



Schroff®
MAIN CATALOG

Climate control

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19" fans

- Pusher fans
- Circulation fans
- Cooling capacity up to 2000 W



Air filtered fans

- Simple to fit - just clips in
- Protection type up to IP 55
- Airflow volume up to 770 m³/h



Accessories

- Heaters
- Speed control
- Thermostats
- Hygrostats



36108005 (01192002, 01192009, 01194003, 01108012 00902001 00908001)

Air conditioners and air/air heat exchangers

- Add-on and installation units
- For indoor and outdoor applications
- Cooling capacities up to 15 kW
 - Air conditioners (T-Series) from 200 ... 15970 W
 - Air/air heat exchangers (Climaguard TX-Series) from 25 ... 150 W/K
 - Peltier air conditioners (thermoelectric coolers, TE-Series) from 50 ... 200 W



Air/water heat exchangers

- Complete cabinet solutions
- For industry and data centers
- Cooling capacities up to 40 kW



38108006 01108004 01108002 01102004 00505033 01008020 01006040

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Air conditioners and air/air heat exchangers

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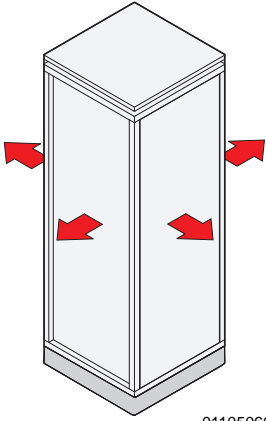
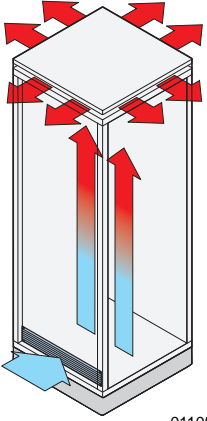
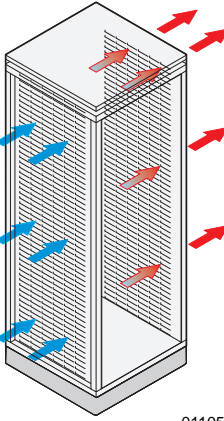
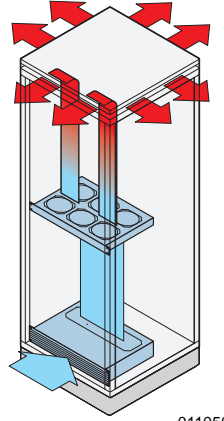
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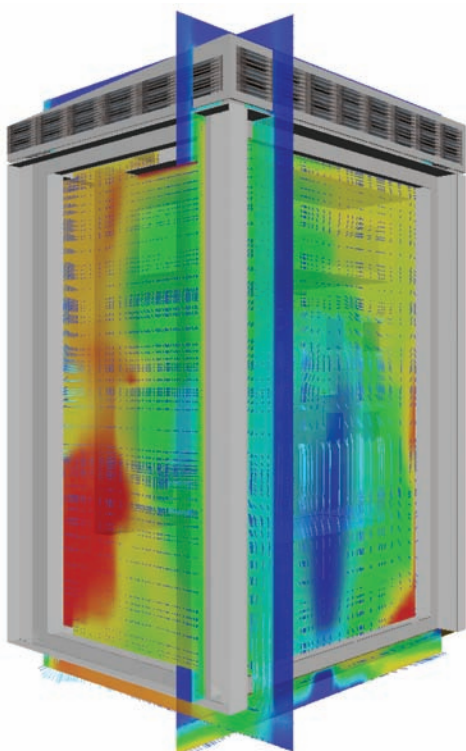
Climate control

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



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.

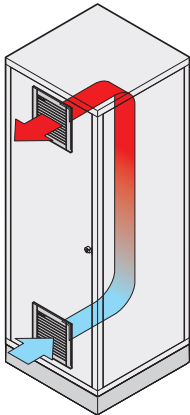
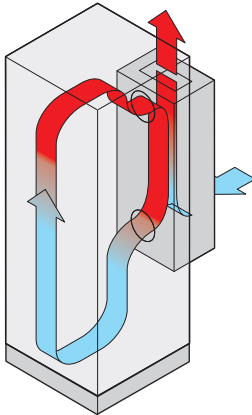
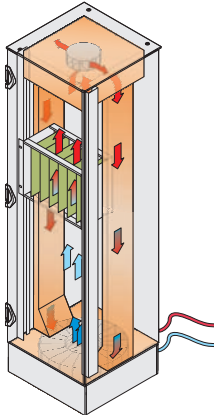
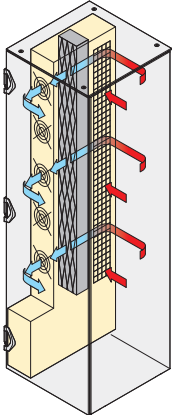
Your advantage:

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

01103050

Climate control

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 54	≥ 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. 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

01112001

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!

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Cabinets 1

Wall mounted cases 2

Accessories for cabinets and wall mounted cases 3

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Desk-top cases 5

Subracks/ 19" chassis ... 6

Front panels, plug-in units .. 7

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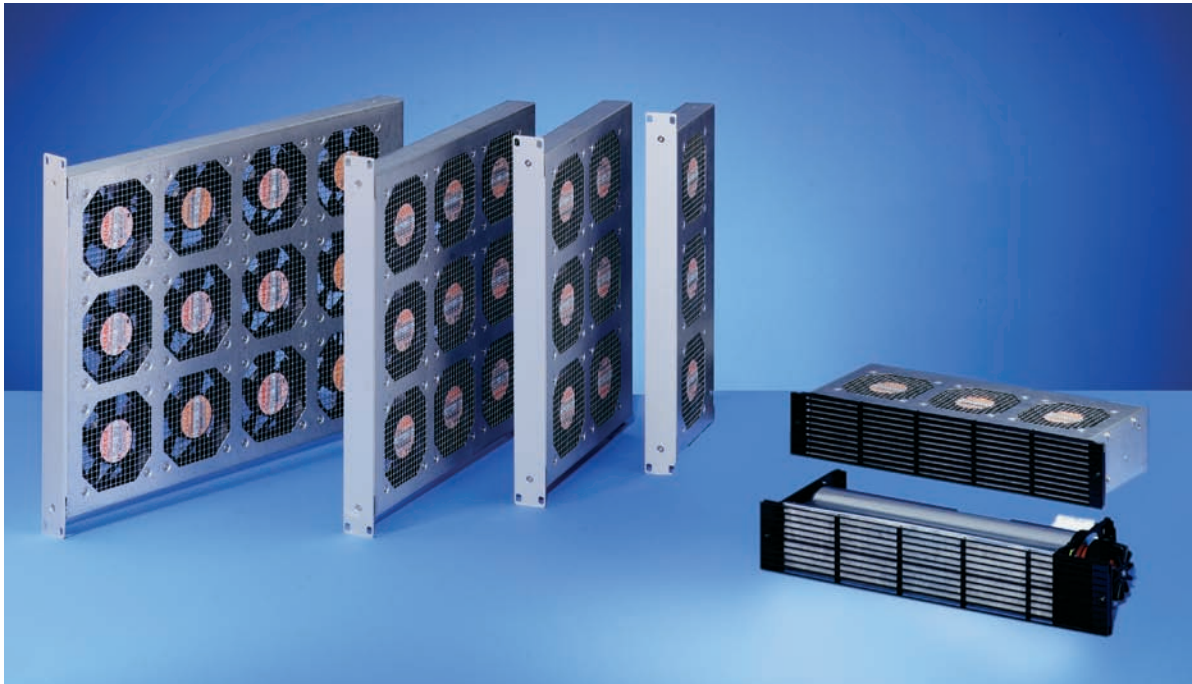
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Climate control - 19" fan trays



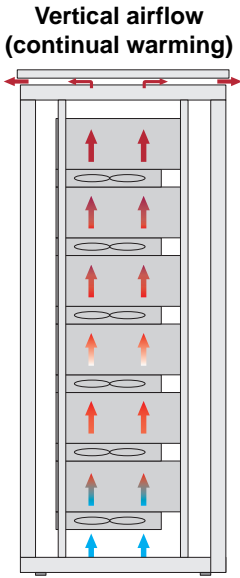
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Standards/Approvals

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

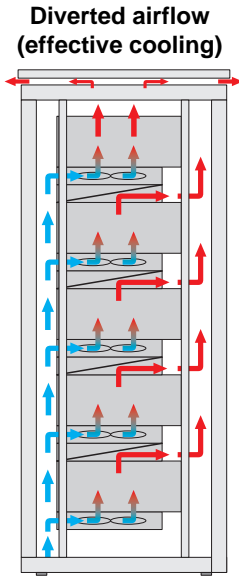
- Mechanical protection to DIN EN ISO 13857
- Contact protection to DIN EN ISO 13857
- Electrical safety to EN 60335 part 1
- Plastics self-extinguishing to UL 94 V0

Airflow



01109055

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



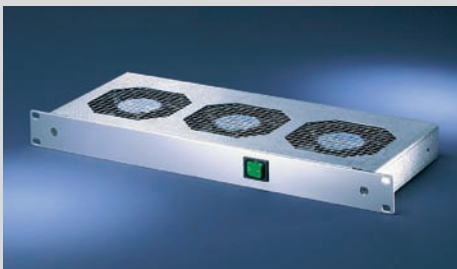
01109054

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.

 Downloads and further important information can be found on the Internet under www.schroff.biz

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



01192009

19" pusher fans

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



01194005

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



01102017

- 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

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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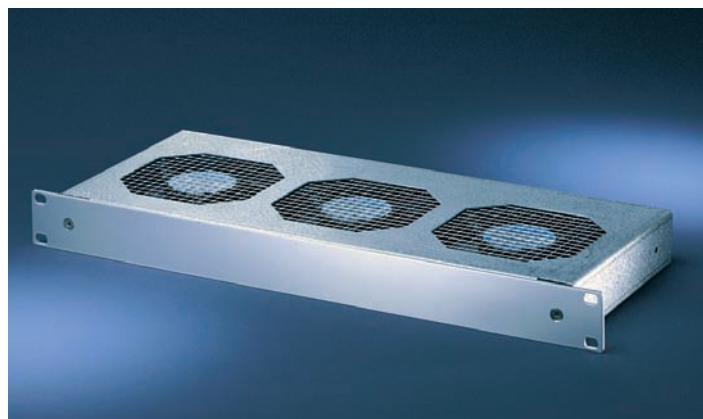
ServicePLUS from page 4.19

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

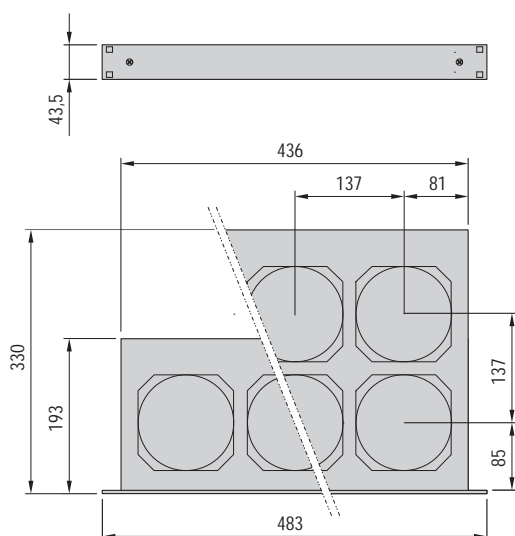
www.schroff.biz/ServicePLUS

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 _{DC} Part no.	115 V _{AC} Part no.	230 V _{AC} Part no.
	10713-103	10713-102	10713-100
	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



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

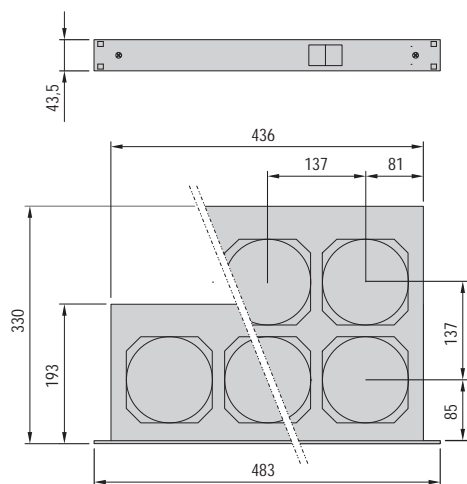
Order Information

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

KTA44857

	10713-115	10713-114	10713-112
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KTA44858



KTA45963

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



ServicePLUS see page 4.19

Technical data

Voltage	230 V _{AC}		115 V _{AC}		24 V _{DC}
	50	60	50	60	-
Frequency in Hz					
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

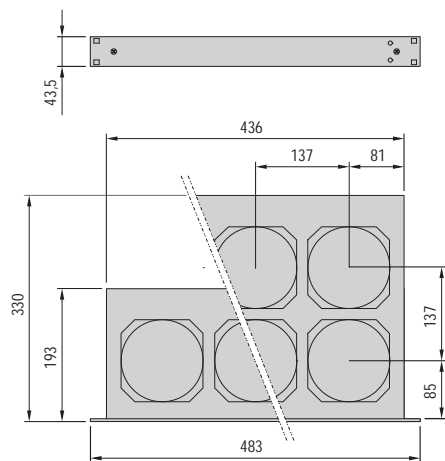
Climate control – 19" fan trays

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

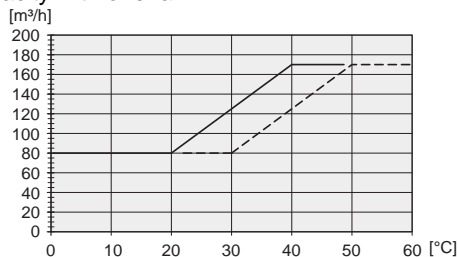


Photo shows 19" fan unit with 3 fans

01198001

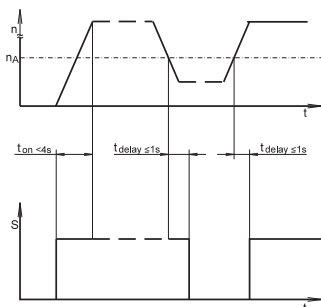


Airflow capacity with one fan



01107050

Control signal



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

01112050

Kla43400

- 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

Description	24 V _{DC}		230 V _{AC}	
	Without switch	With switch	Without switch	With switch
	Part no.	Part no.	Part no.	Part no.
KTA44857	10713-099	19713-121	-	-
KTA44858	10713-098	-	19713-006	-

01107050

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 m ³ /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



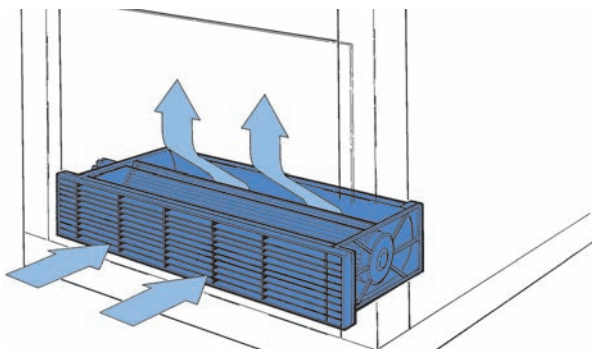
01192009

- 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



A3532

Order Information

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

Dimensions

Voltage	230 V _{AC}		115 V _{AC}	
	50	60	50	60
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	37	46	30	40
Permissible ambient temperature in °C	-20 ... +65 °C			
Lifespan in h	30000			

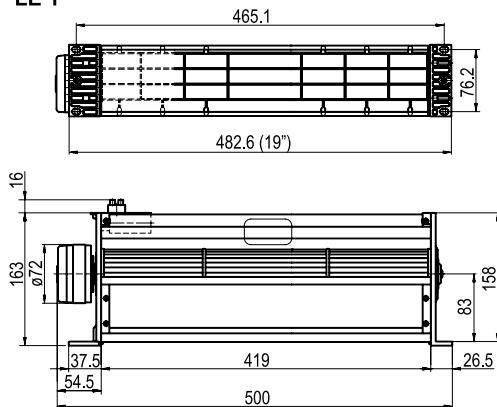
Note

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

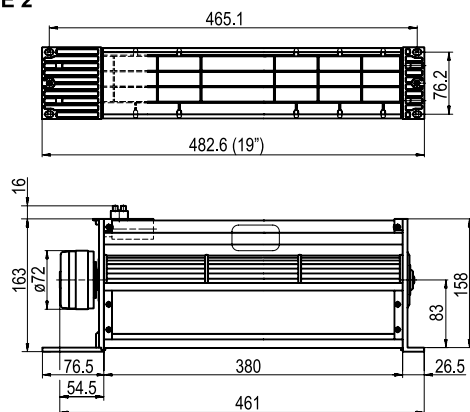


For further information www.schroff.biz/oneclick
oneClick search code = Part no.

LE 1



LE 2



01103056



ServicePLUS see page 4.19

Climate control – 19" fan trays

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



- 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

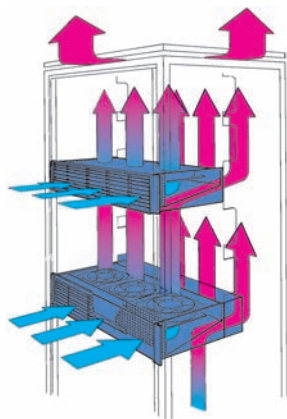
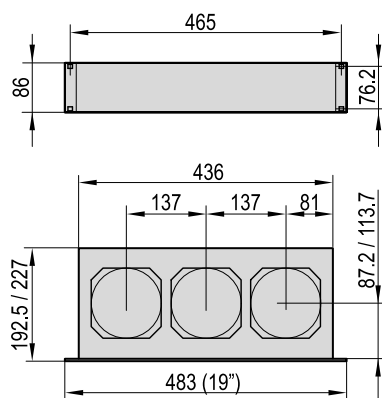


Delivery comprises (ready to connect)

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



For further information www.schroff.biz/oneclick
oneClick search code = Part no.

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	-	10713-528	-	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



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 _{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

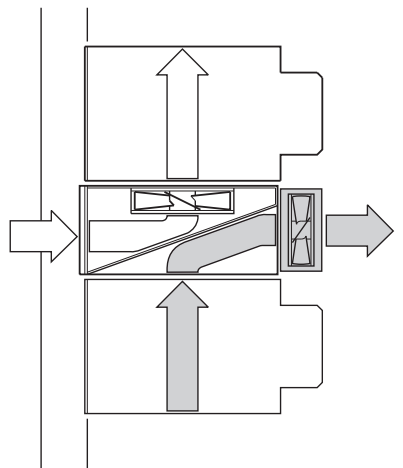
Voltage	115 V _{AC}		230 V _{AC}	
	50	60	50	60
Frequency in MHz	50	60	50	60
Airflow volume in m ³ /h	130	155	130	155
Noise level in dB(A)	51	54	51	54
Max. stat. pressure in Pa	44	62	44	62
Permissible ambient temperature in °C	-40 ... +70		-40 ... +70	
Power consumption in W	30	24	27	21
Life in h at 55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

Note

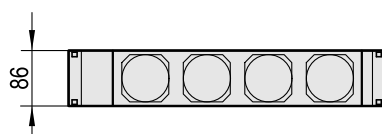
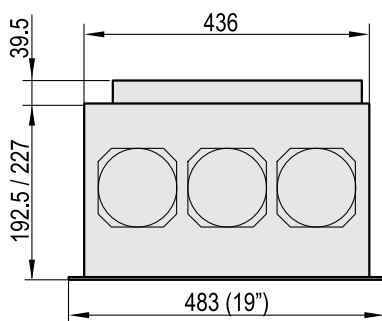
- 24 V_{DC} version available on request
- Fan dimensioning see page 4.18



For further information www.schroff.biz/oneclick
oneClick search code = Part no.



