</sup> /h	84	90	108	120	162	192
Noise level per fan in dB(A)	29	30	34	38	37	41
Max. static pressure in Pa	23	21	41	41	73	88
Max. ambient temperature in °C	70	70	70	70	70	70
Power consumption in W	8	7	14	11	15	14
Dimensions: height in mm (width 119 mm × depth 119 mm)	25		25		38	

- Please order connecting cable separately, see page 4.13
- Please order protective grille separately, see page 4.17

### DC fans/replacement fans



01108005

#### Delivery comprises

Item	Qty	Description
1a	1	Fan, height 38 mm, with plug connection
1b	1	Fan, height 25.5 mm, connecting cable, length 55 mm, connector with 2 x FASTON connectors (2.8 x 0.8 mm)

#### Order Information

Height mm	Airflow volume m <sup>3</sup> /h	Power consumption W	Input voltage V	Part no.
25.5	171	5.3	24	<b>20713-172</b>
38	184	8	12	<b>20713-241</b>
38	184	8	24	<b>20713-240</b>
38	184	8	48	20713-242
<b>Assembly kit for fan PU 1 kit</b>				<b>21102-013</b>

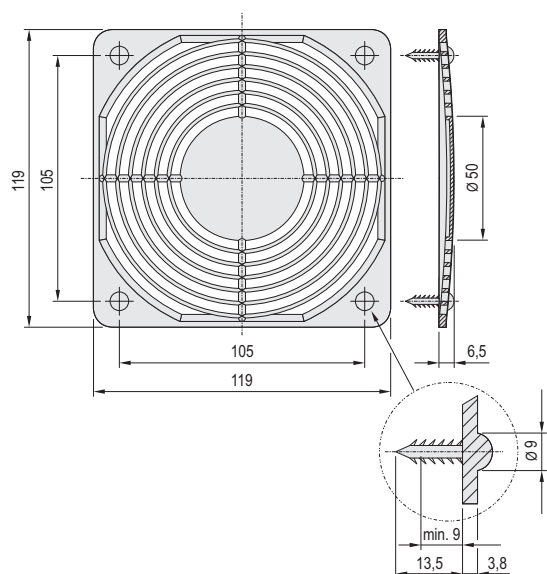
#### Technical data DC fans

Voltage in VDC	24	12	24	48
Dimensions: height in mm (width 119 mm × depth 119 mm)	25	38	38	38
Airflow volume in m <sup>3</sup> /h	171	184	184	184
Noise level per fan in dB(A)	41.5	42	42	42
Max. stat. pressure in Pa	50.5	68	68	68
Max. ambient temperature in °C	70	70	70	70
Power consumption in W	7	8	8	8

- Please order connecting cable for 38 mm high fans separately, see page 4.13
- Please order protective grille separately, see page 4.17

## Climate control – 19" fan trays

## Protective grille to snap-in



01108053

- Protective grille for direct mounting on AC and DC fans

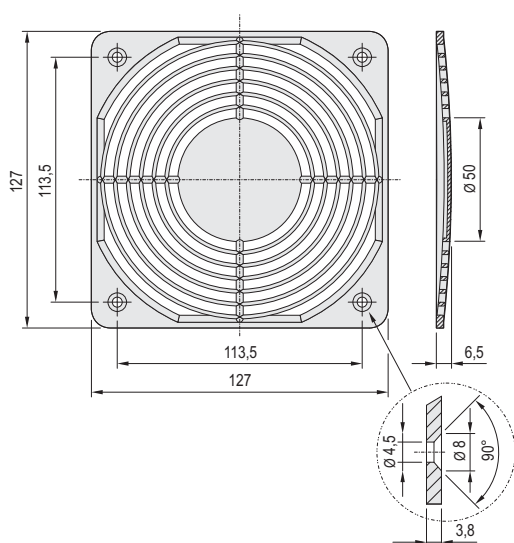
## Delivery comprises

Item	Qty	Description
1	1	Fibre glass reinforced plastic (PA), black, in accordance with DIN 31001, UL 94 V-0

## Order Information

Description	Part no.
Protective grille, plastic, to snap-in	<b>60225-052</b>

## Protective grille, plastic, to screw-on



01108054

- Protective grille for AC and DC fans
- Grille may be mounted on a front panel or the wall of the housing

