



Schroff

19"-FAN TRAYS

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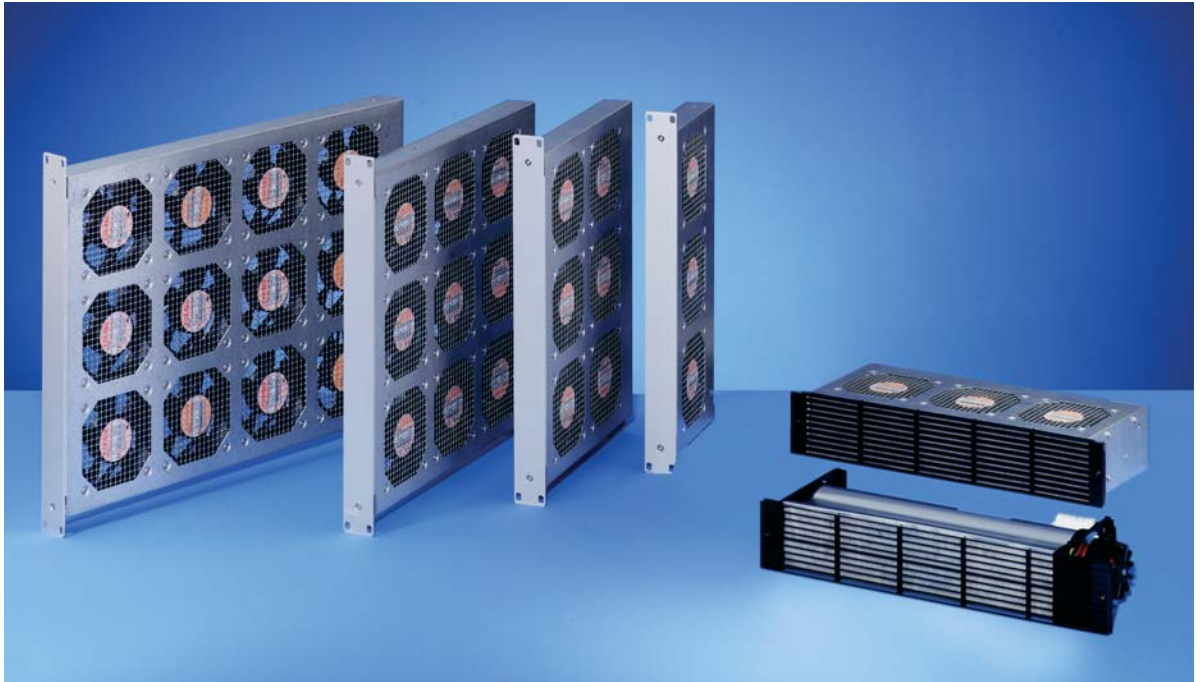
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Climate control – 19" fan trays



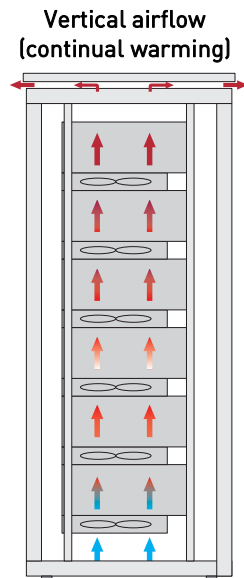
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Standards/Approvals

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

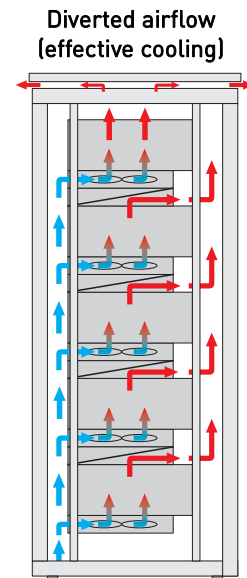
- Mechanical protection to DIN EN ISO 13857
- Contact protection to DIN EN ISO 13857
- Electrical safety to EN 60335 part 1
- Plastics self-extinguishing to UL 94 V0

Airflow



01109055

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



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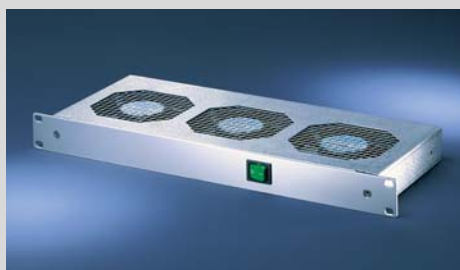
By using the 1 U airflow element, air is introduced from the front and extracted to the rear. Now all sub-assemblies receive the same cooling air.