K7A44447



01103055



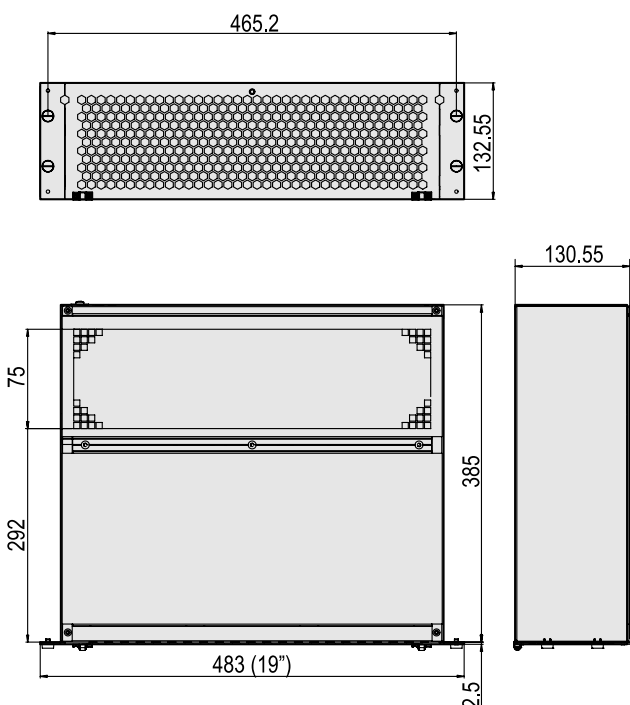
ServicePLUS see page 4.19

Climate control – 19" fan trays

19" pusher fan 3 U



01102017



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 _{AC}	230 V _{AC}
	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 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

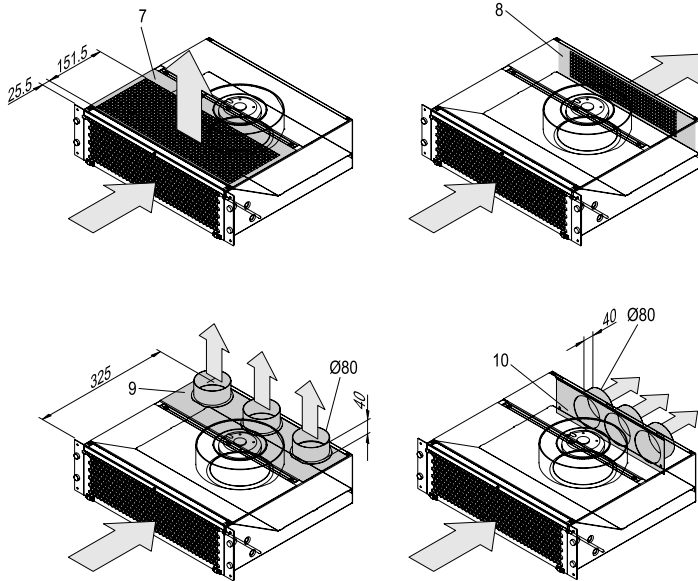
- Wide input voltage range 90 V ... 260 V_{AC} available on request
- Temperature control and function monitoring (alarm via RS 232) on request
- Air deflector plates for other cooling concepts see page 4.13
- Fan dimensioning see page 4.18



For further information www.schroff.biz/oneclick
oneClick search code = Part no.

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

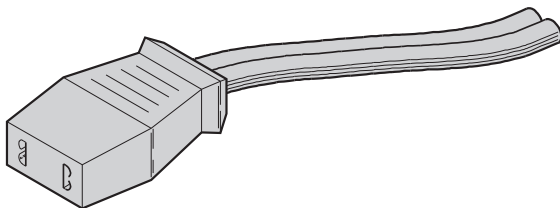


For further information www.schroff.biz/oneclick
oneClick search code = Part no.



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 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



01102012

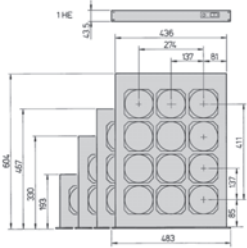
- You can plan and build up your product yourself using the order information table below
- Dimensions of fan trays
 - Height 1 U
 - Width 19"
 - Depth 193, 300, 467, 604 mm for 3, 6, 9 or 12 fans
- Create your 19" fan trays from individual parts (assembled within 10 working days)

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)	Front panel without switch		Front panel with switch		Filter mat G 2	Fans
		AC (230 V)	DC	AC (230 V)	DC		
	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	
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
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
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
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



a44537

KTA44857

KTA44858

kta44859

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

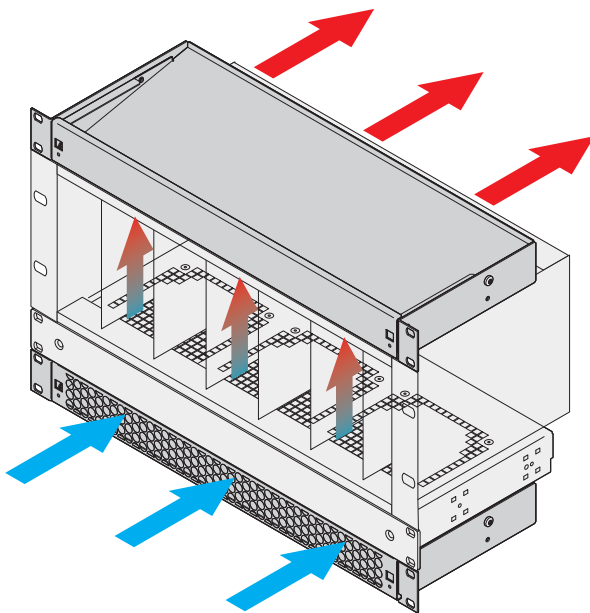


01109001



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



For further information www.schroff.biz/oneclick
oneClick search code = Part no.

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	
	50	60	50	60	50	60
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 x 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

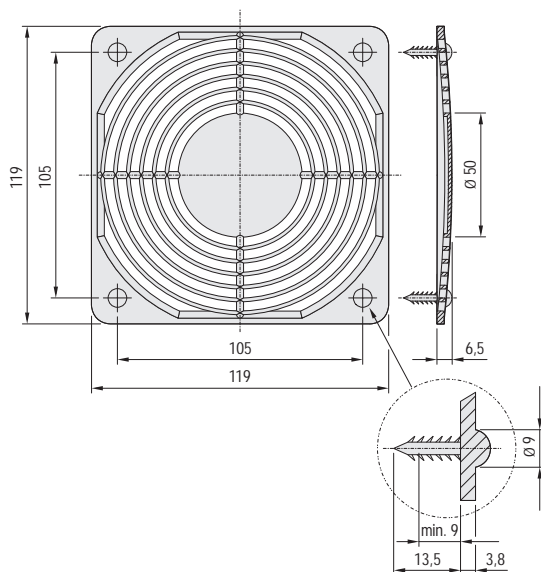
Technical data DC fans

Voltage in VDC	24	12	24	48
Dimensions: height in mm (width 119 mm x 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



- 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

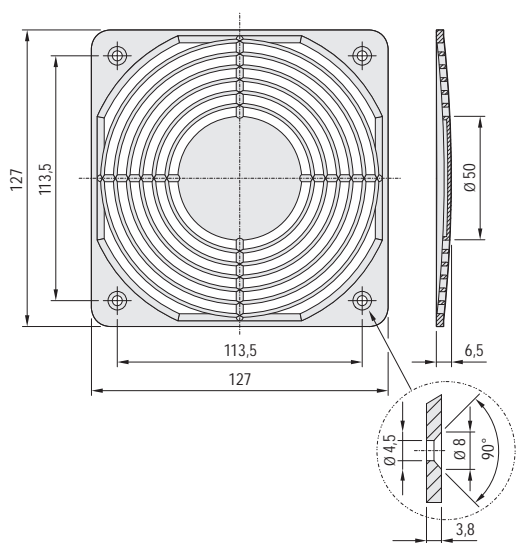
Order Information

Description	Part no.
Protective grille, plastic, to snap-in	60225-052



For further information www.schroff.biz/oneclick
oneClick search code = Part no.

Protective grille, plastic, to screw-on



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

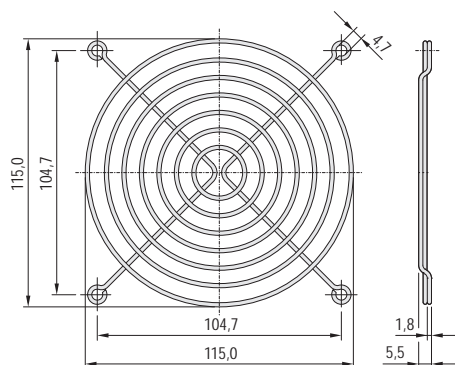
Delivery comprises

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



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

Delivery comprises

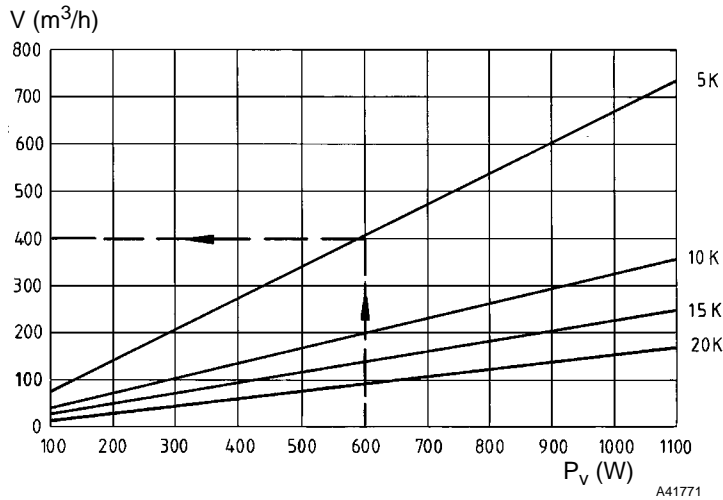
Item	Qty	Description
1	1	St, 1 mm

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: $25 \text{ }^\circ\text{C}$
- 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 $V = 400 \text{ m}^3/\text{h}$

Climate control – 19" fan trays ServicePLUS



assembly

Assembled by professionals. Double benefit!

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

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



modification

Small changes. Large impact.

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

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

- Overview 0
- Cabinets 1
- Wall mounted cases 2
- Accessories for cabinets and wall mounted cases 3
- Climate control 4**
- Desk-top cases 5
- Subracks/ 19" chassis ... 6
- Front panels, plug-in units .. 7
- Systems 8
- Power supply units 9
- Backplanes .. 10
- Connectors, front panel component system 11
- Appendix 12

Climate control – Air filtered fan



01105012



Simple to fit without tools by clipping in (can also be bolted)

01108014



Easy tool-less change of filter mat

01108015



Fluted filter to increase degree of ingress protection from IP 54 to IP 55

01108016



Easy tool-less wiring with spring clamp connector

01108013


Downloads and further important information can be found on the Internet under www.schroff.biz

Air filtered fans, ingress protection from IP 54 to IP 55 in accordance with IEC 60529

- Simple to fit without tools by clipping in (can also be bolted)
- Easy conversion from pressure to suction operation
- Easy tool-less change of filter mat
- 7 performance classes with 6 different assembly dimensions

How to dimension air filtered fans 4.22

Reading example 4.22

EMC solutions. . . 4.22

Air filtered fans

FL 100 4.23

FL 200 4.24

FL 225 4.25

FL 250 4.26

FL 300 4.27

FL 500 4.28

FL 600 4.29



Air filtered fans

- Airflow capacity of 25 m³/h ... 770 m³/h (FL 100 ... FL 600)
- 3 supply voltages (230 V_{AC}, 115 V_{AC}, 24 V_{DC})
- Outlet/inlet filter
- Fluted filter to increase degree of ingress protection from IP 54 to IP 55
- Side by side mounting of several air filtered fans is possible

Air filtered fans

01108017



Outlet/inlet filters

01108026



Fluted filters

01108016



ServicePLUS

- e.g. special colours
- e.g. other cabinet dimensions
- e.g. EMC solutions
- e.g. custom solutions

www.schroff.biz/ServicePLUS

30407004

Climate control – Air filtered fans



Air filtered fan calculations

To establish the size of the air-filtered fan required, calculate the air throughput necessary to dissipate the amount of heat contained in the cabinet.

The necessary airflow volume (at sea level) is calculated thus:

$$V = f \times (P_V - P_S) / \Delta T \text{ with}$$

V = airflow volume

f = air constant = 3.3 m³ K/Wh

P_V = thermal power loss

(sum of heat emitted by the equipment in the cabinet)

P_S = radiant power

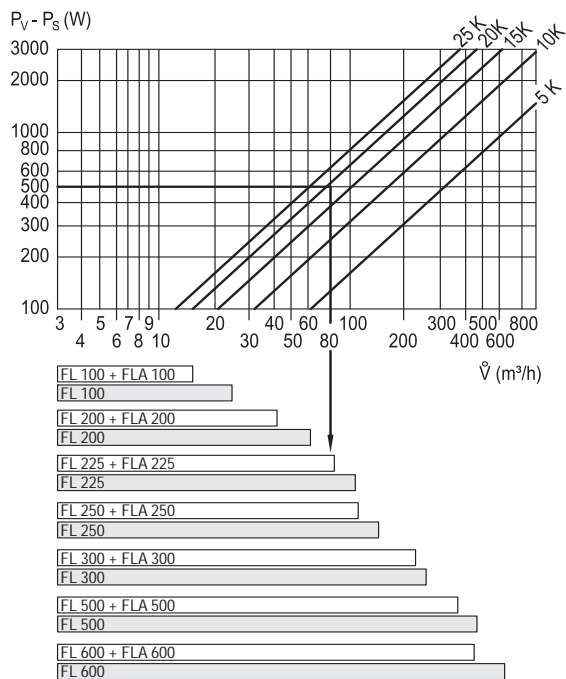
(heat that is radiated from the cabinet

without additional ventilation)

ΔT = temperature difference between the air drawn in (ambient temperature T_U) and the exhaust air (internal cabinet temperature T_i),

$$\Delta T = T_i - T_U$$

01108017



kit45245

Reading example

The devices in the cabinet produce e.g. a power loss of 840 W. Of these 840 W, the cabinet releases 340 W to the environment via its surfaces. The air sucked in from outside the cabinet has a temperature of 20 °C. A maximum temperature of 40 °C is to be permitted in the cabinet.

So which air filtered fan should be employed?

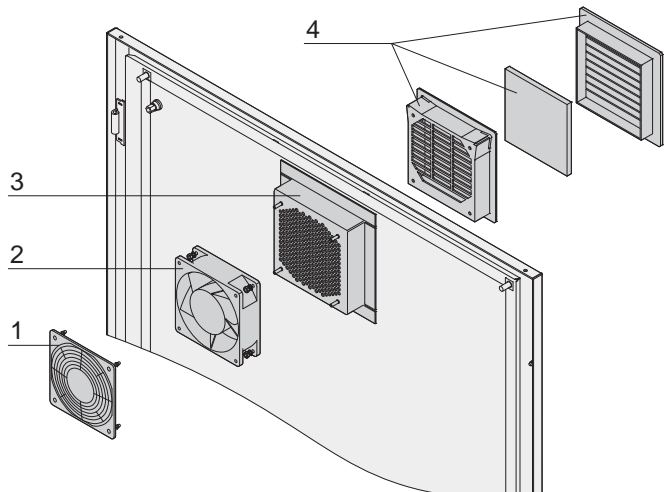
- $P_V = 840$ W, $P_S = 340$ W, read-off point $P_V - P_S = 500$ W
- $\Delta T = T_i - T_a = 40$ °C - 20 °C = 20 °C = 20 K
- On the characteristic for 20 K we obtain, at $P_V - P_S = 500$ W, a minimum necessary airflow volume of $V = 80$ m³/h.
- An FL 250 air filtered fan should be used that gives an airflow volume of 131 m³/h or, if used in combination with the FLA 250 exhaust filter, of 95 m³/h.

EMC solutions

- EMC shielding in accordance with your requirements
- Customised developments

Delivery comprises

Item	Description
1	Protective fan grille
2	Fan
3	EMC hood
4	FLA outlet/inlet filter



01108070

Climate control – Air filtered fans

Air filtered fan FL 100



01108018

- Airflow volume 25 m³/h
- Converts simply from push to pull operation
- Ingress protection IP 54, NEMA type 12
- Simple to fit without tools by clipping in (can also be bolted)



Delivery comprises (completely assembled)

Item	Qty	Description
1	1	Front grille and case, plastic, ABS, RAL 7035, self-extinguishing, UL 94 V-0
2	1	Filter, filter class G 3 (EN 779)
3	1	Fan
4	1	2 wire connection, length 310 mm

Order Information

Description	24 V _{DC} Part no.	115 V _{AC} Part no.	230 V _{AC} Part no.
Air filtered fan FL 100	60715-142	60715-141	60715-140
Air outlet/inlet filter FLA 100 (items 1 + 2 included), 1 piece			60715-156
Replacement filter IP 54 for FL 100 and FLA 100, filter class G 3 (EN 779), PU 5 pieces			60715-182



Air outlet/inlet filter FLA 100

01108019



Replacement filter IP 54

01108020

Technical data

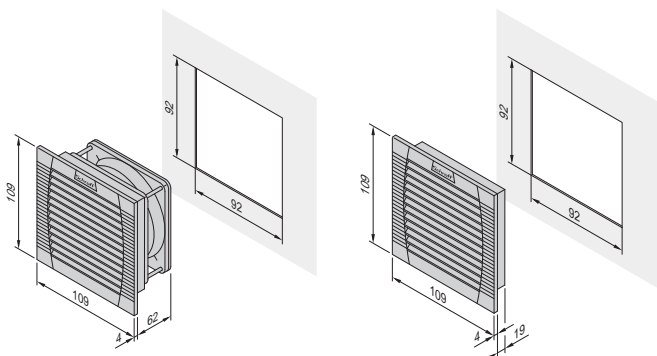
Voltage	230 V _{AC}	115 V _{AC}	24 V _{DC}
Frequency	50/60 Hz	50/60 Hz	DC
Airflow volume with filter (free blowing)	25/29 m ³ /h	25/29 m ³ /h	25 m ³ /h
Combination FL + FLA	16/18 m ³ /h	16/18 m ³ /h	16 m ³ /h
Max. static pressure	38 Pa	38 Pa	38 Pa
Noise level (in accordance with EN ISO 3741, 50 Hz)	33 dB(A)	33 dB(A)	33 dB(A)
Operating temperatures	-15 ... +55 °C	-15 ... +55 °C	-15 ... +55 °C
Power consumption	12/11 W	11/11 W	2.4 W
Filter efficiency	88 %	88 %	88 %
MTBF at 40 °C	40000 h	40000 h	80000 h
Approvals	CE, UL, cUL, GOST		

Note

- Mounting for sheet thicknesses from 1 to 3 mm
- Multiple fan solution on request
- Dimensions, cut-outs and tolerances see user manual:
please go to www.schroff.biz/oneclick and enter part number



For further information www.schroff.biz/oneclick
oneClick search code = Part no.