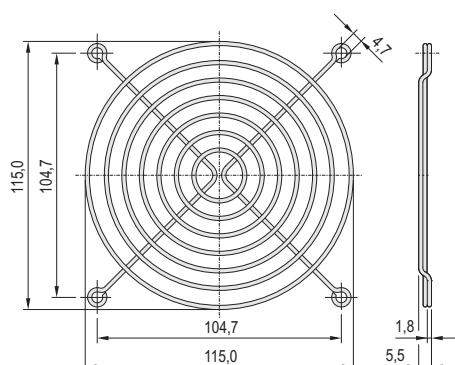
## Delivery comprises

Item	Qty	Description
1	1	Fibre glass reinforced plastic (PA), black, in accordance with DIN 31001, UL 94 V-0

## Order Information

Description	Part no.
Protective grille, plastic, to screw-on	<b>60225-053</b>
<b>Assembly kit for plastic grille</b> (4 screws, 4 washers, 4 nuts M4), PU 1 set	<b>21102-014</b>

## Protective grille, metal, to screw-on



01109050

- Protective grille for direct mounting on AC and DC fans
- Optimised noise level and air resistance

## Delivery comprises

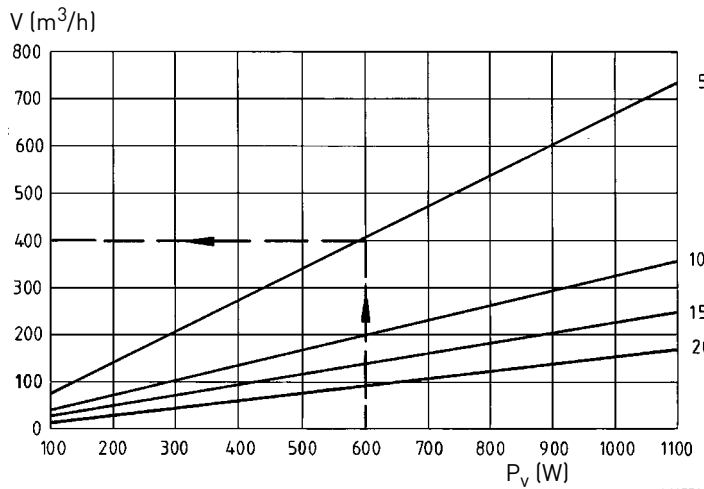
Item	Qty	Description
1	1	St, 1 mm

## Order Information

Description	Part no.
Protective grille, metal, to screw-on	<b>60197-019</b>
<b>Assembly kit for metal grille</b> (4 screws, 4 washers, 4 nuts M4), PU 1 set	<b>21102-015</b>

## Climate control – 19" fan trays

### 19" fan dimensioning



For local heat dissipation, the airflow volume required to expel the heat produced is calculated.

#### Note

The cabinet ventilation is not taken into account here. The required airflow volume is calculated as follows:

$$V = (f \times P_v) / \Delta T$$

The air constant  $f = 3.3 \text{ m}^3\text{K}/\text{Wh}$ .

$\Delta T$  is the temperature difference between the ambient temperature of the sub-assembly and that of the air drawn in.

#### Example of readings

- $P_v = 600 \text{ W}$
- air sucked in:  $25 \text{ }^\circ\text{C}$
- permissible ambient temperature of the sub-assembly =  $30 \text{ }^\circ\text{C}$

1.  $\Delta T = T_i - T_u = 30 \text{ }^\circ\text{C} - 25 \text{ }^\circ\text{C} = 5 \text{ K}$
2. From  $P_v = 600 \text{ W}$  to the curve for  $\Delta T = 5 \text{ K}$
3. From the intersection point to the airflow volume  $V = 400 \text{ m}^3/\text{h}$

A41771

## Climate control – 19" fan trays ServicePLUS



### assembly

Fitting of all mechanical, electrical and electronic components by our specialists

### Assembled by professionals. Double benefit!

- No additional charge
- Ready for dispatch within 10 working days



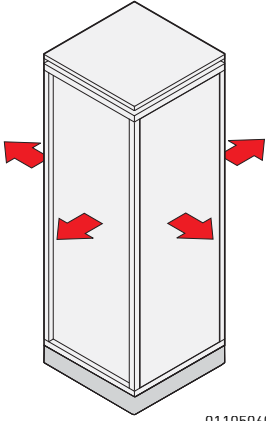
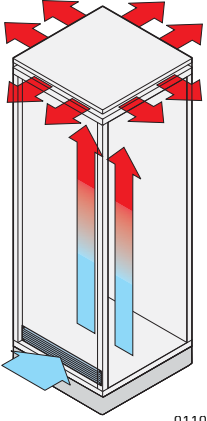
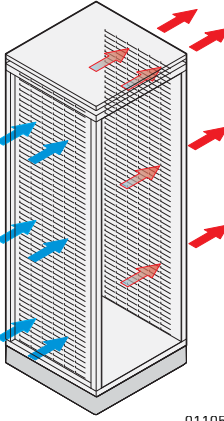
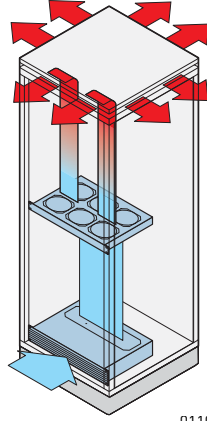
### modification