Climate control – 19" fan trays

Overview 4.4

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_{AC}, 115 V_{AC} or 24 V_{DC}
- CE- approvals



01109002

19" fans

- 19" circulation fan, height 1 U
- 230 V_{AC}, 115 V_{AC} and 24 V_{DC}
- Up to 1000 m³/h
- With/without mains switch or with temperature-dependent speed control



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19" pusher fans

- Tangential fan, height 2 U
- 230 V_{AC} and 115 V_{AC}
- Up to 320 m³/h



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- 19" pusher fan, height 2 U
- 230 V_{AC} and 115 V_{AC}
- Up to 530 m³/h



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- 19" pusher fan, height 3 U
- 230 V_{AC} and 115 V_{AC}
- Up to 570 m³/h
- Variable air outlet with/without pipe connection, upward or to rear



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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

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

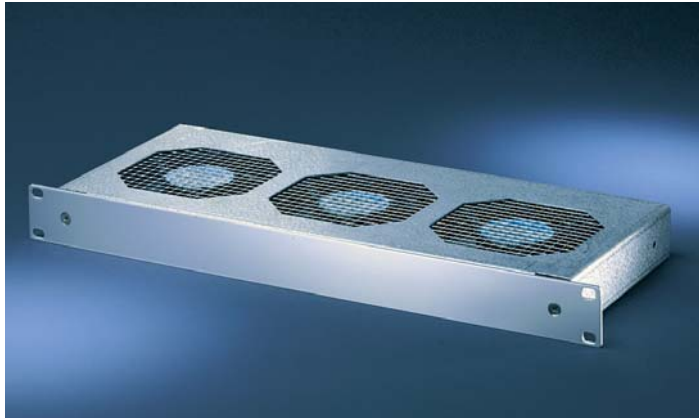
Accessories

- 19" airflow element 4.15
- AC fans 4.16
- DC fans 4.16

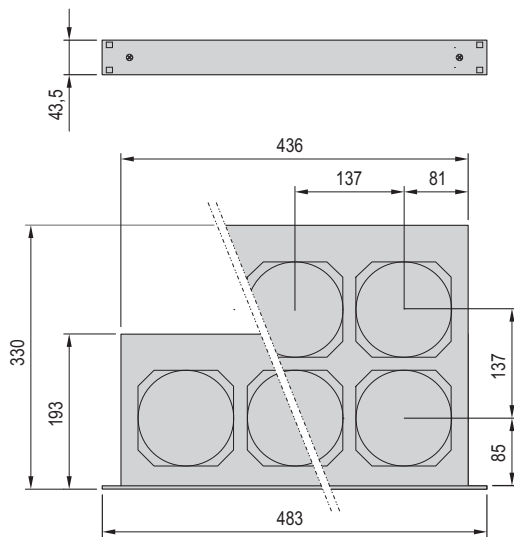
- ServicePLUS ... 4.19

Climate control – 19" fan trays

19" fan 1 U



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KTA44306

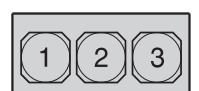
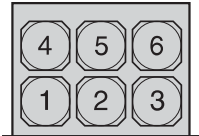
- Mechanical strain relief for mains cables
- Can be adapted to subracks
- Contact protection in accordance with DIN EN ISO 13857



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 _{DC} Part no.	115 V _{AC} Part no.	230 V _{AC} Part no.
 KTA44857	10713-103	10713-102	10713-100
 KTA44858	10713-107	10713-106	10713-104
Replacement fan 1 piece	20713-240	20713-244	20713-243
Side panel connecting bracket between europacPRO subrack and fan, including fixing material kit, PU 4 pieces			21101-954
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



ServicePLUS see page 4.19

Technical data

Voltage	230 V _{AC}	115 V _{AC}	24 V _{DC}
Frequency in Hz	50 60	50 60	-
Number of fans	3/6	3/6	3/6
Airflow volume in m ³ /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 ₁₀ 40 °C	43500		
Lifespan in h L ₁₀ 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



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- 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



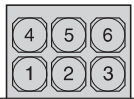
Delivery comprises (ready to connect)

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

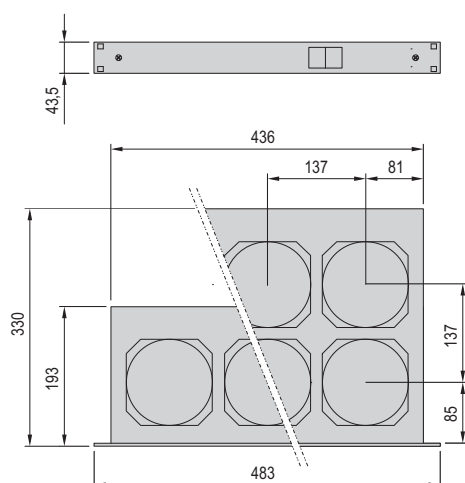
	24 V _{DC} Part no.	115 V _{AC} Part no.	230 V _{AC} Part no.
	10713-111	10713-110	10713-108