01108057

01108058

Air filtered fan FL 100

Air outlet/inlet filter FLA 100

Sheet thicknesses 1 ... 2 mm - cut-out 92 x 92 mm;
Sheet thicknesses >2 ... 3 mm - cut-out 93 x 93 mm

Climate control – Air filtered fans

Air filtered fan FL 200



01108018

- Airflow volume 61 m³/h
- Converts simply from push to pull operation
- Ingress protection IP 54, with fluted filter IP 55, NEMA type 12
- Simple to fit without tools by clipping in (can also be bolted)



Delivery comprises (Completely assembled)

Item	Qty	Description
1	1	Front grille and case, plastic, ABS, RAL 7035, self-extinguishing, UL 94 V-0
2	1	Filter, filter class G3 (EN 779)
3	1	Fan
4	1	Connection AC (terminal strip), connection DC (2 wires, 310 mm long)

Order Information

Description	24 V _{DC} Part no.	115 V _{AC} Part no.	230 V _{AC} Part no.
Air filtered fan FL 200	60715-145	60715-144	60715-143
Air outlet/inlet filter FLA 200 (items 1 + 2 included), 1 piece			60715-157
Replacement filter IP 54 for FL 200 and FLA 200, filter class G 3 (EN 779), PU 5 pieces			60715-183
Fluted filter IP 55 for FL 200 and FLA 200, filter class G 4 (EN 779), PU 5 pieces			60715-187



01108019 01108021

Air outlet/inlet filter FLA 200

Fluted filter IP 55



01108020

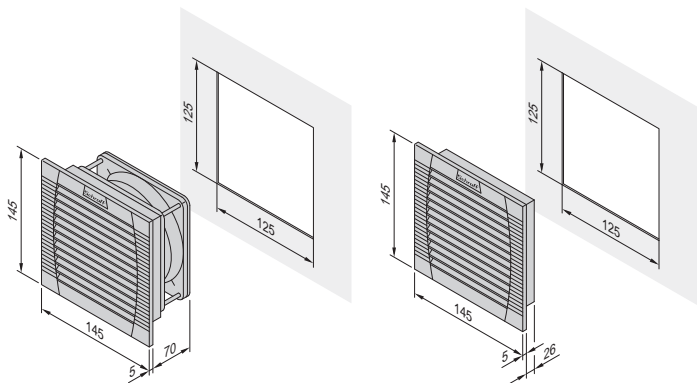
Replacement filter IP 54

Technical data

Voltage	230 V _{AC}	115 V _{AC}	24 V _{DC}
Frequency	50/60 Hz	50/60 Hz	DC
Airflow volume with IP 54 filter (free blowing)	61/70 m ³ /h	61/70 m ³ /h	61 m ³ /h
Airflow volume with IP 55 filter (free blowing)	56/64 m ³ /h	56/64 m ³ /h	56 m ³ /h
Combination FL + FLA IP 54	44/52 m ³ /h	44/52 m ³ /h	44 m ³ /h
Combination FL + FLA IP 55	40/46 m ³ /h	40/46 m ³ /h	40 m ³ /h
Max. static pressure IP 54	60 Pa	60 Pa	60 Pa
Max. static pressure IP 55	57 Pa	57 Pa	61 Pa
Noise level in accordance with EN ISO 3741, 50 Hz)	44 dB(A)	44 dB(A)	44 dB(A)
Max. ambient temperature	15 ... +55 °C	-5 ... +55 °C	-25 ... +55 °C
Power consumption	19/18 W	20/20 W	5 W
Filter efficiency IP 54	83 %	83 %	83 %
Filter efficiency IP 55	91 %	91 %	91 %
MTBF at 40 °C	40000 h	40000 h	80000 h
Approvals	CE, UL, cUL, GOST		

Note

- Mounting for sheet thicknesses from 1 to 3 mm
- Multiple fan solution on request
- Dimensions, cut-outs and tolerances see user manual: please go to www.schroff.biz/oneclick and enter part number



01108059 01108060

Air filtered fan FL 200

Air outlet/inlet filter FLA 200

Sheet thicknesses 1 ... 2 mm - cut-out 125 x 125 mm;
Sheet thicknesses >2 ... 3 mm - cut-out 126 x 126 mm



For further information www.schroff.biz/oneclick
oneClick search code = Part no.

Climate control – Air filtered fans

Air filtered fan FL 225



01108022

- Airflow volume 110 m³/h
- Converts simply from push to pull operation
- Ingress protection IP 54, with fluted filter IP 55, NEMA type 12



Delivery comprises (completely assembled)

Item	Qty	Description
1	1	Front grille and case, plastic, ABS, RAL 7035, self-extinguishing, UL 94 V-0
2	1	Filter, filter class G 3 (EN 779)
3	1	Fan
4	1	Connection AC (terminal block), DC (spring terminal strip)

Order Information

Description	115 V _{AC} Part no.	230 V _{AC} Part no.
Air filtered fan FL 225	60715-147	60715-146
Air outlet/inlet filter FLA 225 (items 1 + 2 included), 1 piece		60715-158
Replacement filter IP 54 for FL 225 and FLA 225, filter class G 3 (EN 779), PU 5 pieces		60715-184
Fluted filter IP 55 for FL 225 and FLA 225, filter class G 4 (EN 779), PU 5 pieces		60715-188



01108019 01108021

Air outlet/inlet filter FLA 225 Fluted filter IP 55



01108020

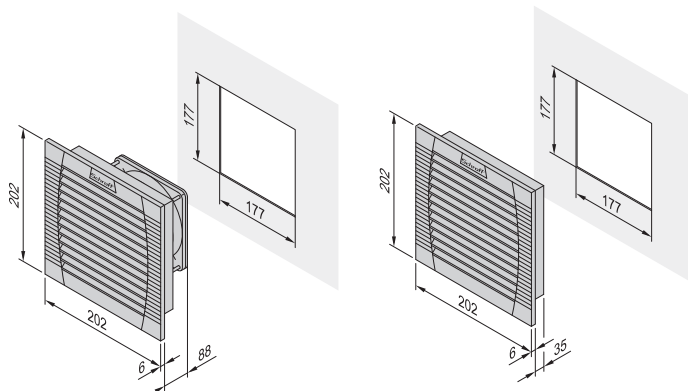
Replacement filter IP 54

Technical data

Voltage	230 V _{AC}	115 V _{AC}
Frequency	50/60 Hz	50/60 Hz
Airflow volume with IP 54 filter (free blowing)	110/125 m ³ /h	110/125 m ³ /h
Airflow volume with IP 55 filter (free blowing)	100/110 m ³ /h	100/110 m ³ /h
Combination FL + FLA IP 54	82/93 m ³ /h	83/92 m ³ /h
Combination FL + FLA IP 55	55/64 m ³ /h	55/64 m ³ /h
Max. static pressure IP 54	66 Pa	66 Pa
Max. static pressure IP 55	61 Pa	61 Pa
Noise level (in accordance with EN ISO 3741, 50 Hz)	40 dB(A)	40 dB(A)
Max. ambient temperature	-15 ... +55 °C	-15 ... +55 °C
Power consumption	19/18 W	20/20 W
Filter efficiency IP 54	88 %	88 %
Filter efficiency IP 55	91 %	91 %
MTBF at 40 °C	40000 h	40000 h
Approvals	CE, UL, cUL, GOST	

Note

- Mounting for sheet thicknesses from 1 to 3 mm
- Multiple fan solution on request
- Dimensions, cut-outs and tolerances see user manual:
please go to www.schroff.biz/oneclick and enter part number



01108061 01108062

Air filtered fan FL 225 Air outlet/inlet filter FLA 225
Sheet thicknesses 1 ... 2 mm - cut-out 177 x 177 mm;
Sheet thicknesses >2 ... 3 mm - cut-out 178 x 178 mm



For further information www.schroff.biz/oneclick
oneClick search code = Part no.

Climate control – Air filtered fans

Air filtered fan FL 250



01108022

- Airflow volume 156 m³/h
- Converts simply from push to pull operation
- Ingress protection IP 54, with fluted filter IP 55, NEMA type 12
- Simple to fit without tools by clipping in (can also be bolted)



Delivery comprises (completely assembled)

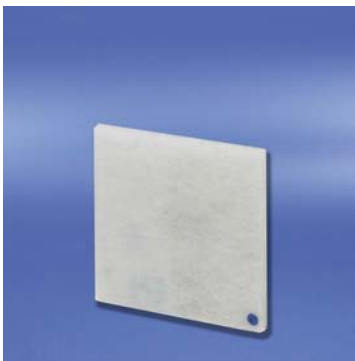
Item	Qty	Description
1	1	Front grille and case, plastic, ABS, RAL 7035, self-extinguishing, UL 94 V-0
2	1	Filter, filter class G 3 (EN 779)
3	1	Fan
4	1	Connection spring terminal strip



01108019 01108021

Air outlet/inlet filter FLA 250/300

Fluted filter IP 55



01108020

Replacement filter IP 54

Order Information

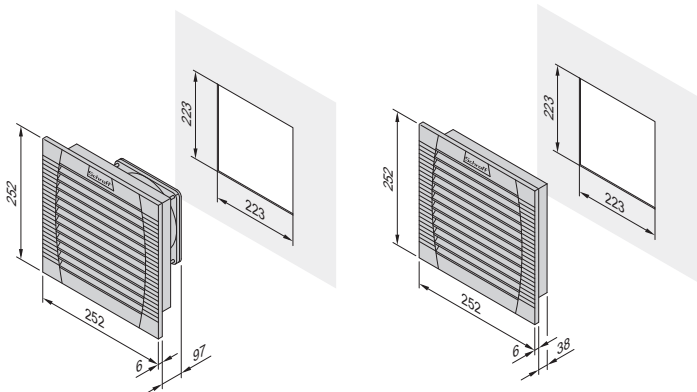
Description	115 V _{AC}	230 V _{AC}
	Part no.	Part no.
Air filtered fan FL 250	60715-149	60715-148
Air outlet/inlet filter FLA 250/300 (items 1 + 2 included), 1 piece		60715-159
Replacement filter IP 54 for FL 250/300 and FLA 250/300, filter class G 3 (EN 779), PU 5 pieces		60715-185
Fluted filter IP 55 for FL 250/300 and FLA 250/300, filter class G 4 (EN 779), PU 5 pieces		60715-189

Technical data

Voltage	230 V _{AC}	115 V _{AC}
Frequency	50/60 Hz	50/60 Hz
Airflow volume with IP 54 filter (free blowing)	156/171 m ³ /h	151/170 m ³ /h
Airflow volume with IP 55 filter (free blowing)	145/160 m ³ /h	140/160 m ³ /h
Combination FL + FLA IP 54	116/127 m ³ /h	116/127 m ³ /h
Combination FL + FLA IP 55	109/113 m ³ /h	109/113 m ³ /h
Max. static pressure IP 54	52 Pa	52 Pa
Max. static pressure IP 55	49 Pa	49 Pa
Noise level (in accordance with EN ISO 3741, 50 Hz)	40 dB(A)	40 dB(A)
Max. ambient temperature	-15 ... +55 °C	-15 ... +55 °C
Power consumption	18/17 W	18/17 W
Filter efficiency IP 54	88 %	88 %
Filter efficiency IP 55	91 %	91 %
MTBF at 40 °C	40000 h	40000 h
Approvals	CE, UL, cUL, GOST	

Note

- Mounting for sheet thicknesses from 1 to 3 mm
- Multiple fan solution on request
- Dimensions, cut-outs and tolerances see user manual: please go to www.schroff.biz/oneclick and enter part number



01108063 01108064

Air filtered fan FL 250

Air outlet/inlet filter FLA 250/300

Sheet thicknesses 1 ... 2 mm - cut-out 223 x 223 mm;
Sheet thicknesses >2 ... 3 mm - cut-out 224 x 224 mm



For further information www.schroff.biz/oneclick
oneClick search code = Part no.

Climate control – Air filtered fans

Air filtered fan FL 300



01108024

- Airflow volume 256 m³/h
- Converts simply from push to pull operation
- Ingress protection IP 54, with fluted filter IP 55, NEMA type 12
- Simple to fit without tools by clipping in (can also be bolted)



Delivery comprises (completely assembled)

Item	Qty	Description
1	1	Front grille and case, plastic ABS, RAL 7035, self-extinguishing, UL 94 V-0
2	1	Filter, filter class G 3 (EN 779)
3	1	Fan
4	1	Connection spring terminal strip

Order Information

Description	115 V _{AC}	230 V _{AC}
	Part no.	Part no.
Air filtered fan FL 300	60715-151	60715-150
Air outlet/inlet filter FLA 250/300 (items 1 + 2 included), 1 piece		60715-159
Replacement filter IP 54 for FL 250/300 and FLA 250/300, filter class G 3 (EN 779), PU 5 pieces		60715-185
Fluted filter IP 55 for FL 250/300 and FLA 250/300, filter class G 4 (EN 779), PU 5 pieces		60715-189



01108019 01108021

Air outlet/inlet filter FLA 250/300

Fluted filter IP 55



01108020

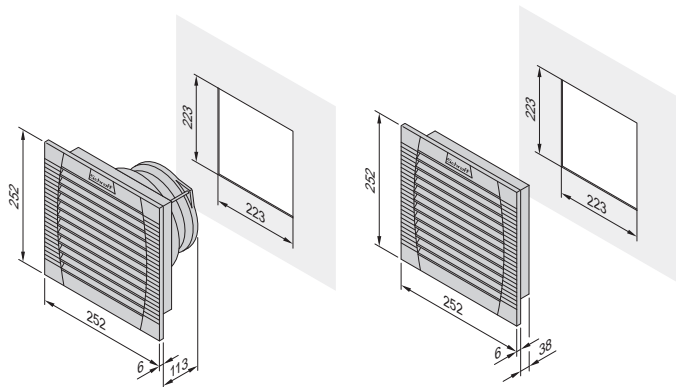
Replacement filter IP 54

Technical data

Voltage	230 V _{AC}	115 V _{AC}
Frequency	50/60 Hz	50/60 Hz
Airflow volume with IP 54 filter (free blowing)	256/292 m ³ /h	256/292 m ³ /h
Airflow volume with IP 55 filter (free blowing)	233/265 m ³ /h	233/265 m ³ /h
Combination FL + FLA IP 54	231/265 m ³ /h	231/265 m ³ /h
Combination FL + FLA IP 55	180/207 m ³ /h	180/207 m ³ /h
Max. static pressure IP 54	116 Pa	116 Pa
Max. static pressure IP 55	112 Pa	112 Pa
Noise level (in accordance with EN ISO 3741, 50 Hz)	42 dB(A)	42 dB(A)
Max. ambient temperature	-15 ... +55 °C	-15 ... +55 °C
Power consumption	45/39 W	40/40 W
Filter efficiency IP 54	88 %	88 %
Filter efficiency IP 55	91 %	91 %
MTBF at 40 °C	40000 h	40000 h
Approvals	CE, UL, cUL, GOST	

Note

- Mounting for sheet thicknesses from 1 to 3 mm
- Multiple fan solution on request
- Dimensions, cut-outs and tolerances see user manual: please go to www.schroff.biz/oneclick and enter part number



01108065 01108064

Air filtered fan FL 300

Air outlet/inlet filter FLA 250/350

Sheet thicknesses 1 ... 2 mm - cut-out 223 x 223 mm;
Sheet thicknesses >2 ... 3 mm - cut-out 224 x 224 mm



For further information www.schroff.biz/oneclick
oneClick search code = Part no.

Climate control – Air filtered fans

Air filtered fan FL 500



01108025

- Airflow volume 480 m³/h
- Converts simply from push to pull operation
- Ingress protection IP 54, with fluted filter IP 55, NEMA type 12
- Simple to fit without tools by clipping in (can also be bolted)



Delivery comprises (completely assembled)

Item	Qty	Description
1	1	Front grille and case, plastic, ABS, RAL 7035, self-extinguishing UL 94 V-0
2	1	Filter, filter class G3 (EN 779)
3	1	Fan
4	1	Connection spring terminal strip

Order Information

Description	115 V _{AC}	230 V _{AC}
	Part no.	Part no.
Air filtered fan FL 500	60715-153	60715-152
Air outlet/inlet filter FLA 500/600 (items 1 + 2 included), 1 piece		60715-160
Replacement filter IP 54 for FL 500/600 and FLA 500/600, filter class G 3 (EN 779), PU 5 pieces		60715-186
Fluted filter IP 55 for FL 500/600 and FLA 500/600, filter class G 4 (EN 779), PU 5 pieces		60715-190



01108019 01108021

Air outlet/inlet filter FLA 500/600

Fluted filter IP 55



01108020

Replacement filter IP 54

Technical data

	230 V _{AC}	115 V _{AC}
Voltage	230 V _{AC}	115 V _{AC}
Frequency	50/60 Hz	50/60 Hz
Airflow volume with IP 54 filter (free blowing)	505/505 m ³ /h	505/505 m ³ /h
Airflow volume with IP 55 filter (free blowing)	480/480 m ³ /h	480/480 m ³ /h
Combination FL + FLA IP 54	380/380 m ³ /h	380/380 m ³ /h
Combination FL + FLA IP 55	370/370 m ³ /h	370/370 m ³ /h
Max. static pressure IP 54	76 Pa	76 Pa
Max. static pressure IP 55	74 Pa	74 Pa
Noise level (in accordance with EN ISO 3741, 50 Hz)	54 dB(A)	54 dB(A)
Max. ambient temperature	-15 ... +55 °C	-15 ... +55 °C
Power consumption	65/80 W	75/90 W
Filter efficiency IP 54	88 %	88 %
Filter efficiency IP 55	91 %	91 %
MTBF at 40 °C	40000 h	40000 h
Approvals	CE, UL, cUL, GOST	

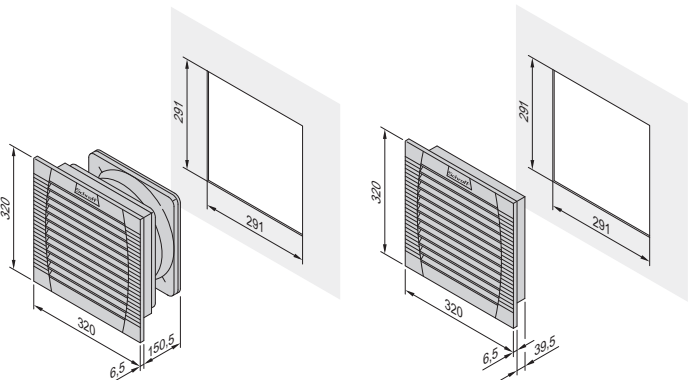
Note

- Mounting for sheet thicknesses from 1 to 3 mm
- Multiple fan solution on request
- Dimensions, cut-outs and tolerances see user manual: please go to www.schroff.biz/oneclick and enter part number



For further information www.schroff.biz/oneclick
oneClick search code = Part no.