Custom drillings, cut-outs and special colours for off-the-shelf products

### Small changes. Large impact.

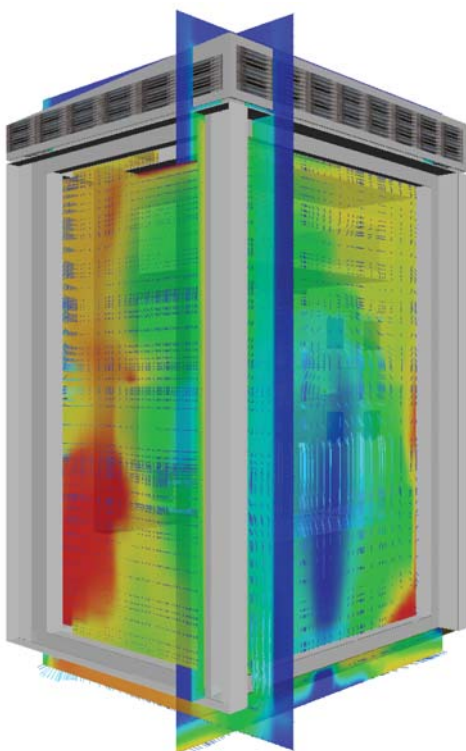
- Download CAD data, send modifications to us
- Ready for dispatch within 15 working days

### Products / cooling concepts

Product	Closed cabinet	Raised cover, ventilation slots	Perforated doors	19" circulation fan, top cover fan
Cooling principle				
Description	<small>01105060</small> Natural convection through thermal radiation	<small>01105058</small> Free convection through top opening	<small>01105056</small> Free convection through openings in doors/rear panels	<small>01105057</small> Cooling with air
Type of protection	≤ IP 55	≤ IP 20	≤ IP 20	≤ IP 20
Noise level approx.	0	0	55 ... 65 dB(A)	34 ... 67 dB(A)
Environmental conditions	$T_i > T_a$	$T_i > T_a$	$T_i > T_a$	$T_i > T_a$
Cooling capacity approx. <sup>1)</sup>	< 500 W	500 W ... 800 W	500 W ... 6000 W <sup>2)</sup>	< 2000 W

<sup>1)</sup> depending on cabinet size, electronic components, location and room cooling concept  
<sup>2)</sup> > 800 W are only possible with own, active cooling through components like servers, etc.  
 $T_i$  = cabinet inner temperature  $T_a$  = cabinet ambient temperature

### Thermal simulation



01103050

#### Project support through state-of-the-art simulation technology

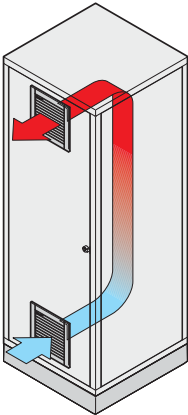
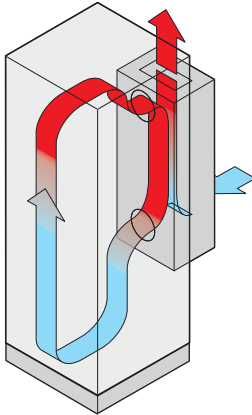
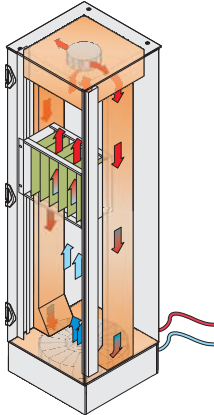
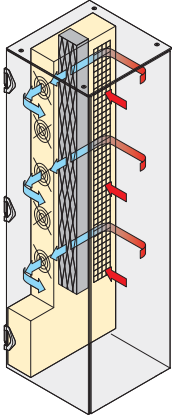
As the packing density and integration density of components increases, the transport of waste heat rapidly becomes more difficult. Analyzing heat transport through thermal paste, flow and heat radiation makes it possible to identify hot spots as early as the design phase. We use state-of-the-art numerical analyses and simulation methods to accomplish this. This allows the analysis and optimization of cooling concepts for anything from an assembly to an entire cabinet system at the preliminary stage. Our cooling specialists would be happy to assist you in finding the right cooling concept for your project

#### Your advantage:

- Analyzing in detail to eliminate thermal problems at the preliminary stage
- Ensuring the high efficiency and reliability of your systems
- Reducing the number of expensive prototypes and tests
- Reducing expenses and development costs