KTA44857

	10713-115	10713-114	10713-112
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KTA44858

Replacement fan 1 piece	20713-240	20713-244	20713-243
Side panel connecting bracket between europacPRO subrack and fan, including fixing material kit, PU 4 pieces			21101-954
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
Mains cable, IEC IEC 60320 C14 plug, IEC 60320 C13 socket, 2.5 m, 1 piece			60197-053



KTA45963



ServicePLUS see page 4.19

Technical data

Voltage	230 VAC		115 VAC		24 VDC
Frequency in Hz	50	60	50	60	-
Number of fans	3/6		3/6		3/6
Airflow volume in m ³ /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 ₁₀ 40 °C	43500				
Lifespan in h L ₁₀ 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

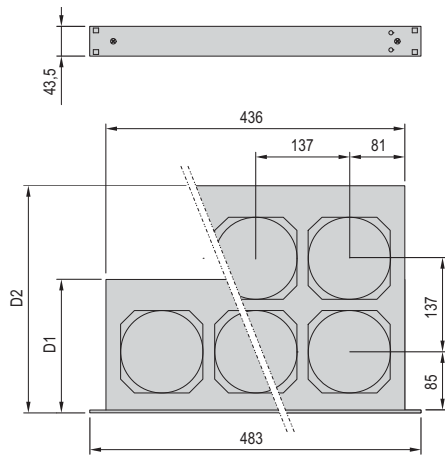
Climate control – 19" fan trays

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

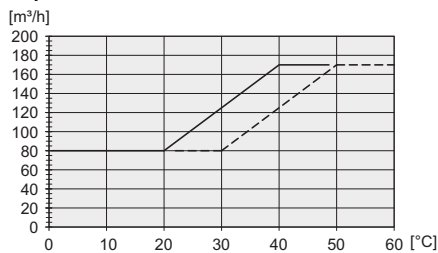


Photo shows 19" fan unit with 3 fans, without switch

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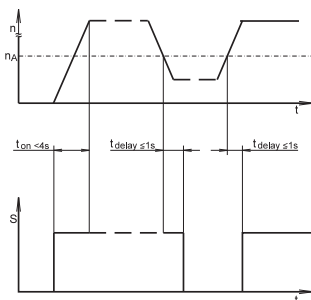


Airflow capacity with one fan



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Monitoring signal



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

ktb43600

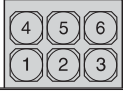
- Low noise through temperature dependent airflow volume
- Range selectable: 20 ... 40 °C and 30 ... 50 °C
- External sensor, at sensor breakage max speed will be set automatically
- Function control with LEDs and via potential-free contact
- Contact protection in accordance with DIN EN ISO 13857
- 2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



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 _{DC}		230 V _{AC}	
	D mm	Without switch Part No.	D mm	With switch Part No. Without switch Part No.
 D1 KTA44857	193	10713-099	250	19713-121 –
 D2 KTA44858	330	10713-098	397	– 19713-006

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Accessories

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

Technical data

Voltage AC version (fans 24 V _{DC})	86 ... 260 V _{AC}	
Voltage DC version	24 V _{DC} (21 ... 27)	
Number of fans	3	6
Max. airflow volume in m³/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 ₁₀ 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

Order Information

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

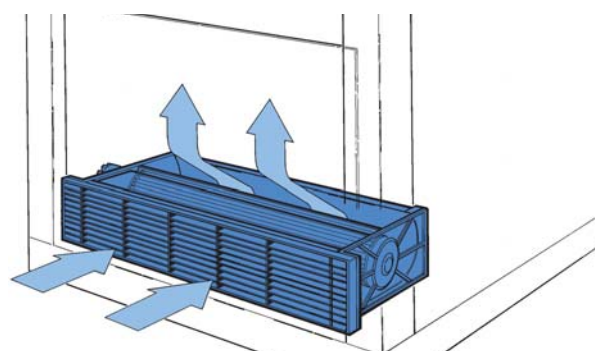
A3532

Dimensions

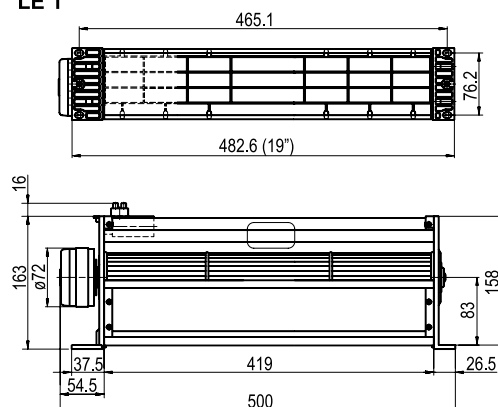
Voltage	115 V _{AC}		230 V _{AC}	
Frequency in Hz	50	60	50	60
Airflow volume in m ³ /h	320	330	320	330
Noise level in dB(A)	59	62	59	62
Max. stat. pressure in Pa	65	70	65	70
Power consumption in W	30	40	37	46
Permissible ambient temperature in °C	-20 ... +65 °C			
Lifespan in h	30000			