01108067 01108068



Air filtered fan FL 500/600 Air outlet/inlet filter FLA 500/600
Sheet thicknesses 1 ... 2 mm - cut-out 223 x 223 mm;
Sheet thicknesses >2 ... 3 mm - cut-out 224 x 224 mm

Climate control – Air filtered fans

Air filtered fan FL 600



01108025

- Airflow volume 640 m³/h
- Converts simply from push to pull operation
- Ingress protection IP 54, with fluted filter IP 55, NEMA type 12
- Simple to fit without tools by clipping in (can also be bolted)



Delivery comprises (completely assembled)

Item	Qty	Description
1	1	Front grille and case, plastic, ABS, RAL 7035, self-extinguishing, UL 94 V-0
2	1	Filter, filter class G 3 (EN 779)
3	1	Fan
4	1	Connection spring terminal strip



01108019 01108021

Air outlet/inlet filter FLA 500/600

Fluted filter IP 55



01108020

Replacement filter IP 54

Order Information

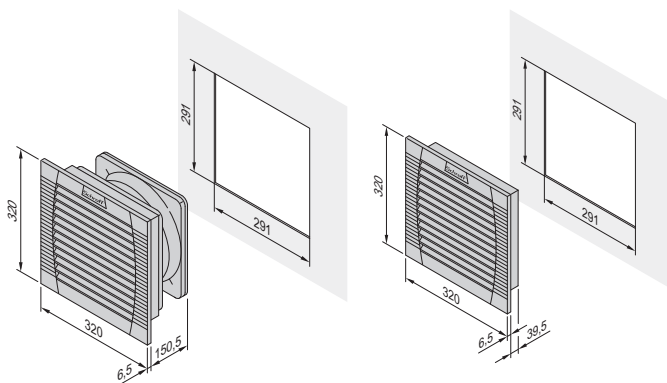
Description	115 V _{AC}	230 V _{AC}
	Part no.	Part no.
Air filtered fan FL 600	60715-155	60715-154
Air outlet/inlet filter FLA 500/600 (items 1 + 2 included), 1 piece		60715-160
Replacement filter IP 54 for FL 500/600 and FLA 500/600, filter class G 3 (EN 779), PU 5 pieces		60715-186
Fluted filter IP 55 for FL 500/600 and FLA 500/600, filter class G 4 (EN 779), PU 5 pieces		60715-190

Technical data

	230 V _{AC}	115 V _{AC}
Frequency	50/60 Hz	50/60 Hz
Airflow volume with IP 54 filter (free blowing)	770/785 m ³ /h	770/785 m ³ /h
Airflow volume with IP 55 filter (free blowing)	640/653 m ³ /h	640/653 m ³ /h
Combination FL + FLA IP 54	490/501 m ³ /h	490/501 m ³ /h
Combination FL + FLA IP 55	445/445 m ³ /h	445/445 m ³ /h
Max. static pressure IP 54	134 Pa	134 Pa
Max. static pressure IP 55	132 Pa	132 Pa
Noise level in accordance with EN ISO 3741, 50 Hz)	63 dB(A)	63 dB(A)
Max. ambient temperature	-15 ... +55 °C	-15 ... +55 °C
Power consumption	115/150 W	110/160 W
Filter efficiency IP 54	88 %	88 %
Filter efficiency IP 55	91 %	91 %
MTBF at 40 °C	40000 h	40000 h
Approvals	CE, UL, cUL, GOST	

Note

- Mounting for sheet thicknesses from 1 to 3 mm
- Multiple fan solution on request
- Dimensions, cut-outs and tolerances see user manual: please go to www.schroff.biz/oneclick and enter part number



01108067 01108068

Air filtered fan FL 500/600

Air outlet/inlet filter FLA 500/600

Sheet thicknesses 1 ... 2 mm - cut-out 223 x 223 mm;
Sheet thicknesses >2 ... 3 mm - cut-out 224 x 224 mm

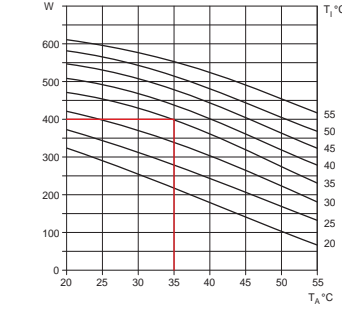


For further information www.schroff.biz/oneclick
oneClick search code = Part no.

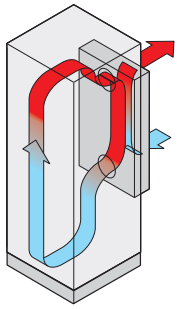
Climate control – McLean air conditioners



45012017



KT6741



00902050
Cooling principle



00901014

For assistance in making your selection, see www.McLeanCoolingTech.com

Standards/certifications

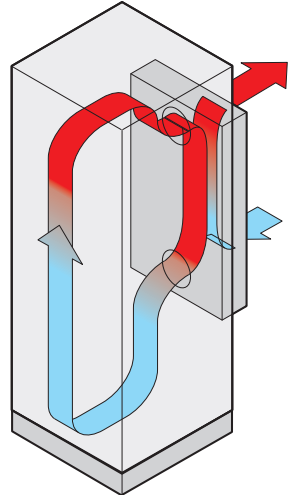
- UL/cUL listed
- CE
- Type 12/3R/4
- Telcordia GR-487
- GOST

Fields of application

- Outdoor/Telecoms
- Telecom shelter
- Suitable to expand existing structure or for new installation
- Compact construction

Function

The cabinet air conditioner is based on a compressor transporting the heat inside the cabinet to the outside, thus keeping the internal temperature in the cabinet on the desired level and within the range of the hysteresis. The fan for the inner circuit keeps the air in the cabinet in constant circulation; the temperature is monitored by a thermostat. The thermostat activates the compressor and the external circuit fan upon reaching the required temperature.



00902050

Downloads and further important information can be found on the Internet under www.schroff.biz

- Overview 0
- Cabinets 1
- Wall mounted cases 2
- Accessories for cabinets and wall mounted cases 3
- Climate control 4
- Desk-top cases 5
- Subracks/ 19" chassis ... 6
- Front panels, plug-in units .. 7
- Systems 8
- Power supply units 9
- Backplanes .. 10
- Connectors, front panel component system 11
- Appendix 12

Outdoor air conditioners (T series)

- Cooling capacity from 280 W to 15,970 W
- Operating temperature from -40 °C to +55 °C
- Corrosion-resistant components
- Extent of delivery: Malfunction switch, heater and overpressure protection
- Zinc-plated case, RAL 7035



45012017

Outdoor air/water heat exchanger

- Suitable to expand existing structure or for new installation, from 280 ... 2945 W
- For extension from 5800 ... 15,970 W

T series

T15, 280 W	4.32
T20, 645 W	4.33
T29, 1040 W	4.34
T43/1, 1710 W	4.35
T43/2, 1965 W	4.36
T43/3, 2590 W	4.37
T50, 2945 W	4.38
T53, 5800 W	4.39
T62, 5930 W	4.40
T70/11, 10,580 W	4.41
T70/15, 15,970 W	4.42



30407004

ServicePLUS see page 4.43

e.g. modifications (special voltages, stainless steel versions and other cooling capacities)

www.schroff.biz/ServicePLUS

ServicePLUS 4.43

Further air conditioners for industrial applications 4.56

Climate control - McLean air conditioners

Outdoor air conditioner T15



45012008

- Max. cooling capacity 280 W
- Compact construction
- Suitable to expand existing structure or for new installation
- Type 12/3R/4



NEW

Delivery comprises (Completely wired and tested)

Item	Qty	Description
1	1	Air conditioner (see technical data)
2	1	Case, St, zinc-plated, powder-coated, RAL 7035
3	1	Mains cable - open end, length 1.5 m
4	1	Thermostat
5	1	Malfunction switch
6	1	Compressor heating
7	1	Fixing material kit, user manual

Order Information

Usable cooling capacity W	Input voltage V	Part no.
237	230	T150126G150

Technical data

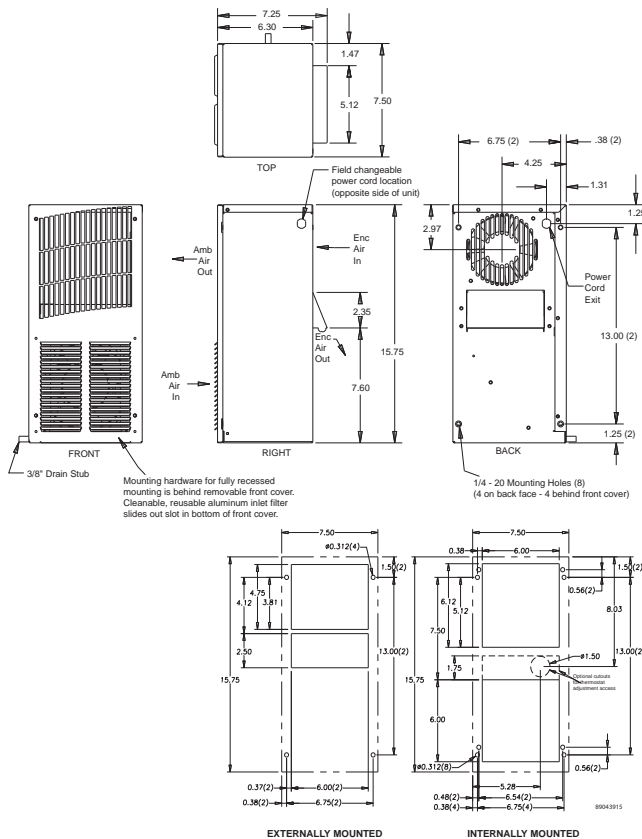
Voltage ($\pm 10\%$)	230 V _{AC}	
Frequency	50 Hz	60 Hz
Usable cooling capacity with L 35 (internal temperature T _i) and L 35 (external temperature T _a) in accordance with DIN 3168 (EN 814 part 5)	237 W	280 W
Maximum power consumption	330 W	345 W
Airflow volume internal circuit	42 m ³ /h	51 m ³ /h
Airflow volume external circuit	82 m ³ /h	90 m ³ /h
Nominal current	1.5 A	1.5 A
Starting current	3.3 A	3.1 A
Regulation (mechanical, factory-preset to 35 °C)	Thermostat	
Maximum heater output	150 W	
Operating temperature range	-40 °C ... +55 °C	
Ingress protection to EN 60 529 for inner circuit/outer circuit	IP 56 / IP 34	
Duty rating	100 %	
Noise level at a distance of 1.5 m	63 dB(A)	
Coolant	R 134a	
Connection for mains and for fault function switch	Cable with open end	
Condensate separation	Runoff	
Weight approx.	12 kg	
Dimensions height x width x depth	400 x 191 x 160 mm	
Test seal: CE, UL/cUL listed, GOST, Telcordia GR-487		

Note

- 115 V_{AC} version or stainless steel Nema type 4X on request
- Other data such as performance chart (60 Hz), assembly drawings available online

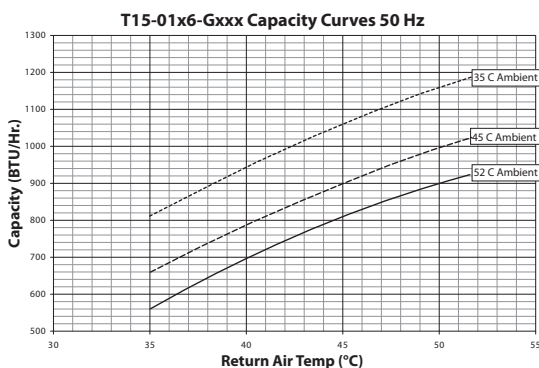


For further information www.schroff.biz/oneclick
oneClick search code = Part no.



89043915

Dimensions in inches [1" = 2.54 mm]



T series_T15_800_Graphs_mg

Climate control – McLean air conditioners

Outdoor air conditioner T20



45012009

- Max. cooling capacity 645 W
- Compact construction
- Suitable as extension or for installing in existing structure
- Type 12/3R/4



NEW

Delivery comprises (Completely wired and tested)

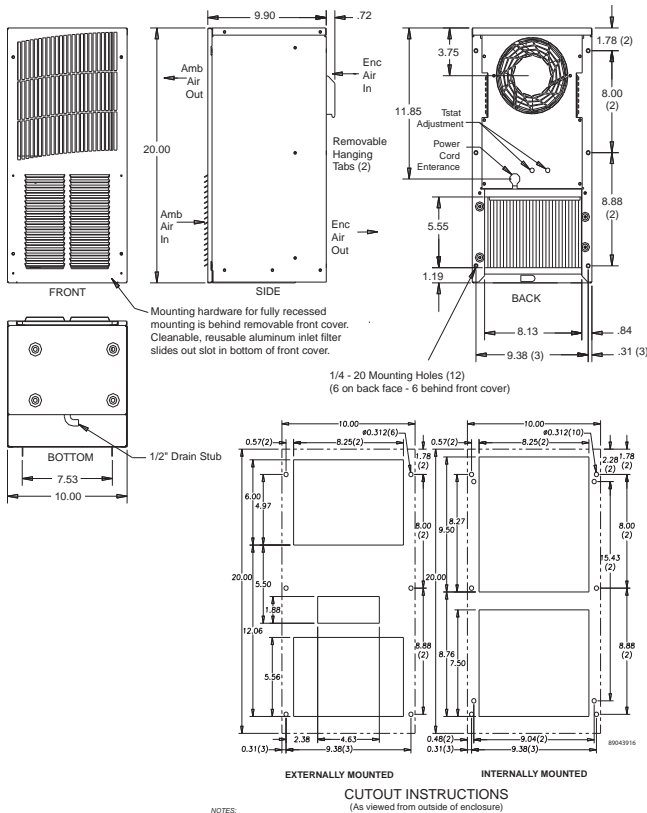
Item	Qty	Description
1	1	Air conditioner (see technical data)
2	1	Case, St, zinc-plated, powder-coated, RAL 7035
3	1	Mains cable - open end, length 1.5 m
4	1	Thermostat
5	1	Malfunction switch
6	1	Compressor heating
7	1	Fixing material kit, user manual

Order Information

Usable cooling capacity W	Input voltage V	Part no.
571	230	T200226G150

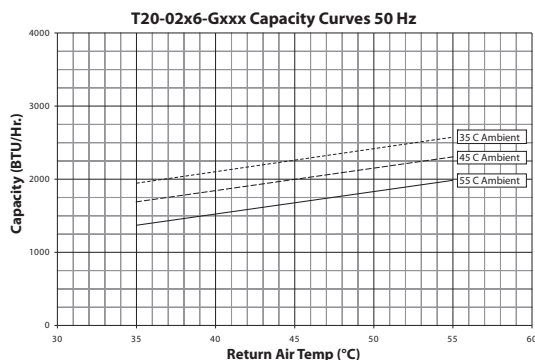
Technical data

Voltage ($\pm 10\%$)	230 V _{AC}	
Frequency	50 Hz	60 Hz
Usable cooling capacity with L 35 (internal temperature T _i) and L 35 (external temperature T _a) in accordance with DIN 3168 (EN 814 part 5)	571 W	645 W
Maximum power consumption	805 W	805 W
Airflow volume internal circuit	131 m ³ /h	155 m ³ /h
Airflow volume external circuit	255 m ³ /h	280 m ³ /h
Nominal current	3.5 A	3.5 A
Starting current	14.4 A	14.4 A
Regulation (mechanical, factory-preset to 35 °C)	Thermostat	
Maximum heater output	500 W	
Operating temperature range	-40 °C ... +55 °C	
Ingress protection to EN 60 529 for inner circuit/outer circuit	IP 56 / IP 34	
Duty rating	100 %	
Noise level at a distance of 1.5 m	66 dB(A)	
Coolant	R 134a	
Connection for mains and for fault function switch	Cable with open end	
Condensate separation	Runoff	
Weight approx.	25 kg	
Dimensions height x width x depth	508 x 254 x 251 mm	
Test seal: CE, UL/cUL listed, GOST, Telcordia GR-487		



89043916

Dimensions in inches [1" = 2.54 mm]



T series_T20_2000_Graphs_mg

Note

- 115 V_{AC} version or stainless steel Nema type 4X on request
- Other data such as performance chart (60 Hz), assembly drawings available online



For further information www.schroff.biz/oneclick
oneClick search code = Part no.

Climate control - McLean air conditioners

Outdoor air conditioner T29



45012010

- Max. cooling capacity 1040 W
- Compact construction
- Suitable to expand existing structure or for new installation
- Type 12/3R/4



NEW

Delivery comprises (Completely wired and tested)

Item	Qty	Description
1	1	Air conditioner (see technical data)
2	1	Case, St, zinc-plated, powder-coated, RAL 7035
3	1	Mains cable - open end, length 1.5 m
4	1	Thermostat
5	1	Malfunction switch
6	1	Compressor heating
7	1	Fixing material kit, user manual

Order Information

Usable cooling capacity W	Input voltage V	Part no.
1025	230	T290426G150

Technical data

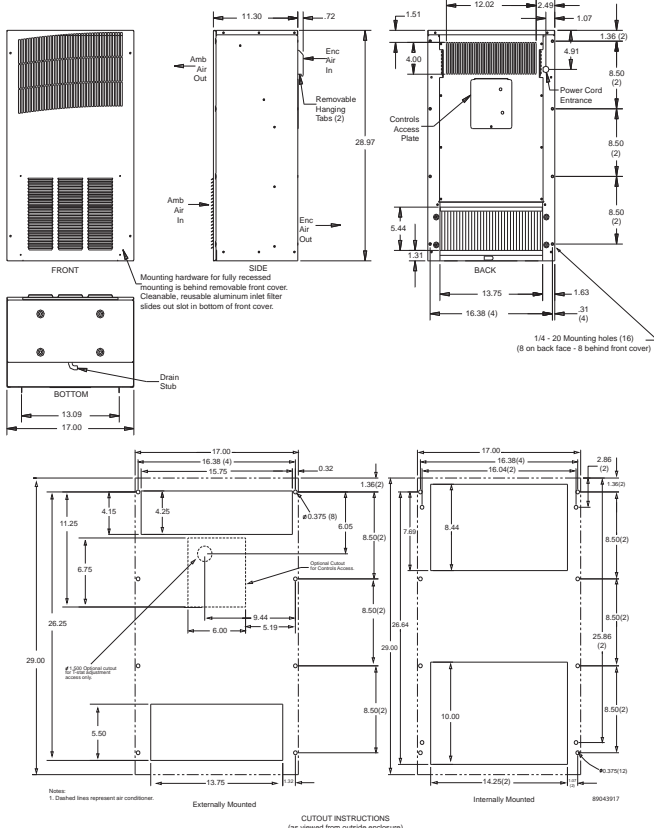
Voltage ($\pm 10\%$)	230 V _{AC}	
Frequency	50 Hz	60 Hz
Usable cooling capacity with L 35 (internal temperature T _i) and L 35 (external temperature T _a) in accordance with DIN 3168 (EN 814 part 5)	1025 W	1143 W
Maximum power consumption	1587 W	1564 W
Airflow volume internal circuit	292 m ³ /h	348 m ³ /h
Airflow volume external circuit	331 m ³ /h	399 m ³ /h
Nominal current	6.9 A	6.8 A
Starting current	23 A	23 A
Regulation (mechanical, factory-pret set to 35 °C)	Thermostat	
Maximum heater output	1000 W	
Operating temperature range	-40 °C ... +55 °C	
Ingress protection to EN 60 529 for inner circuit/outer circuit	IP 56 / IP 34	
Duty rating	100 %	
Noise level at a distance of 1.5 m	67 dB(A)	
Coolant	R 134a	
Connection for mains and for fault function switch	Cable with open end	
Condensate separation	Runoff	
Weight approx.	49 kg	
Dimensions height x width x depth	737 x 432 x 287 mm	
Test seal: CE, UL/CUL listed, GOST, Telcordia GR-487		

Note

- 115 V_{AC} version or stainless steel Nema type 4X on request
- Other data such as performance chart (60 Hz), assembly drawings available online

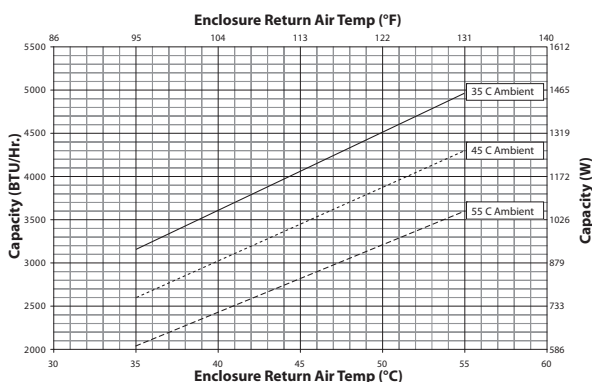


For further information www.schroff.biz/oneclick
oneClick search code = Part no.