**Climate control – Service**

**Products/cooling concepts**

Product	Air filtered fans	Air conditioners	Air/water heat exchanger (LHX 3)	Air/water heat exchanger (LHX 20/40)
Cooling principle				
Description	01102050 Cooling with air	01105061 Cooling with coolant	01007055 Cooling with water	01005081 Cooling with water
Type of protection	≤ IP 55	≥ IP 55	≥ IP 55	≥ IP 55
Noise level	39 ... 71 dB(A)	60 ... 81 dB(A)	45.2 dB(A)	50 ... 70 dB(A)
Environmental conditions	$T_i > T_a$	$T_a \leq 55 \text{ °C}$	$T_a \leq 70 \text{ °C}$	$T_a \leq 70 \text{ °C}$
Cooling capacity approx. <sup>1)</sup>	< 1500 W	< 17000 W	< 3000 W	< 40000 W

1) depending on cabinet size, electronic components, location and room cooling concept  
 $T_i$  = cabinet inner temperature  $T_a$  = cabinet ambient temperature

**Optimal test equipment**



Climate bay testing

Being part of the Pentair group, Schroff and McLean look back on 50 years of experience and are reknown around the world for their expertise in efficient cooling of industrial facilities and equipment.

Based on our own laboratory test chambers with the most modern equipment in Europe, America and Asia:

- Walk-in climate chamber to test and optimize completely integrated cabinets and systems under different conditions
- Smaller climate chambers to test components
- Airflow and air resistance measurements in a wind tunnel
- Noise level measurements
- Tests in accordance with DIN EN 60529 to determine the type of protection (IP)

Outstanding standard products, flexible custom solutions, global technical support and service add up to a 'cool' combination!

## Appendix – Order notes

### Packaging units

A packaging unit (PU) - e.g. carton, bag - contains the stated quantity. If you order the quantity 1, you will automatically receive the quantity defined as PU.

Example: EMC textile gasket  
See page 5.22  
Part number 21101-853

Quantity (per part number): 10 pieces

Order quantity: . . . . . Delivery quantity:

1 . . . . .	10 pieces
2 . . . . .	20 pieces
3 . . . . .	30 pieces

### Price list

Our price list is available by e-mail from your customer consultant. Please find all contact details at [www.schroff.biz/contact](http://www.schroff.biz/contact).

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**Catalogue request:** [www.schroff.biz/catalogues](http://www.schroff.biz/catalogues)

**Product configurators:** [www.schroff.biz/conf](http://www.schroff.biz/conf)

**Contact details:** [www.schroff.biz/contact](http://www.schroff.biz/contact)

**Product search:** [www.schroff.biz/oneclick](http://www.schroff.biz/oneclick)

**Front Panel Express:** [www.frontpanelexpress.eu](http://www.frontpanelexpress.eu)

**VARISTAR:** [www.varistar.co.uk](http://www.varistar.co.uk)

**Railway technology:** [www.schroff.co.uk/railway](http://www.schroff.co.uk/railway)

**IT Infrastructure:** [www.schroff.co.uk/datacom](http://www.schroff.co.uk/datacom)

### Standard pack quantity (SPQ)

Please take into consideration that deliveries may be carried out in the stated SPQs (SPQ, e.g. 5 pieces, 10 pieces, 50 pieces, etc.). Differing order quantities (e.g. 2 pieces) may be changed to the next possible delivery quantity = Standard Pack Quantity (in this case 10 pieces).

Example: Front horizontal rail  
See page 5.31  
Part number 34560-228

Quantity (per part number): 1 piece  
Standard pack quantity (SPQ): 10 pieces

Order quantity: . . . . . Delivery quantity:

≤ 10 . . . . .	10 pieces
> 10 ≤ 20 . . . . .	20 pieces
> 20 ≤ 30 . . . . .	30 pieces

### Delivery times

Part numbers in bold face type are ready for despatch within 2 working days; part numbers in normal type are ready for despatch within 10 working days.

### Business relations

Schroff is exclusively operating in Business to Business (B2B). Private individuals can buy Schroff products via our sales representatives (see [www.schroff.biz/contact](http://www.schroff.biz/contact)).

### Responsible for contents and print

Schroff GmbH, Marketing Communication,  
D-75334 Straubenhardt, Germany

The data in this catalogue have been thoroughly edited and checked - in assistance with an accredited Quality Management System in accordance with EN ISO 9001:2008.

Faults and spelling mistakes, but mainly changes due to improvements and further developments of our products are subject to change. There is no possibility to claim indemnity/compensation.

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