Note

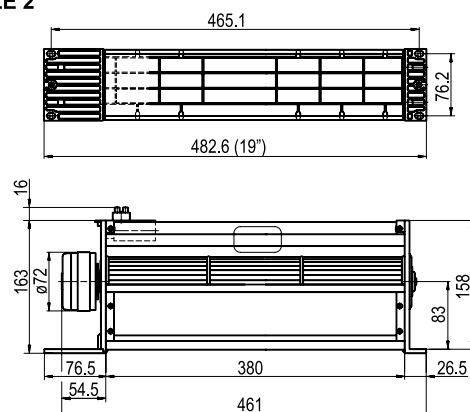
- 24 V_{DC} on request
- Fan dimensioning, see page 4.18



LE 1



LE 2



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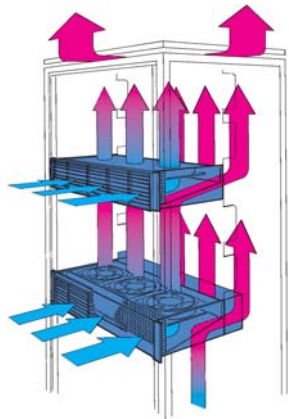
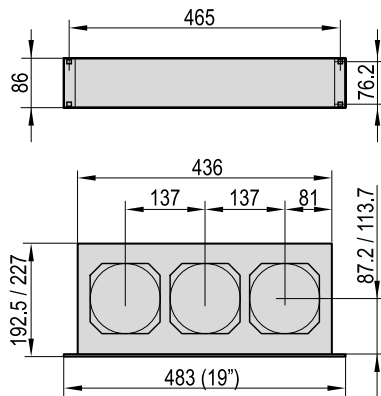
ServicePLUS see page 4.19

Climate control – 19" fan trays

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



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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 _{AC} (fan 24 V _{DC}) 515 m ³ /h Part no.	Front panel, plastic, black				
		24 V _{DC} 515 m ³ /h Part no.	115 V _{AC} 300/330 m ³ /h Part no.	115 V _{AC} 445/530 m ³ /h Part no.	230 V _{AC} 300/330 m ³ /h Part no.	230 V _{AC} 445/530 m ³ /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 _{DC}	24 V _{DC}	115 V _{AC}				230 V _{AC}			
Frequency in MHz	–	–	50	60	50	60	50	60	50	60
Airflow volume in m ³ /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, ¹⁾ at 40 °C, ²⁾ at 55 °C	20000 ²⁾	20000 ²⁾	50000 ¹⁾		20000 ²⁾		50000 ¹⁾		20000 ²⁾	

Climate control – 19" fan trays

Supplementary fans with housing for pusher fan 2 U



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- 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

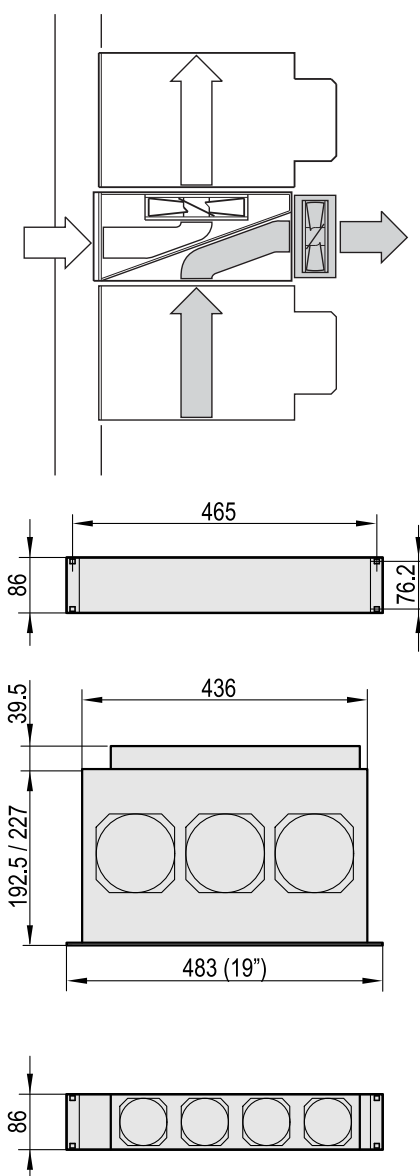
Description	115 V _{AC} Part no.	230 V _{AC} Part no.
Supplementary fans with housing for pusher fan 2 U	10713-532	10713-530