89043917

Dimensions in inches [1" = 2.54 mm]

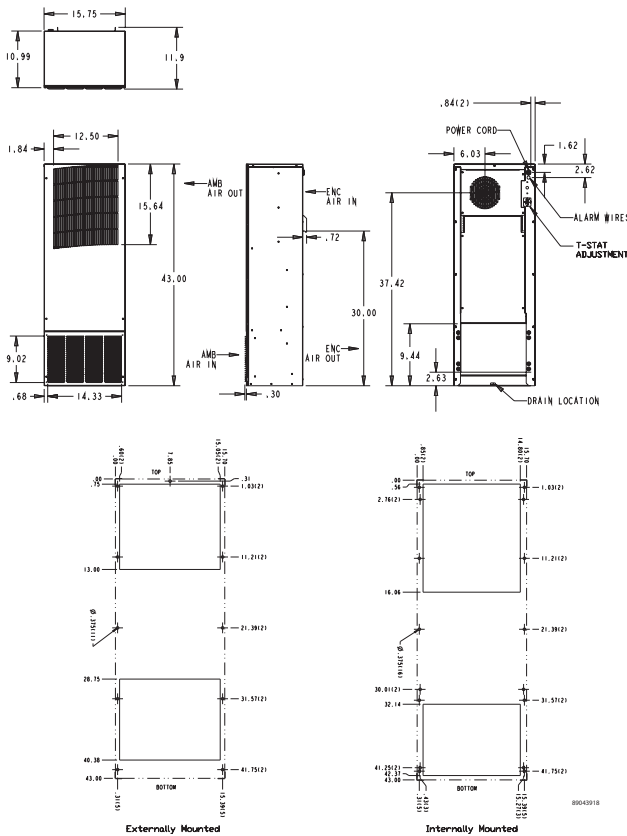


Climate control - McLean air conditioners

Outdoor air conditioner T43/1

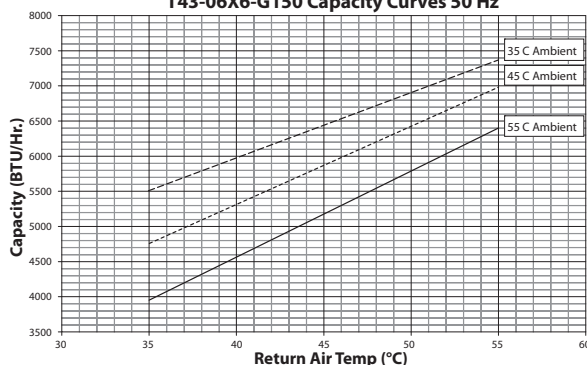


45012011



Dimensions in inches [1" = 25.4 mm]

T43-06X6-G150 Capacity Curves 50 Hz



T series_T43_6000_Graphs_mg

- Max. cooling capacity 1710 W
- Compact construction
- Suitable to expand existing structure or for new installation
- Type 12/3R/4



NEW

Delivery comprises (Completely wired and tested)

Item	Qty	Description
1	1	Air conditioner (see technical data)
2	1	Case, St, zinc-plated, powder-coated, RAL 7035
3	1	Mains cable - open end, length 1.5 m
4	1	Thermostat
5	1	Malfunction switch
6	1	Compressor heating
7	1	Fixing material kit, user manual

Order Information

Usable cooling capacity W	Input voltage V	Part no.
1600	230	T430626G150

Technical data

Voltage ($\pm 10\%$)	230 V _{AC}	
Frequency	50 Hz	60 Hz
Usable cooling capacity with L 35 (internal temperature T _i) and L 35 (external temperature T _a) in accordance with DIN 3168 (EN 814 part 5)	1600 W	1713 W
Maximum power consumption	1012 W	874 W
Airflow volume internal circuit	527 m ³ /h	544 m ³ /h
Airflow volume external circuit	586 m ³ /h	603 m ³ /h
Nominal current	4.4 A	3.8 A
Starting current	27 A	27 A
Regulation	Thermostat	
(mechanical, factory-preset to 35 °C)		
Maximum heater output	1000 W	
Operating temperature range	-40 °C ... +55 °C	
Ingress protection to EN 60 529	IP 56 / IP 34	
for inner circuit/outer circuit		
Duty rating	100 %	
Noise level at a distance of 1.5 m	65.7 dB(A)	
Coolant	R 134a	
Connection for mains and for fault function switch	Cable with open end	
Condensate separation	Runoff	
Weight approx.	57 kg	
Dimensions height x width x depth	1092 x 400 x 279 mm	
Test seal: CE, UL/cUL listed, GOST, Telcordia GR-487		

Note

- 115 V_{AC} version or stainless steel Nema type 4X on request
- Other data such as performance chart (60 Hz), assembly drawings available online



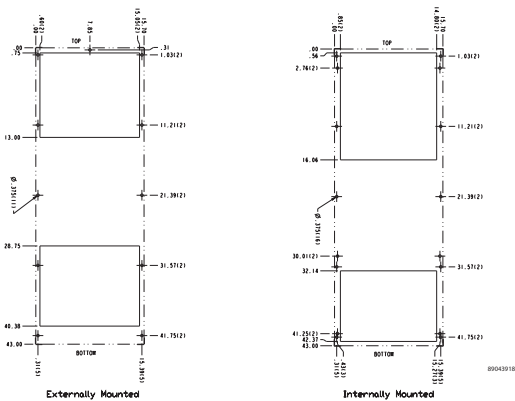
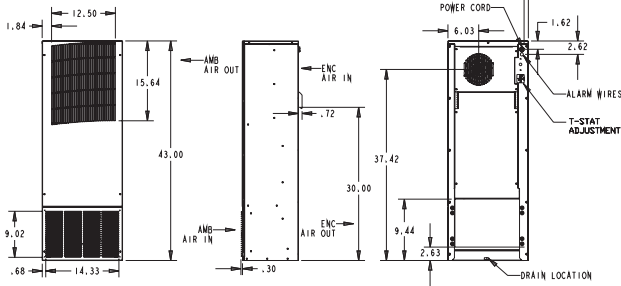
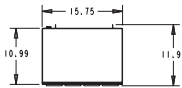
For further information www.schroff.biz/oneclick
oneClick search code = Part no.

Climate control - McLean air conditioners

Outdoor air conditioner T43/2

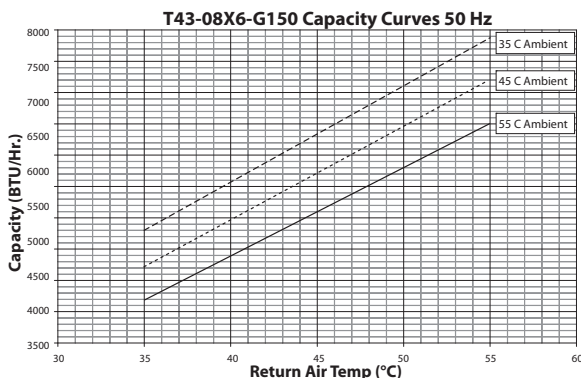


45012011



89043918

Dimensions in inches [1" = 2.54 mm]



T-Series_T43_8000_Graphs_mg

- Max. cooling capacity 1965 W
- Compact construction
- Suitable to expand existing structure or for new installation
- Type 12/3R/4



NEW

Delivery comprises (Completely wired and tested)

Item	Qty	Description
1	1	Air conditioner (see technical data)
2	1	Case, St, zinc-plated, powder-coated, RAL 7035
3	1	Mains cable - open end, length 1.5 m
4	1	Thermostat
5	1	Malfunction switch
6	1	Compressor heating
7	1	Fixing material kit, user manual

Order Information

Usable cooling capacity W	Input voltage V	Part no.
1740	230	T430826G150

Technical data

Voltage ($\pm 10\%$)	230 V _{AC}	
Frequency	50 Hz	60 Hz
Usable cooling capacity with L 35 (internal temperature T _i) and L 35 (external temperature T _a) in accordance with DIN 3168 (EN 814 part 5)	1740 W	1965 W
Maximum power consumption	1196 W	1242 W
Airflow volume internal circuit	464 m ³ /h	493 m ³ /h
Airflow volume external circuit	527 m ³ /h	535 m ³ /h
Nominal current	5.2 A	5.4 A
Starting current	27 A	27 A
Regulation (mechanical, factory-pret to 35 °C)	Thermostat	
Maximum heater output	1000 W	
Operating temperature range	-40 °C ... +55 °C	
Ingress protection to EN 60 529 for inner circuit/outer circuit	IP 56 / IP 34	
Duty rating	100 %	
Noise level at a distance of 1.5 m	65.7 dB(A)	
Coolant	R 134a	
Connection for mains and for fault function switch	Cable with open end	
Condensate separation	Runoff	
Weight approx.	57 kg	
Dimensions height x width x depth	1092 x 400 x 279 mm	
Test seal: CE, UL/cUL listed, GOST, Telcordia GR-487		

Note

- 115 V_{AC} version or stainless steel Nema type 4X on request
- Other data such as performance chart (60 Hz), assembly drawings available online



For further information www.schroff.biz/oneclick
oneClick search code = Part no.

Climate control – McLean air conditioners

Outdoor air conditioner, T43/3



45012011

- Cooling capacity 2590 W (compressor)
- Compact construction
- Suitable to expand existing structure or for new installation
- Type 12/3R/4



NEW

Delivery comprises (Completely wired and tested)

Item	Qty	Description
1	1	Air conditioner (see technical data)
2	1	Case, St, zinc-plated, powder-coated, RAL 7035
3	1	Mains cable - open end, length 1.5 m
4	1	Thermostat
5	1	Malfunction switch
6	1	Compressor heating
7	1	Fixing material kit, user manual

Order Information

Usable cooling capacity W	Input voltage V	Part no.
2478	230	T431026G150

Technical data

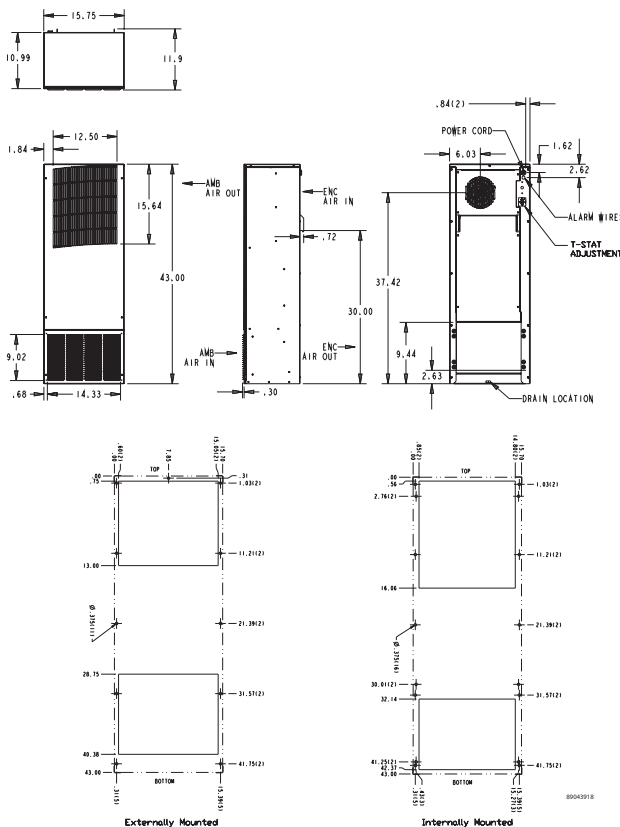
Voltage (± 10 %)	230 V_{AC}	
Frequency	50 Hz	60 Hz
Usable cooling capacity with L 35 (internal temperature T _i) and L 35 (external temperature T _a) in accordance with DIN 3168 (EN 814 part 5)	2478 W	2589 W
Max. power consumption	2070 W	2070 W
Airflow volume of inner circuit at 50/60 Hz	544 m ³ /h	561 m ³ /h
Airflow volume of outer circuit at 50/60 Hz	965 m ³ /h	1081 m ³ /h
Nominal current at 50/60 Hz	9 A	9 A
Starting current at 50/60 Hz	38 A	38 A
Regulation (mechanical, factory-preset to 35 °C)	Thermostat	
Heater output max.	1000 W	
Temperature range	-40 °C ... +55 °C	
Ingress protection to EN 60 529 for inner circuit/outer circuit	IP 56 / IP 34	
Duty rating	100 %	
Noise level at a distance of 1,5 m	73.3 dB(A)	
Coolant	R 134a	
Connection for mains and malfunction switch	Cable with open end	
Condensate separation	Runoff	
Weight approx.	57 kg	
Dimensions height x width x depth	1092 x 400 x 279 mm	
Test seal: CE, UL/cUL listed, GOST, Telcordia GR-487		

Note

- 115 V_{AC} version or stainless steel Nema type 4X on request
- Other data such as performance chart (60 Hz), assembly drawings available online

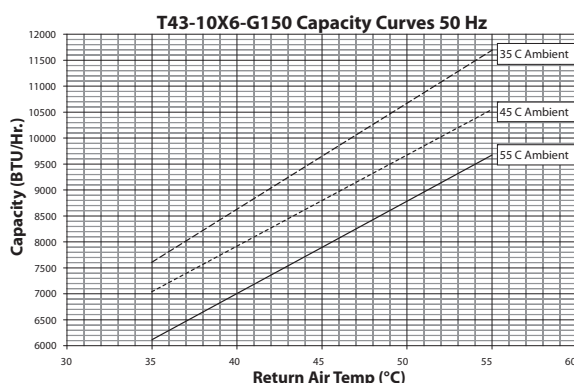


For further information www.schroff.biz/oneclick
oneClick search code = Part no.



89043918

Dimensions in inches [1" = 2.54 mm]



T-Series_T43_10000_Graphs_mg

Climate control - McLean air conditioners

Outdoor air conditioner T50



45012012

- Max. cooling capacity 2945 W
- Compact construction
- Suitable to expand existing structure or for new installation
- Type 12/3R/4



NEW

Delivery comprises (Completely wired and tested)

Item	Qty	Description
1	1	Air conditioner (see technical data)
2	1	Case, St, zinc-plated, powder-coated, RAL 7035
3	1	Mains cable - open end, length 1.5 m
4	1	Thermostat
5	1	Malfunction switch
6	1	Compressor heating
7	1	Fixing material kit, user manual

Order Information

Usable cooling capacity W	Input voltage V	Part no.
2725	230	T501226G150

Technical data

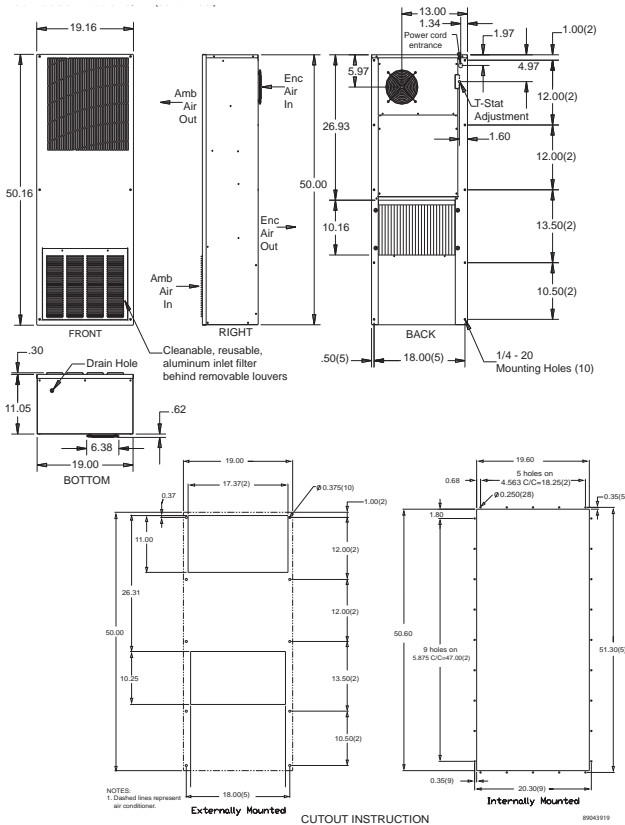
Voltage ($\pm 10\%$)	230 V _{AC}	
Frequency	50 Hz	60 Hz
Usable cooling capacity with L 35 (internal temperature T _i) and L 35 (external temperature T _a) in accordance with DIN 3168 (EN 814 part 5)	2725 W	2945 W
Maximum power consumption	1804 W	2139 W
Airflow volume internal circuit	510 m ³ /h	626 m ³ /h
Airflow volume external circuit	883 m ³ /h	1062 m ³ /h
Nominal current	8.2 A	9.3 A
Starting current	38 A	38 A
Regulation (mechanical, factory-pret to 35 °C)	Thermostat	
Maximum heater output	1500 W	
Operating temperature range	-40 °C ... +55 °C	
Ingress protection to EN 60 529 for inner circuit/outer circuit	IP 56 / IP 34	
Duty rating	100 %	
Noise level at a distance of 1.5 m	68 dB(A)	
Coolant	R 134a	
Connection for mains and for fault function switch	Cable with open end	
Condensate separation	Runoff	
Weight approx.	75 kg	
Dimensions height x width x depth	1270 x 483 x 281 mm	
Test seal: CE, UL/CUL listed, GOST, Telcordia GR-487		

Note

- 115 V_{AC} version or stainless steel Nema type 4X on request
- Other data such as performance chart (60 Hz), assembly drawings available online

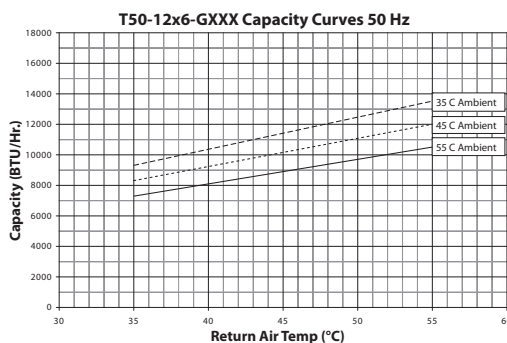


For further information www.schroff.biz/oneclick
oneClick search code = Part no.