Technical data with 3 fans

Voltage	115 VAC		230 VAC	
Frequency in MHz	50	60	50	60
Airflow volume in m ³ /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_{DC} version available on request
- Fan dimensioning see page 4.18



KTA44447

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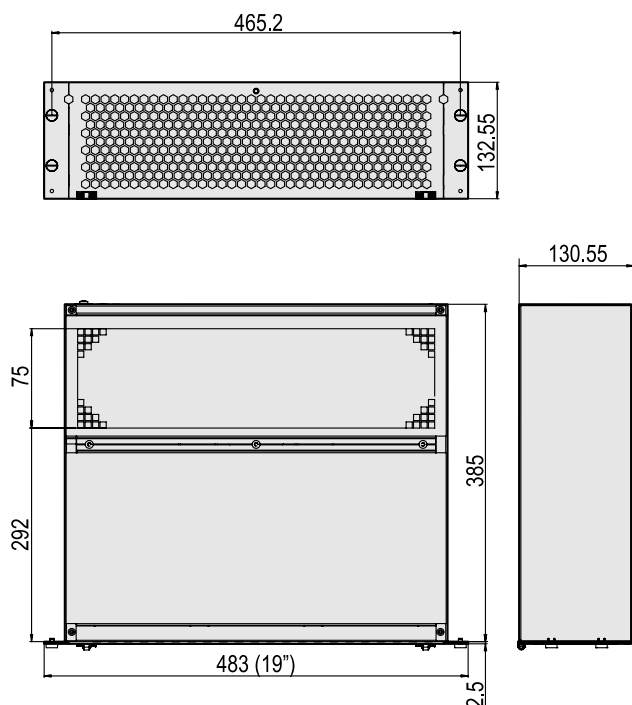
ServicePLUS see page 4.19

Climate control – 19" fan trays

19" pusher fan 3 U



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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 _{AC} Part no.	230 V _{AC} 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

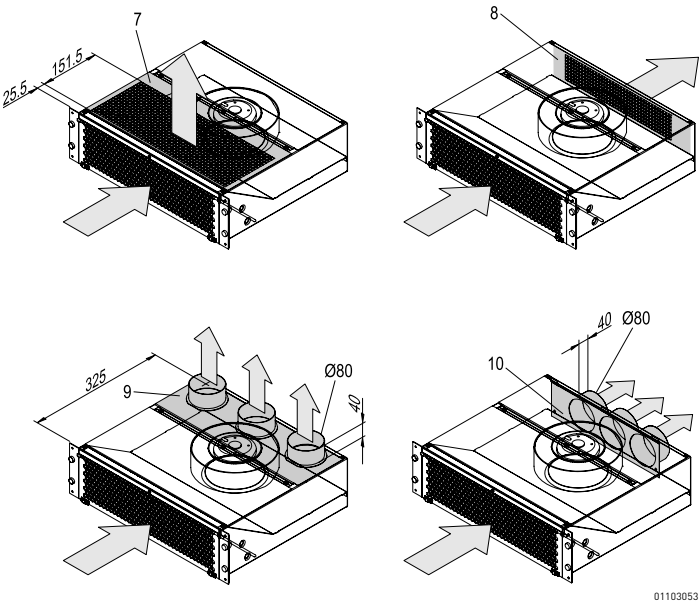
Voltage	115 VAC		230 VAC	
Frequency in MHz	50	60	50	60
Airflow volume in m ³ /h	510	570	510	570
Noise level per fan in dB(A)	62	64	62	64
Max. stat. pressure in Pa	320	410	320	410
Power consumption in W	55	65	58	75
Max. ambient temperatures in °C	-20 ... +50		-20 ... +50	
Life in h at 55 °C	20000		20000	

Note

- Wide input voltage range 90 V ... 260 V_{AC} 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



■ For 19" pusher fan 3 U

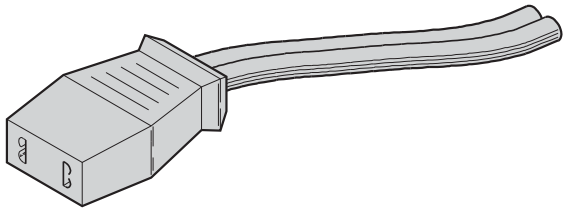
Order Information

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



■ 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 ²), 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	21101-246