89043919

Dimensions in inches [1" = 2.54 mm]



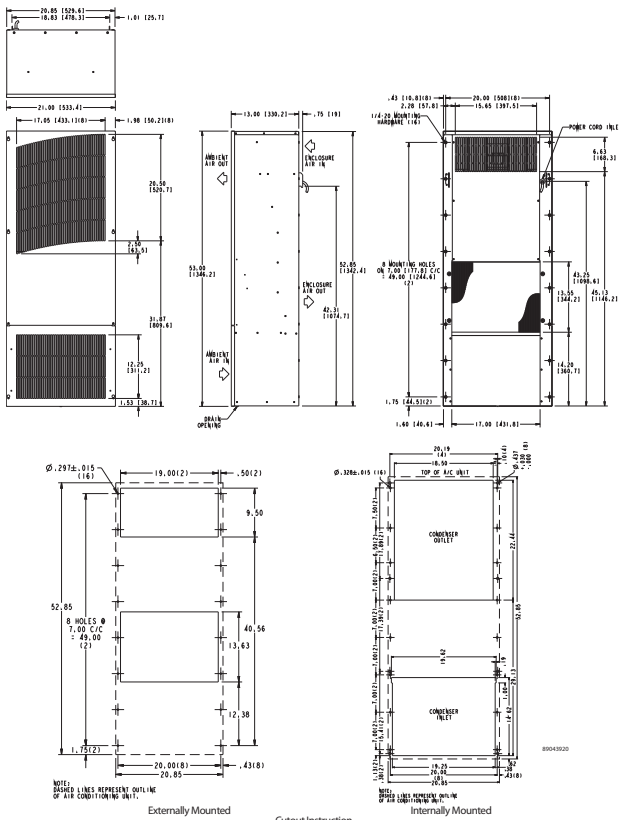
T series_T50_12000_Graphs_mg

Climate control - McLean air conditioners

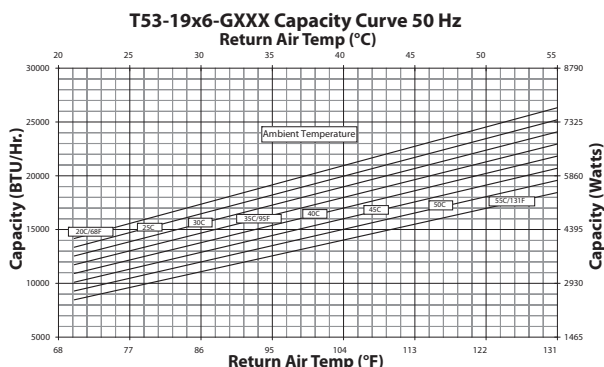
Outdoor air conditioner T53



45012013



Dimensions in inches [1" = 2.54 mm]



T series_T53_19000_Graphs_mg

- Max. cooling capacity 5800 W
- Compact construction
- Suitable to expand existing structure or for new installation
- Type 12/3R/4



NEW

Delivery comprises (Completely wired and tested)

Item	Qty	Description
1	1	Air conditioner (see technical data)
2	1	Case, St, zinc-plated, powder-coated, RAL 7035
3	1	Mains connection via terminal block
4	1	Thermostat
5	1	Malfunction switch
6	1	Compressor heating
7	1	Fixing material kit, user manual

Order Information

Usable cooling capacity W	Input voltage V	Part no.
4466	230	T531926G150

Technical data

Voltage ($\pm 10\%$)	230 V _{AC}	
Frequency	50 Hz	60 Hz
Usable cooling capacity with L 35 (internal temperature T _i) and L 35 (external temperature T _a) in accordance with DIN 3168 (EN 814 part 5)	4466 W	5807 W
Maximum power consumption	3979 W	4669 W
Airflow volume internal circuit	763 m ³ /h	882 m ³ /h
Airflow volume external circuit	2046 m ³ /h	2209 m ³ /h
Nominal current	17.3 A	20.3 A
Starting current	54 A	54 A
Regulation	Thermostat (mechanical, factory-pret set to 35 °C)	
Maximum heater output	3000 W	
Operating temperature range	-40 °C ... +55 °C	
Ingress protection to EN 60 529 for inner circuit/outer circuit	IP 56 / IP 34	
Duty rating	100 %	
Noise level at a distance of 1.5 m	76 dB(A)	
Coolant	R 134a	
Connection for mains and for fault function switch	Terminal block	
Condensate separation	Runoff	
Weight approx.	90 kg	
Dimensions height x width x depth	1346 x 533 x 330 mm	
Test seal: CE, UL/cUL listed, GOST, Telcordia GR-487		

Note

- 115 V_{AC} version or stainless steel Nema type 4X on request
- Other data such as performance chart (60 Hz), assembly drawings available online



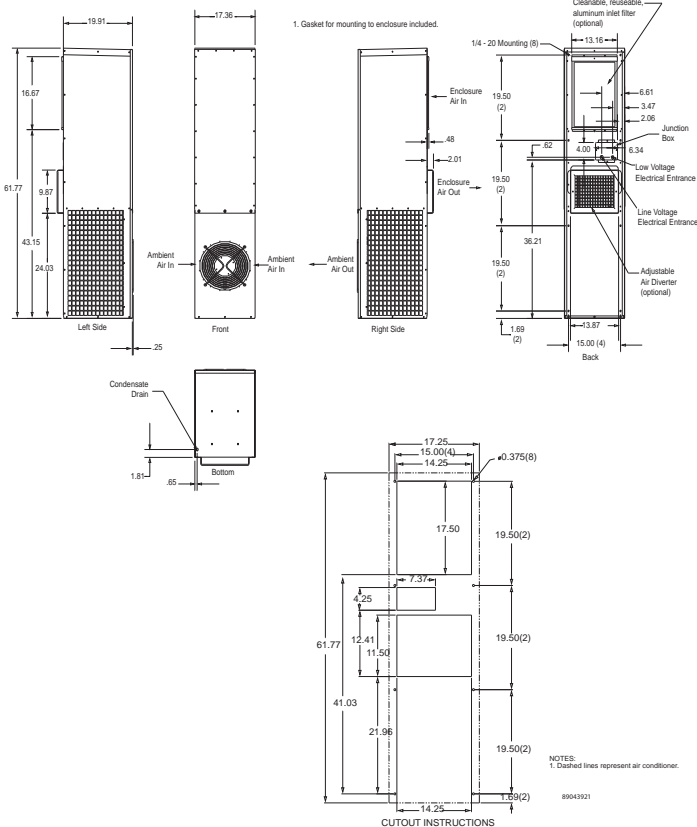
For further information www.schroff.biz/oneclick
oneClick search code = Part no.

Climate control - McLean air conditioners

Outdoor air conditioner T62



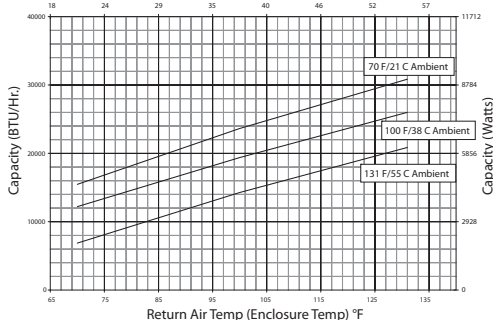
45012014



Dimensions in inches [1" = 2.54 mm]

89043921

T62-22x6-GXXX R-407c Capacity Curves 50 Hz
Return Air Temp (Enclosure Temp) °C



T series_T62_20000_Graphs_mg

- Max. cooling capacity 5930 W
- Compact construction
- Suitable to expand existing structure
- Type 12/3R/4



NEW

Delivery comprises (Completely wired and tested)

Item	Qty	Description
1	1	Air conditioner (see technical data)
2	1	Case, St, zinc-plated, powder-coated, RAL 7035
3	1	Mains connection via terminal block
4	1	Thermostat
5	1	Malfunction switch
6	1	Compressor heating
7	1	Fixing material kit, user manual

Order Information

Usable cooling capacity W	Input voltage V	Part no.
5351	230	T622226G150

Technical data

Voltage (± 10 %)	230 VAC	
Frequency	50 Hz	60 Hz
Usable cooling capacity with L 35 (internal temperature T _i) and L 35 (external temperature T _a) in accordance with DIN 3168 (EN 814 part 5)	5351 W	5936 W
Maximum power consumption	4370 W	5060 W
Airflow volume internal circuit	968 m ³ /h	1143 m ³ /h
Airflow volume external circuit	2452 m ³ /h	3053 m ³ /h
Nominal current	19 A	22 A
Starting current	60 A	60 A
Regulation (mechanical, factory-preset to 35 °C)	Thermostat	
Maximum heater output	2000 W	
Operating temperature range	-40 °C ... +55 °C	
Ingress protection to EN 60 529 for inner circuit/outer circuit	IP 56 / IP 34	
Duty rating	100 %	
Noise level at a distance of 1.5 m	71 dB(A)	
Coolant	R 407c	
Connection for mains and for fault function switch	Terminal block	
Condensate separation	Runoff	
Weight approx.	99 kg	
Dimensions height x width x depth	1569 x 506 x 441 mm	
Test seal: CE, UL/cUL listed, GOST, Telcordia GR-487		

Note

- 115 V_{AC} version or stainless steel Nema type 4X on request
- Other data such as performance chart (60 Hz), assembly drawings available online



For further information www.schroff.biz/oneclick
oneClick search code = Part no.

Climate control – McLean air conditioners

Outdoor air conditioners T70/11



45012015

- Max. cooling capacity 10,580 W
- Compact construction
- Suitable to expand existing structure
- Type 12/3R/4



NEW

Delivery comprises (Completely wired and tested)

Item	Qty	Description
1	1	Air conditioner (see technical data)
2	1	Case, St, zinc-plated, powder-coated, RAL 7035
3	1	Mains connection via terminal block
4	1	Thermostat
5	1	Malfunction switch
6	1	Compressor heating
7	1	Fixing material kit, user manual

Order Information

Usable cooling capacity W	Input voltage V	Part no.
9192	230	T703626G150

Technical data

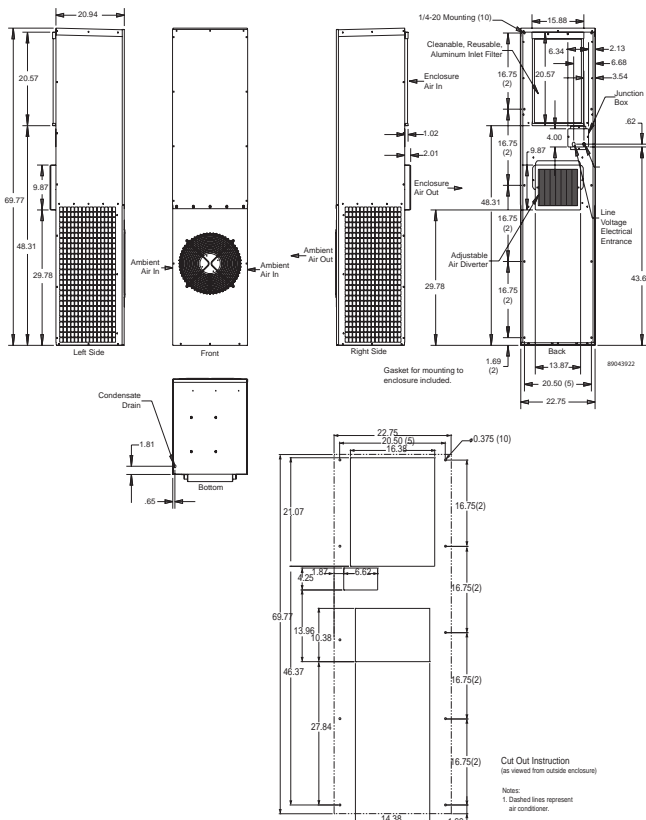
Voltage ($\pm 10\%$)	230 V _{AC}	
Frequency	50 Hz	60 Hz
Usable cooling capacity with L 35 (internal temperature T _i) and L 35 (external temperature T _a) in accordance with DIN 3168 (EN 814 part 5)	9192 W	10579 W
Maximum power consumption	8280 W	8280 W
Airflow volume internal circuit	1843 m ³ /h	1989 m ³ /h
Airflow volume external circuit	3697 m ³ /h	3987 m ³ /h
Nominal current	36 A	36 A
Starting current	104 A	104 A
Regulation (mechanical, factory-preset to 35 °C)	Thermostat	
Maximum heater output	2000 W	
Operating temperature range	-40 °C ... +55 °C	
Ingress protection to EN 60 529 for inner circuit/outer circuit	IP 56 / IP 34	
Duty rating	100 %	
Noise level at a distance of 1.5 m	66 dB(A)	
Coolant	R 407c	
Connection for mains and for fault function switch	Terminal block	
Condensate separation	Runoff	
Weight approx.	150 kg	
Dimensions height x width x depth	1772 x 578 x 532 mm	
Test seal: CE, UL/cUL listed, GOST, Telcordia GR-487		

Note

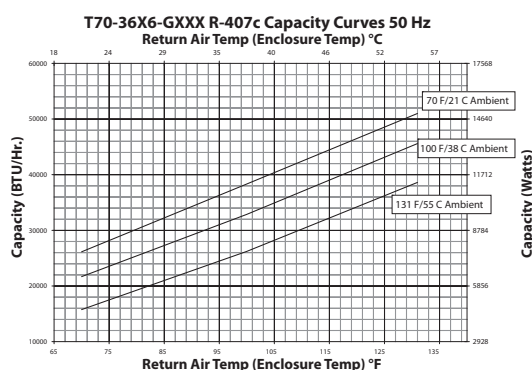
- 115 V_{AC} version or stainless steel Nema type 4X on request
- Other data such as performance chart (60 Hz), assembly drawings available online



For further information www.schroff.biz/oneclick
oneClick search code = Part no.



Dimensions in inches [1" = 2.54 mm]



Climate control - McLean air conditioners

Outdoor air conditioners T70/15



45012015

- Max. cooling capacity 15,970 W
- Compact construction
- Suitable to expand existing structure
- Type 12/3R/4



NEW

Delivery comprises (Completely wired and tested)

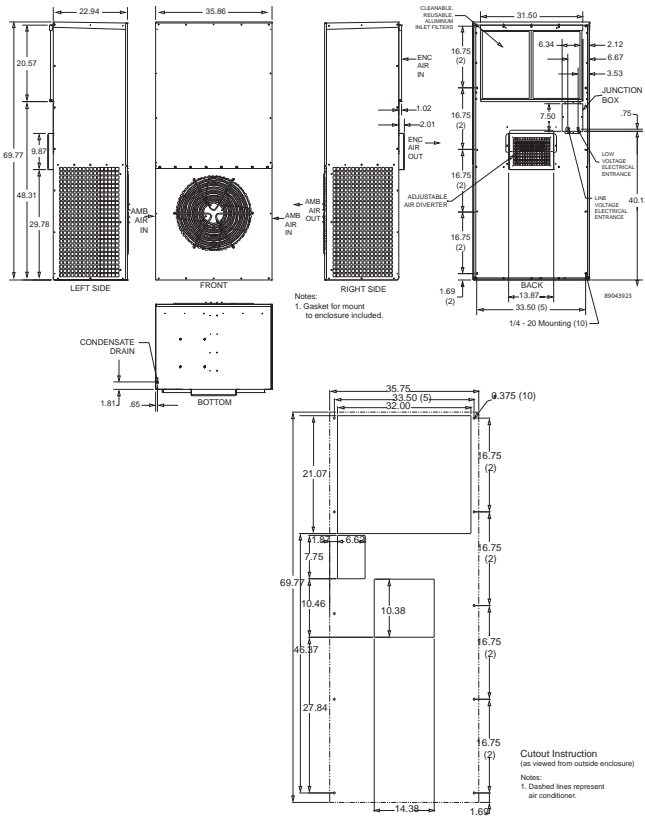
Item	Qty	Description
1	1	Air conditioner (see technical data)
2	1	Case, St, zinc-plated, powder-coated, RAL 7035
3	1	Mains connection via terminal block
4	1	Thermostat
5	1	Malfunction switch
6	1	Compressor heating
7	1	Fixing material kit, user manual

Order Information

Usable cooling capacity W	Input voltage V	Part no.
13810	230	T706026G150

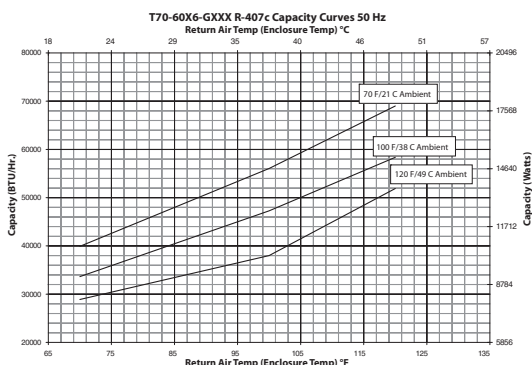
Technical data

Voltage ($\pm 10\%$)	230 V _{AC}	
Frequency	50 Hz	60 Hz
Usable cooling capacity with L 35 (internal temperature T _i) and L 35 (external temperature T _a) in accordance with DIN 3168 (EN 814 part 5)	13810 W	15972 W
Maximum power consumption	7000 W	9200 W
Airflow volume internal circuit	2565 m ³ /h	2767 m ³ /h
Airflow volume external circuit	4614 m ³ /h	4979 m ³ /h
Nominal current	35 A	40 A
Starting current	144 A	144 A
Regulation (mechanical, factory-preset to 35 °C)	Thermostat	
Maximum heater output	5000 W	
Operating temperature range	-40 °C ... +55 °C	
Ingress protection to EN 60 529 for inner circuit/outer circuit	IP 56 / IP 34	
Duty rating	100 %	
Noise level at a distance of 1.5 m	66 dB(A)	
Coolant	R 407c	
Connection for mains and for fault function switch	Terminal block	
Condensate separation	Runoff	
Weight approx.	190 kg	
Dimensions height x width x depth	1772 x 911 x 583 mm	
Test seal:	CE, UL/cUL listed, GOST, Telcordia GR-487	



89043923

Dimensions in inches [1" = 2.54 mm]



T series_T70_59000_Graphs_mg

Note

- 115 V_{AC} version or stainless steel Nema type 4X on request
- Other data such as performance chart (60 Hz), assembly drawings available online



For further information www.schroff.biz/oneclick
oneClick search code = Part no.

Climate control – McLean air conditioners



solution

Integration and custom developments

Simple. Fast. From one source.

- Tests, integration into the cabinet, incl. cabling
- Special voltages
- Heat simulation using the FloTHERM model and calculations by experts



lifecycle

Flexible support throughout the product lifecycle

We are with you. For the entire product life.

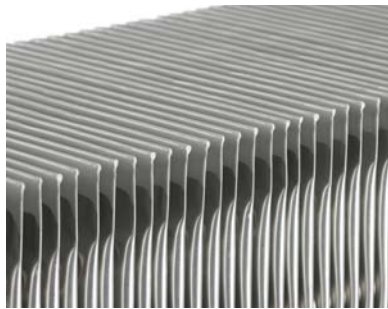
- Replacement service, maintenance, guarantee, replacement parts

- Overview 0
- Cabinets 1
- Wall mounted cases 2
- Accessories for cabinets and wall mounted cases 3
- Climate control 4**
- Desk-top cases 5
- Subracks/ 19" chassis ... 6
- Front panels, plug-in units .. 7
- Systems 8
- Power supply units 9
- Backplanes .. 10
- Connectors, front panel component system 11
- Appendix 12

Climate control – McLean heat exchangers

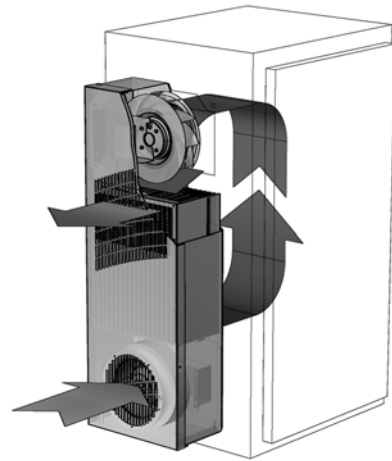


00912005



PTPA-104 CLIMAGUARDCoreSealed_B

Aluminium heat exchangers for excellent heat dissipation
 Double coating for excellent protection against extreme weather conditions



Principle of operation

ProAir_HtExchgr_AirFlow_sg

Standards, approvals

- UL/cUL listed
- CE
- Type 12/3R/4
- Telcordia GR-487
- GOST
- Type 4x stainless steel optional

Fields of application

- Outdoor/Telecoms
- Telecom shelters
- Alternative energies



Downloads and further important information can be found on the Internet under www.schroff.biz

Outdoor air/air heat exchangers (Climaguard)

- From 25 kW/K ... 150 kW/K
- Operating temperature -40 °C ... 65 °C
- For AC and DC supply power
- Operation without filter
- Corrosion-resistant components



45012005

Models

- Standard models 25, 50, 100 and 150 W/K
- 115 V_{AC}, 230 V_{AC}, 24 V_{DC} und 48 V_{DC}

Climaguard

25 W/K	4.46
50 W/K	4.47
100 W/K	4.48
150 W/K	4.49

Further air
conditioners for
industrial
applications 4.56

Climate control – McLean heat exchangers

Outdoor air/air heat exchanger CLIMAGUARD TX23



45012001

- Cooling capacity 25 W/K
- Compact construction
- To mount inside or on the outside walls of a cabinet



NEW

Delivery comprises

Item	Qty	Description
1	1	Air/air heat exchanger (see technical data)
2	1	Case, St, zinc-plated, powder-coated, RAL 7035
3	1	Fixing material kit, user manual

Order Information

Description	Usable cooling capacity	Input voltage	Part no.
Outdoor air/air heat exchanger CLIMAGUARD TX23	25 W	230 V _{AC}	TX231426100
	25 W	48 V _{DC}	TX231448100

Technical data

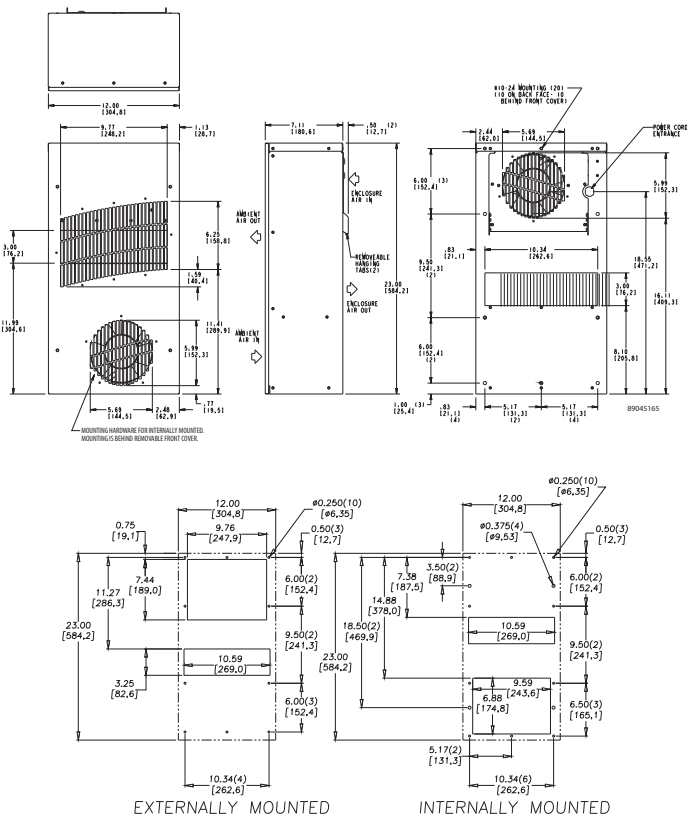
Voltage (± 10 %)	230 V _{AC}	48 V _{DC}
Frequency	50/60 Hz	–
Usable cooling capacity, nominal	25 W/K	25 W/K
Power consumption	23 W	87 W
Airflow volume of inner circuit at 50/60 Hz	117/142 m ³ /h	268 m ³ /h
Airflow volume of outer circuit at 50/60 Hz	98/117 m ³ /h	297 m ³ /h
Nominal current at 50/60 Hz	0.1 A	1.8 A
Operating temperature range	-40 °C ... +65 °C	
Noise level 1.5 m	56 dB(A)	56 dB(A)
Mains cable connection	Terminal block	
Weight approx.	14 kg	14 kg
Dimensions height x width x depth	585 x 305 x 181 mm	
Test seal	CE, UL/cUL, GOST	

Note

- 24 V_{AC}, 115 V_{AC} version or stainless steel Nema type 4X on request



For further information www.schroff.biz/oneclick
oneClick search code = Part no.



CUTOUT INSTRUCTIONS
(AS VIEWED FROM OUTSIDE OF ENCLOSURE)

NOTES:
1. DASHED LINES REPRESENT HEAT EXCHANGER.

89045165

Dimension units: inch [mm]

Climate control – McLean heat exchangers

Outdoor air/air heat exchanger CLIMAGUARD TX33



45012002

- Cooling capacity 50 W/K
- Compact construction
- To mount on outside or inside a cabinet



NEW

Delivery comprises

Item	Qty	Description
1	1	Air conditioner (see technical data)
2	1	Case, St, zinc-plated, powder-coated, RAL 7035
3	1	Fixing material kit, user manual

Order Information

Description	Usable cooling capacity	Input voltage	Part no.
Outdoor air/air heat exchanger CLIMAGUARD TX33	50 W	230 V _{AC}	TX332826100
	50 W	48 V _{DC}	TX332848100

Technical data

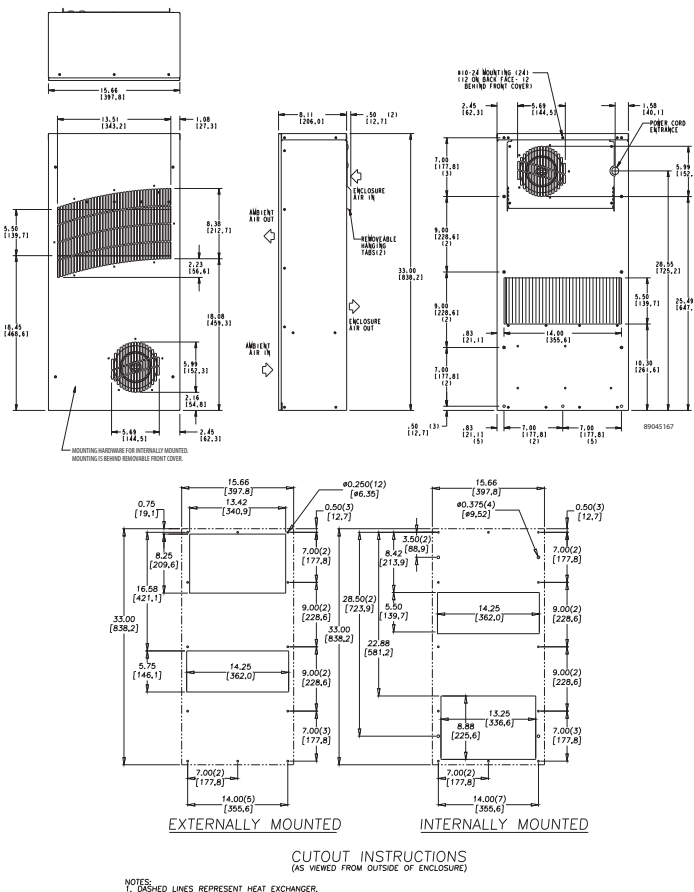
Voltage (± 10 %)	230 V _{AC}	48 V _{DC}
Frequency	50/60 Hz	–
Usable cooling capacity, nominal	50 W/K	50 W/K
Power consumption	92 W	87 W
Airflow volume of inner circuit at 50/60 Hz	360/387 m ³ /h	387 m ³ /h
Airflow volume of outer circuit at 50/60 Hz	404/447 m ³ /h	282 m ³ /h
Nominal current at 50/60 Hz	0.4 A	1.8 A
Operating temperature range	–40 °C ... +65 °C	
Noise level 1.5 m	56 dB(A)	56 dB(A)
Mains cable connection	Terminal block	
Weight approx.	20.4 kg	20.4 kg
Dimensions height x width x depth	838 x 400 x 206 mm	
Test seal	CE, UL/cUL	

Note

- 24 V_{DC}, 115 V_{AC} version or stainless steel Nema type 4X on request



For further information www.schroff.biz/oneclick
oneClick search code = Part no.



89045167

Dimension units: inch [mm]

Climate control - McLean heat exchangers

Outdoor air/air heat exchanger CLIMAGUARD TX38



45012003

- Cooling capacity 100 W/K
- Compact construction
- To mount inside or on the outside walls of a cabinet



NEW

Delivery comprises

Item	Qty	Description
1	1	Air/air heat exchanger (see technical data)
2	1	Case, St, zinc-plated, powder-coated, RAL 7035
3	1	Fixing material kit, user manual

Order Information

Description	Usable cooling capacity	Input voltage	Part no.
Outdoor air/air heat exchanger CLIMAGUARD TX38	100 W	230 V _{AC}	TX385626100
	100 W	48 V _{DC}	TX385648100

Technical data

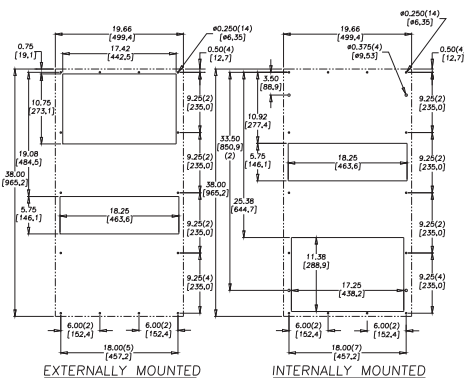
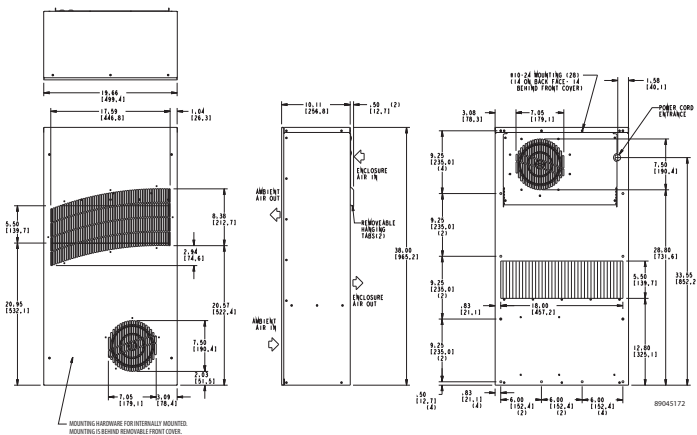
Voltage (± 10 %)	230 V_{AC}	48 V_{DC}
Frequency	50/60 Hz	–
Usable cooling capacity	100 W/K	100 W/K
Power consumption	276 W	279 W
Airflow volume of inner circuit at 50/60 Hz	722/810 m ³ /h	625 m ³ /h
Airflow volume of outer circuit at 50/60 Hz	738/878 m ³ /h	717 m ³ /h
Nominal current at 50/60 Hz	0.7/1.2 A	5.8 A
Operating temperature range	-40 °C ... +65 °C	
Noise level 1.5 m	64 dB(A)	64 dB(A)
Mains cable connection	Terminal block	
Weight approx.	30 kg	30 kg
Dimensions height x width x depth	965 x 500 x 257 mm	
Test seal	CE, UL/cUL	

Note

- 24 V_{DC}, 115 V_{AC} version or stainless steel Nema type 4X on request



For further information www.schroff.biz/oneclick
oneClick search code = Part no.



CUTOUT INSTRUCTIONS
(AS VIEWED FROM OUTSIDE OF ENCLOSURE)
NOTE: DASHED LINES REPRESENT HEAT EXCHANGER.

89045172

Dimension units: inch [mm]

Climate control – McLean heat exchangers

Outdoor air/air heat exchanger CLIMAGUARD TX52



45012004

- Cooling capacity 150 W/K
- Compact construction
- To mount inside or on the outside walls of a cabinet



NEW

Delivery comprises

Item	Qty	Description
1	1	Air/air heat exchanger (see technical data)
2	1	Case, St, zinc-plated, powder-coated, RAL 7035
3	1	Fixing material kit, user manual

Order Information

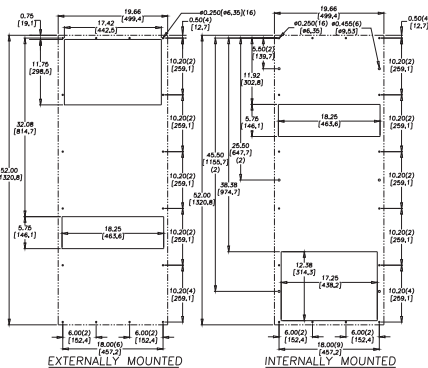
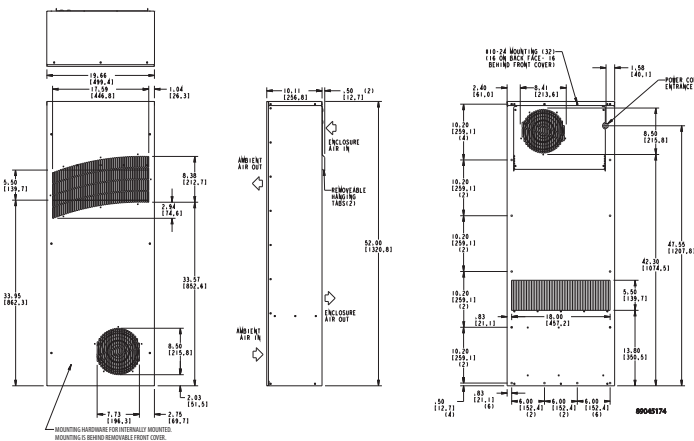
Description	Usable cooling capacity	Input voltage	Part no.
Outdoor air/air heat exchanger CLIMAGUARD TX52	150 W	230 V _{AC}	TX528326100
	150 W	48 V _{DC}	TX528348100

Technical data

Voltage (± 10 %)	230 V _{AC}	48 V _{DC}
Frequency	50/60 Hz	–
Usable cooling capacity, nominal	150 W/K	150 W/K
Power consumption)	771 W	375 W
Airflow volume of inner circuit at 50/60 Hz	841/905 m ³ /h	792 m ³ /h
Airflow volume of outer circuit at 50/60 Hz	917/1028 m ³ /h	929 m ³ /h
Nominal current at 50/60 Hz	2.2/3.4 A	7.8 A
Operating temperature range	-40 °C ... +65 °C	
Noise level 1.5 m	68 dB(A)	68 dB(A)
Mains cable connection	Terminal block	
Weight approx.	46 kg	46 kg
Dimensions height x width x depth	1321 x 500 x 257 mm	
Test seal	CE, UL/cUL	

Note

- 24 V_{DC}, 115 V_{AC} version or stainless steel Nema type 4X on request



Dimension units: inch [mm]

89045174



For further information www.schroff.biz/oneclick
oneClick search code = Part no.

- Overview 0
- Cabinets 1
- Wall mounted cases 2
- Accessories for cabinets and wall mounted cases 3
- Climate control 4**
- Desk-top cases 5
- Subracks/ 19" chassis ... 6
- Front panels, plug-in units .. 7
- Systems 8
- Power supply units 9
- Backplanes .. 10
- Connectors, front panel component system 11
- Appendix 12

Climate control – McLean Peltier air conditioners



45012019



PeltierBack

Anodised aluminium ribs for heat removal

Standards

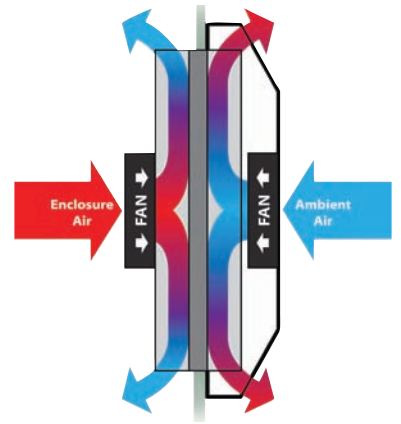
- UL/cUL recognized
- CE
- Type 12/3R/4, IP 65
- GOST
- Type 4x stainless steel optional



Version without case

Fields of application

- Outdoor/Telecoms
- Outdoor displays
- Enclosure cooling
- Batteries, security systems
- Mast mounting



45012007

PTPA-320_flow diagram

Cooling principle

Function

A Peltier element is a thermoelectric cooler that creates a temperature difference when current is passed through it. The Peltier effect occurs where two semiconductors are placed in contact. When a current is passed through two consecutive contact points between semiconductors, cooling is obtained - with heating on the opposite side.

Downloads and further important information can be found on the Internet under www.schroff.biz

Peltier air conditioners (Thermoelectric coolers)

- Cooling capacity from 60 W to 200 W
- Operating temperature from -40 °C to +55 °C
- Outdoor applications through maintenance-free operation and corrosion-resistant components (zinc-plated case, powder coated in RAL 7035)
- Heating function instead of cooling through current reversal
- Operation without filter



45012006

Models

- Standard models from stock
- Optionally with stainless steel case or without case

Thermoelectric coolers

60 W	4.52
100 W	4.53
200 W	4.54

Further air conditioners for industrial applications 4.56

Climate control - McLean Peltier air conditioners

Thermoelectric cooler, 60 W



45012006

- Cooling capacity 60 W (Peltier element)
- Very compact construction (without filter)
- Horizontal or vertical installation



NEW

Delivery comprises

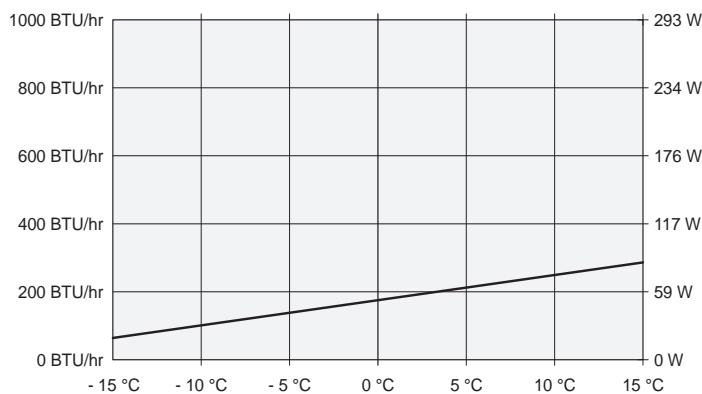
Item	Qty	Description
1	1	Air conditioner (see technical data)
2	1	Case, St, zinc-plated, powder-coated, RAL 7035
3	1	Mains supply with terminal strip (terminal block)
4	1	Fixing material kit, user manual

Order Information

Description	Usable cooling capacity	Input voltage	Part no.
Thermoelectric cooler, 60 W	52 W	24 V	TE090624010

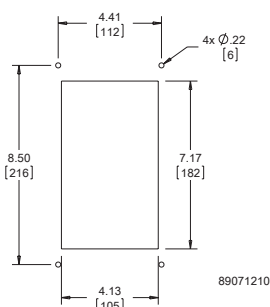
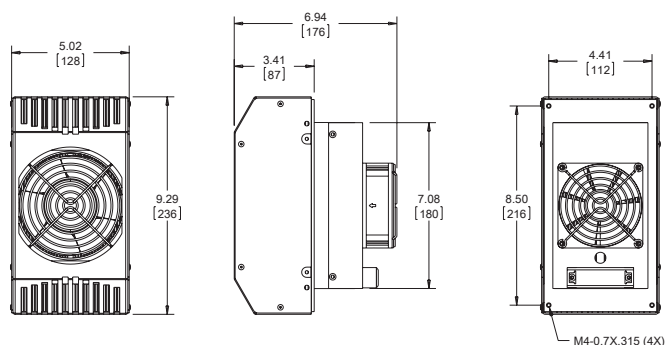
Technical data

Voltage	24 V_{DC}
Input voltage range	18 ... 27.6 V _{DC}
Usable cooling capacity with L 35 (internal temperature T _i) and L 35 (external temperature T _a) in accordance with DIN 3168 (EN 814 part 5)	52 W
Power consumption with L 35 (T _i) and L 35 (T _a)	89 W
Airflow volume internal circuit	41 m ³ /h
Airflow volume external circuit	136 m ³ /h
Heater output max.	64 W
Temperature range	-40 °C ... +55 °C
Ingress protection to EN 60 529	IP 65
UL type	12/3R/4
Noise level at a distance of 1.5 m	65 dB(A)
Cooling elements	Peltier
Mains cable connection	Terminal block
Weight approx.	3.6 kg
Dimensions height x width x depth	236 x 128 x 177 mm
Test seal	CE, UL/cUL, GOST



45012050

Temperature difference (interior T_i - exterior T_a)



89071210

89071210

Note

- Versions without case for internal fitting on request
- Stainless steel case on request



For further information www.schroff.biz/oneclick
oneClick search code = Part no.