Climate control – 19" fan trays

ServicePLUS: Configuration with assembly



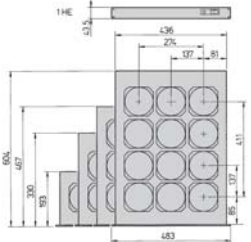
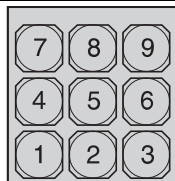
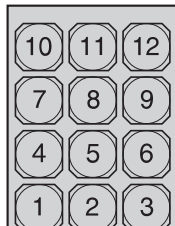
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- You can plan and build up your product yourself using the order information table below
- Dimensions of fan trays
 - Height 1 U
 - Width 19"
 - Depth 193, 300, 467, 604 mm for 3, 6, 9 or 12 fans
- Create your 19" fan trays from individual parts (assembled 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)	Front panel without switch AC (230 V)	DC	Front panel with switch AC (230 V)	DC	Filter mat G 2	Fans
		cover/base plate, St, 1 mm, finish AlZn, with perforation	1 U, Al, 3 mm, anodised; includes cable harness	1 U, Al, 3 mm, anodised; connecting cable, 2.5 m; includes cable harness	1 U, Al, 3 mm, anodised; mains switch, illuminated green; includes cable harness	1 U, Al, 3 mm, anodised; mains switch, illuminated green; connecting cable, 2.5 m; includes cable harness	can only be fitted where fan height is 25 mm	
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
	38	20713-216	20713-220/05	20713-224/05	20713-228/05	20713-236/05	–	4.16
KTA44857								
	25	20713-213	20713-221/05	20713-225/05	20713-229/05	20713-237/05	60713-244	4.16
	38	20713-217	20713-221/05	20713-225/05	20713-229/05	20713-237/05	–	4.16
KTA44858								
	25	20713-214	20713-222/05	20713-226/05	20713-230/05	20713-238/05	60713-245	4.16
	38	20713-218	20713-222/05	20713-226/05	20713-230/05	20713-238/05	–	4.16
kta44859								
	25	20713-215	20713-223/05	20713-227/05	20713-231/05	20713-239/05	60713-246	4.16
	38	20713-219	20713-223/05	20713-227/05	20713-231/05	20713-239/05	–	4.16
kta44860								

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

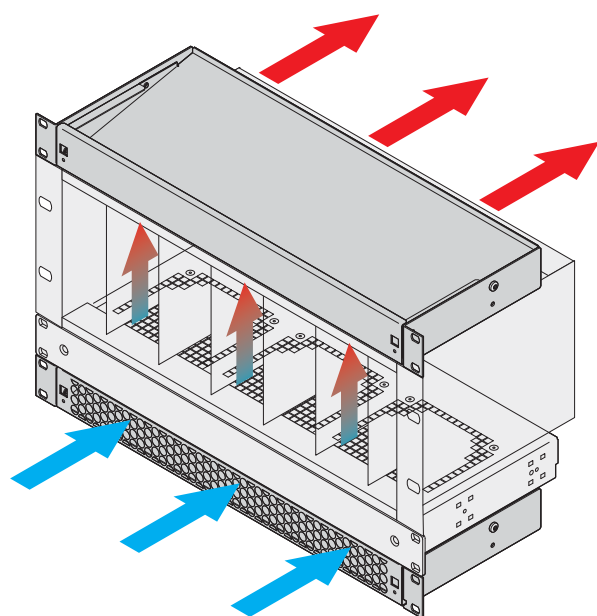


01109001



01109002

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



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

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

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 ³ /h	115 V _{AC} Part no.	230 V _{AC} Part no.
Type A	25	84	20713-146	20713-142
Type B	25	108	20713-147	20700-001
Type C	38	162	20713-244	20713-243
Assembly kit for fan PU 1 kit				21102-013

Dimensions AC fans

Type	Type A		Type B		Type C	
Frequency in Hz	50	60	50	60	50	60
Airflow volume in m ³ /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 ³ /h	Power consumption W	Input voltage V	Part no.
25.5	171	5.3	24	20713-172
38	184	8	12	20713-241
38	184	8	24	20713-240
38	184	8	48	20713-242
Assembly kit for fan PU 1 kit				21102-013

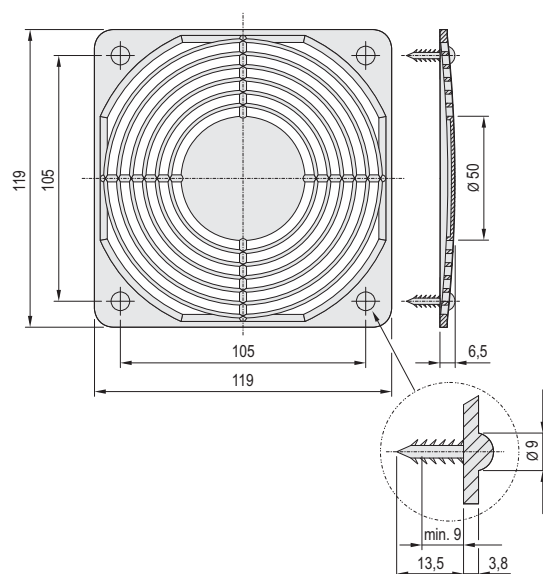
Technical data DC fans

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 ³ /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

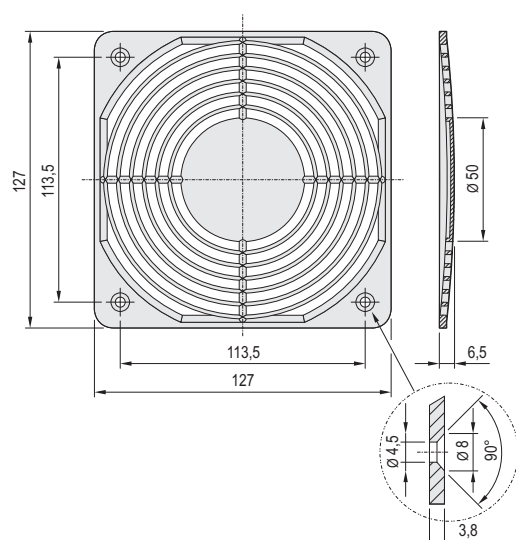
Delivery comprises

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	60225-052

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

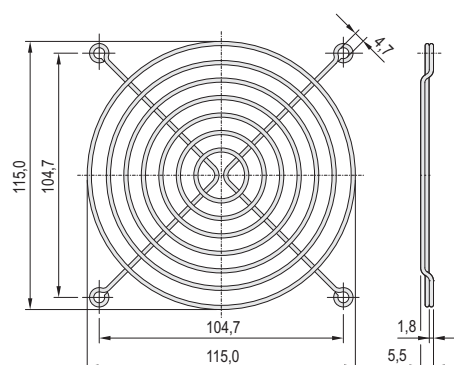
Delivery comprises

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	60225-053
Assembly kit for plastic grille (4 screws, 4 washers, 4 nuts M4), PU 1 set	21102-014

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

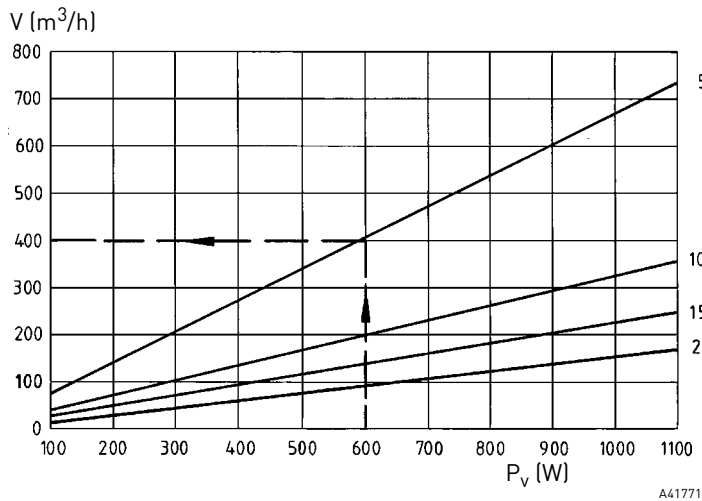
Item	Qty	Description
1	1	St, 1 mm

Order Information

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

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

ΔT 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°C
- permissible ambient temperature of the sub-assembly = 30°C

1. $\Delta T = T_i - T_u = 30^\circ\text{C} - 25^\circ\text{C} = 5 \text{ K}$
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 $V = 400 \text{ m}^3/\text{h}$

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

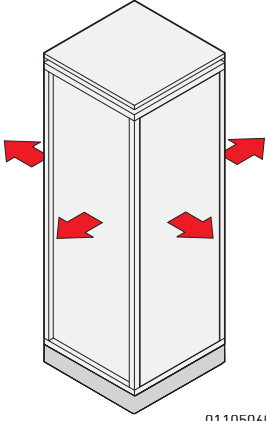
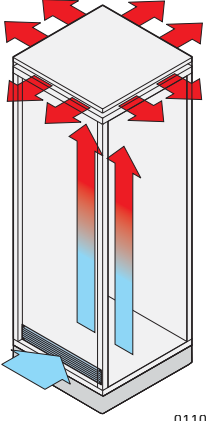
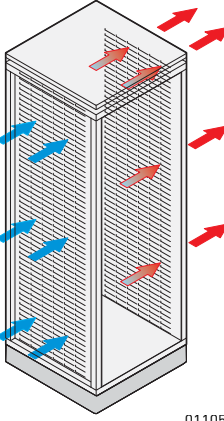
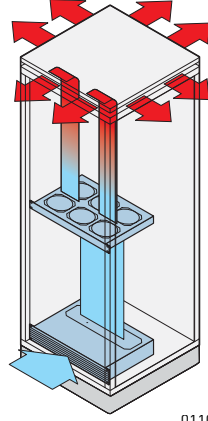
Custom drillings, cut-outs and special colours for off-the-shelf products

Small changes. Large impact.

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

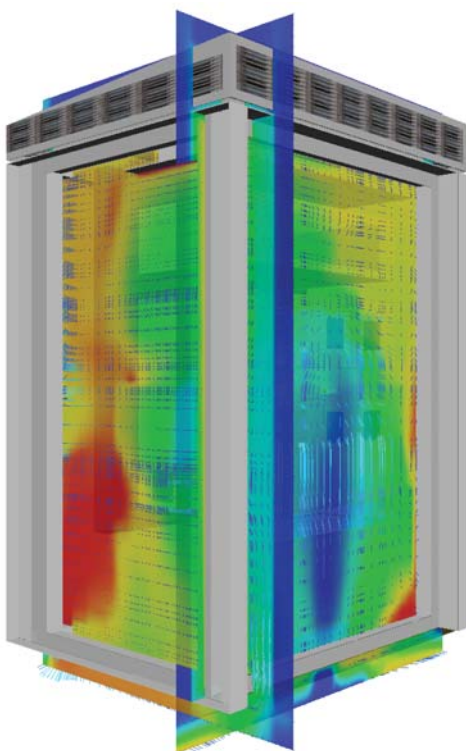
Climate control – Service

Products / cooling concepts

Product	Closed cabinet	Raised cover, ventilation slots	Perforated doors	19" circulation fan, top cover fan
Cooling principle				
Description	01105060 Natural convection through thermal radiation	01105058 Free convection through top opening	01105056 Free convection through openings in doors/rear panels	01105057 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. ¹⁾	< 500 W	500 W ... 800 W	500 W ... 6000 W ²⁾	< 2000 W

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

FloTHERM simulation



01103050

Project support from simulation software

FloTHERM simulation software allows to detect hot spots and problem areas from the concept phase. Cooling concepts for assemblies through to complete case/cabinet systems can thus be analysed in advance.

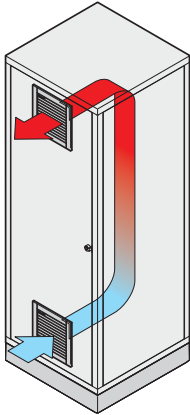
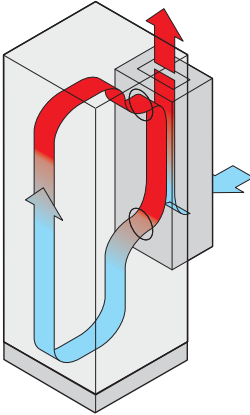
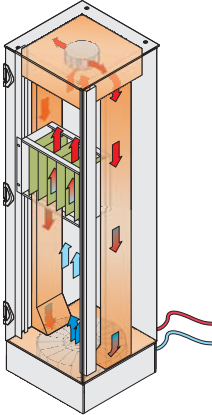
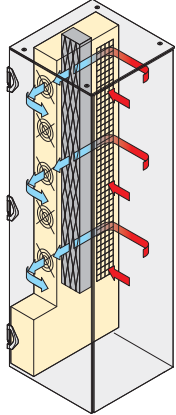
Our FloTHERM experts support you in developing your concept.

Your advantage:

- Extensive analyses eliminate problems during the concept/prototype phase
- Short development times
- High performance and reliability for your systems

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	Cooling with air 01102050	Cooling with coolant 01105061	Cooling with water 01007055	Cooling with water 01005081
Type of protection	$\leq$ IP 55	$\geq$ IP 55	$\geq$ IP 55	$\geq$ IP 55
Noise level	39 ... 71 dB(A)	60 ... 81 dB(A)	45.2 dB(A)	50 ... 70 dB(A)
Environmental conditions	$T_i > T_a$	$T_a \leq 55^\circ\text{C}$	$T_a \leq 70^\circ\text{C}$	$T_a \leq 70^\circ\text{C}$
Cooling capacity approx. ¹⁾	< 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 renowned 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.

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VARISTAR: www.varistar.co.uk

Railway technology: www.schroff.co.uk/railway

IT Infrastructure: 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).

Responsible for contents and print

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

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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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