Dimension units: inch [mm]

Climate control - McLean Peltier air conditioners

Thermoelectric cooler, 100 W



- Cooling capacity 100 W (Peltier element)
- Compact construction
- Horizontal or vertical installation



NEW

Delivery comprises

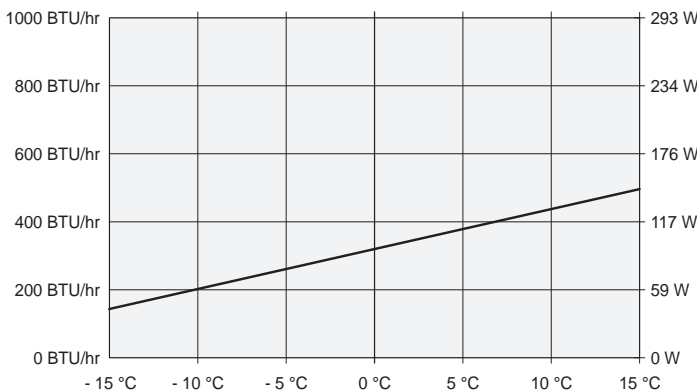
Item	Qty	Description
1	1	Air conditioner (see technical data)
2	1	Case, St, zinc-plated, powder-coated, RAL 7035
3	1	Mains supply with terminal strip (terminal block)
4	1	Fixing material kit, user manual

Order Information

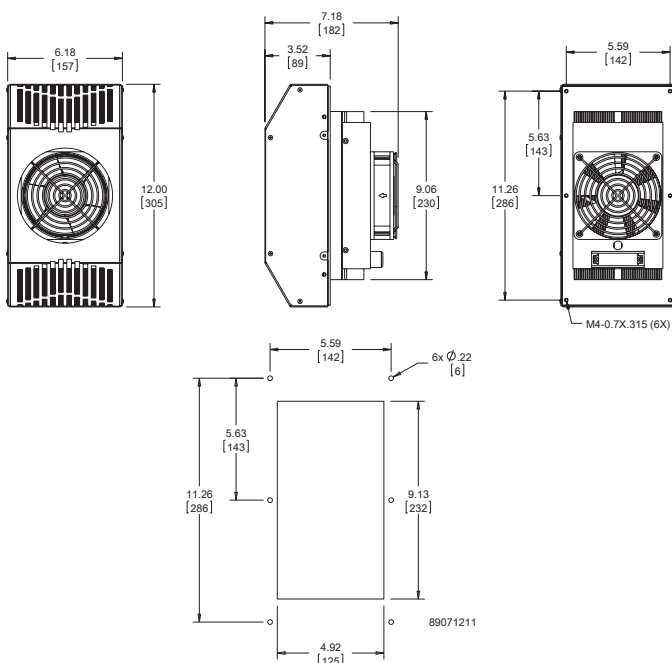
Description	Usable cooling capacity	Input voltage	Part no.
	W	V	
Thermoelectric cooler, 100 W	94	24	TE121024010
Thermoelectric cooler, 100 W	94	48	TE121048010

Technical data

Voltage	24 V_{DC}	48 V_{DC}
Input voltage range	18 ... 27.6 V _{DC}	40 ... 55.2 V _{DC}
Usable cooling capacity with L 35 (internal temperature T _i) and L 35 (external temperature T _a) in accordance with DIN 3168 (EN 814 part 5)	94 W	94 W
Power consumption with L 35 (T _i) and L 35 (T _a)	162 W	162 W
Airflow volume internal circuit	105 m ³ /h	105 m ³ /h
Airflow volume external circuit	146 m ³ /h	146 m ³ /h
Heater output max.	94 W	94 W
Temperature range	-40 °C ... +55 °C	
Ingress protection to EN 60 529	IP 65	
UL type	12/3R/4	
Noise level at a distance of 1.5 m	68 dB(A)	68 dB(A)
Cooling elements	Peltier	
Mains cable connection	Terminal block	
Weight approx.	5 kg	5 kg
Dimensions height x width x depth	305 x 157 x 182 mm	
Test seal	CE, UL/cUL, GOST	



Temperature difference (interior T_i - exterior T_a)



Note

- Versions without case for internal fitting on request
- Stainless steel case on request



For further information www.schroff.biz/oneclick
oneClick search code = Part no.

Dimension units: inch [mm]

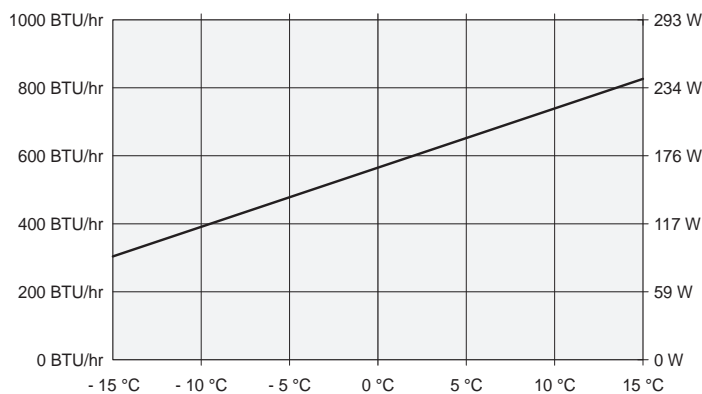
89071211

Climate control – McLean Peltier air conditioners

Thermoelectric cooler, 200 W

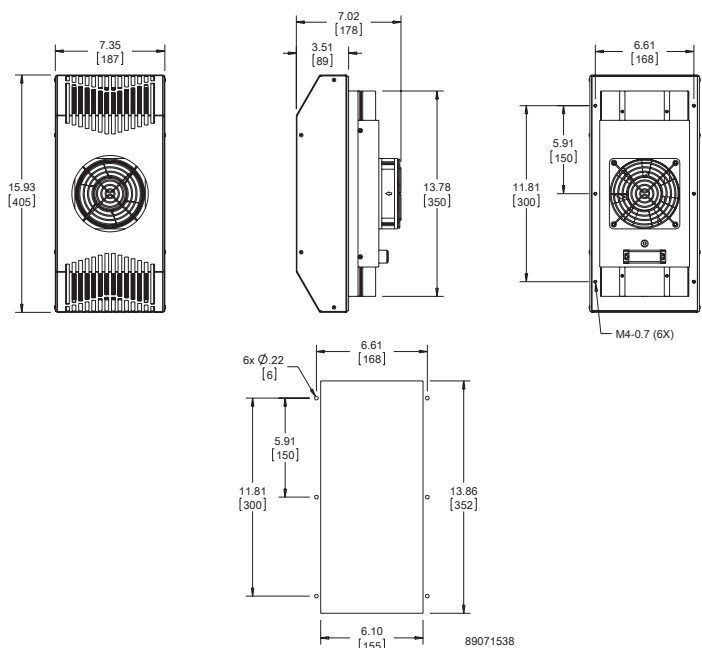


45012006



45012052

Temperature difference (interior T_i - exterior T_a)



89071538

Dimension units: inch [mm]

- Cooling capacity 200 W (Peltier element)
- Compact construction
- Horizontal or vertical installation



NEW

Delivery comprises

Item	Qty	Description
1	1	Air conditioner (see technical data)
2	1	Case, St, zinc-plated, powder-coated, RAL 7035
3	1	Mains supply with terminal strip (terminal block)
4	1	Fixing material kit, user manual

Order Information

Description	Usable cooling capacity W	Input voltage V	Part no.
Thermoelectric cooler, 200 W	166	24	TE162024010
Thermoelectric cooler, 200 W	166	48	TE162048010

Technical data

Voltage	24 V _{DC}	48 V _{DC}
Input voltage range	18 ... 27.6 V _{DC}	40 ... 55.2 V _{DC}
Usable cooling capacity with L 35 (interior temperature T_i) and L 35 (external temperature T_a) in accordance with DIN 3168 (EN 814 part 5)	166 W	166 W
Power consumption with L 35 (T_i) and L 35 (T_a)	162 W	162 W
Airflow volume internal circuit	105 m ³ /h	105 m ³ /h
Airflow volume external circuit	146 m ³ /h	146 m ³ /h
Heater output max.	146 W	146 W
Temperature range	-40 °C ... +55 °C	
Ingress protection to EN 60 529	IP 65	
UL type	12/3R/4	
Noise level at a distance of 1.5 m	68 dB(A)	68 dB(A)
Cooling elements	Peltier	
Mains cable connection	Terminal block	
Weight approx.	8.4 kg	8.4 kg
Dimensions height x width x depth	405 x 187 x 178 mm	
Test seal	CE, UL/cUL	

Note

- Versions without case for internal fitting on request
- Stainless steel case on request



For further information www.schroff.biz/oneclick
oneClick search code = Part no.

Climate control – McLean Peltier air conditioners

Overview 0

Cabinets 1

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Systems 8

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Connectors, front panel component system 11

Appendix 12

Climate control - McLean air-conditioners



McLean

- Over 30 years experience in industrial cooling
- McLean offers a worldwide sales, marketing, production and quality network for those clients who require a global infrastructure
- Wide selection of air conditioners, heat exchangers and thermoelectric coolers
- Your "coolest" partner for many markets



Product Reliability

- When you talk to McLean customers, one thing soon becomes clear: the reliability of the products
- Ingress protection to IP 56 prevents entry of dust or water
- The operating temperature range of - 40 °C to +55 °C allows applications in extreme environments
- 2-year warranty

Technical competence and support

- We have our own design facility and comprehensive test laboratory facilities (CFD modelling, sound chamber, airflow, IP, thermal simulation)
- Sales and project development by qualified technical personnel
- Modified, custom and special solutions on request



After-sales service

- Onsite warranty and repair services
- Spare parts warehouse
- Over 1000 qualified repair technicians worldwide

Further information on the Internet
www.McLeanCoolingTech.com

36112003 (PTPA-478 VSeriesMidsize 45012006 SchrankMcLean PTPA-104 custom application-retouched PTPA-104 McLeanParts store web)

More air conditioners for industrial applications



Side-mounted air conditioner, V series

- Cooling capacity from 400 W to 2000 W
- For indoor industrial applications
- Mains/line voltage 230 V_{AC}
- CE, GOST

Side-mounted and top cover air conditioner, Genesis series

- Cooling capacity from 230 W to 2000 W
- For indoor industrial applications
- Mains/line voltage 230 V_{AC}
- UL, cUL, CE, GOST



Side-mounted air conditioner, Proair

- Cooling capacity from 410 W to 2080 W
- For industrial applications in harsh and corrosive environments
- Mains/line voltage 230 V_{AC}
- UL, cUL, NEMA, CE, GOST

Side-mounted air conditioner, Spectracool

- Cooling capacity from 1260 W to 5660 W
- For indoor and outdoor industrial applications
- Mains/line voltage 115 V_{AC}, 230 V_{AC}, 400 V_{AC} (3-phase)
- UL, cUL, NEMA, CE, GOST, Telcordia GR-487



Side mounted air/air heat exchanger, Proair XR series

- Cooling capacity from 7 W/K to 150 W/K
- For indoor industrial applications
- Mains/line voltage 115 V_{AC}, 230 V_{AC}
- UL, cUL, NEMA, CE, GOST

Further information in the McLean EMEA catalogue www.schroff.biz

Overview 4.0

Cooling concepts 4.2

19" fan trays . . . 4.4

Air filtered fans 4.20

Air conditioners and air/air heat exchangers

Air conditioners (T series) 4.30

Air/air heat exchangers (Climaguard TX series) 4.44

Peltier air conditioners (thermoelectric coolers, TE series) 4.50

Other air conditioners for industrial applications 4.56

Accessories

Heaters 4.58

Fans 4.61

Speed control ... 4.62

Thermostats 4.63

Hygrostats 4.66

Air/water heat exchangers ... 1.224

Climate control – Accessories

Heaters from 30 W to 150 W



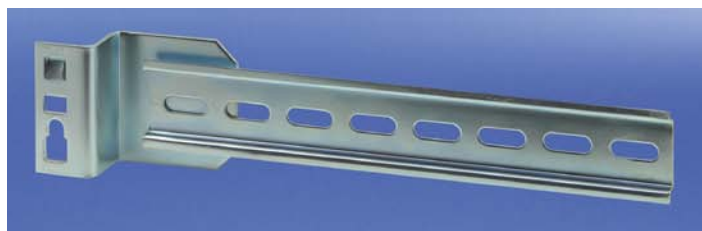
01102004

- Radiator heater (without fan)
- Simple and fast assembly with clip-on attachment and press-on terminal connection
- Wide input voltage range 110 ... 250 V_{AC}
- Temperature limiting with PTC resistor



Delivery comprises (completely assembled)

Item	Qty	Description
1	1	Heater element, voltage range 110 ... 250 V _{AC} ; resistor (PTC) self-regulating
2	1	Heating body, Al extrusion, anodised Fixing: clip for 35 mm DIN rail EN 50022
3	1	Connection: type 30, with connecting cable (3 x 0.5 mm ² , 300 mm long, black); type 45, 100, 150 with press-on terminal connection (for stranded/rigid wire 3 x 0.5 ... 2.5 mm ²)



00508013

Support rail

Order Information

Description	30 Part no.	45 Part no.	100 Part no.	150 Part no.
Heaters from 30 W to 150 W	60715-020	60715-021	60715-023	60715-030
Support rail DIN rail EN 50022 (35 mm), length 215 mm, 1 piece				20715-001

Technical data

	30 W	45 W	100 W	150 W
Heater output in W	30	45	100	150
Surface temperature in °C	approx. 100	approx. 105	approx. 130	approx. 140
Max. switch-on current in A	3,0	3,5	4,0	9,0
Type of protection	IP 54	IP 20	IP 20	IP 20
Class of protection	I	I	I	I
Dimensions h x w x d in mm	65 x 50 x 25	65 x 70 x 25	140 x 70 x 25	220 x 70 x 25
Weight in kg	0.2	0.3	0.5	0.7
Test seal	VDE, CE, UL (File E150057)	CE, UL (File E150057)	CE, UL (File E150057)	CE, UL (File E150057)
Assembly	Clip-on attachment for 35 mm DIN rail (EN 50022)			

Note

- Thermostat for heating see page 4.63
- Hygrostat see page 4.66



For further information www.schroff.biz/oneclick
oneClick search code = Part no.

Climate control – Accessories

Heater fans 475/550 W



01108030

- Heater with fan and thermostat
- Simple and fast assembly with clip-on attachment
- 3-pin terminal clamp, separate heater/fan connection
- Thermostat from 0 ... 60 °C
- Temperature limiting with PTC resistor



Delivery comprises (completely assembled)

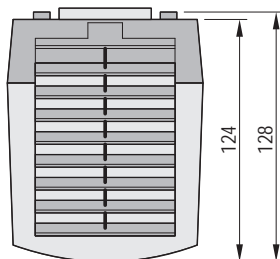
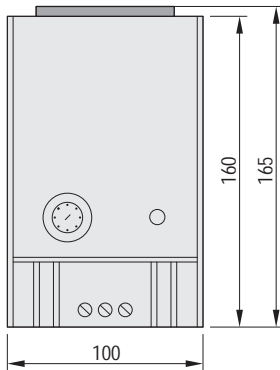
Item	Qty	Description
1	1	Plastic housing, polycarbonate (RAL 9002, grey white), clip for 35 mm DIN rail EN 50022
2	1	Heater element, 230 V _{AC} , resistor (PTC) self-regulating
3	1	Thermostat
4	1	230 V _{AC} fan

Order Information

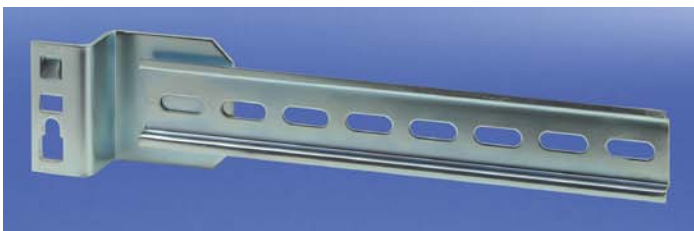
Description	Part no.
Heater 475 W	60715-017
Heater 550 W	60715-018
Support rail DIN rail EN 50022 (35 mm), length 215 mm, 1 piece	20715-001

Technical data

Voltage range	230 V _{AC}			
	50 Hz	60 Hz	50 Hz	60 Hz
Frequency	50 Hz	60 Hz	50 Hz	60 Hz
Heater output	475 W	550 W	550 W	650 W
Air capacity of axial fan	35 m ³ /h	39 m ³ /h	45 m ³ /h	50 m ³ /h
Current at switch-on approx.	11 A		13 A	
Weight	0.9 kg		1.1 kg	
Heater element	Resistor (PTC), self-regulating			
Connection	3-pin connecting terminal, 2.5 mm ² , separate connection heating/fan			
Thermostat	Adjustment range 0 ... 60 °C			
Control lamp of control system	Glow lamp			
Temperature control	In the event of fan failure			
Type of protection	IP 20			
Class of protection	II			
Assembly	Clip-on attachment for 35 mm DIN rail (EN 50022)			
Dimensions	Height 165 mm, width 100 mm, depth 128 mm			



01108069



00508013

Support rail



For further information www.schroff.biz/oneclick
oneClick search code = Part no.

Climate control – Accessories

Heater fan 400 W, modular



Example of a complete heater unit:
1: heater, 2: fan, 3: protective grille, 4: connection cable

01108007

- Modular system consisting of:
heater element, fan, protective grille and connecting cable
- Fan not included in delivery extent; please order fan with desired air capacity separately
- Simple and fast assembly with clip-on attachment
- Overheating protection through thermal switch



Delivery comprises (completely assembled)

Item	Qty	Description
1	1	Heater element, high-performance cartridge
2	1	Connecting cable fan - heating distributor, length 0.3 m
3	1	GND/earth cable, ring tag - open end, length 0.3 m
4	1	Clip-on attachment for DIN rail with assembly kit

Order Information

Description	115 V _{AC}	230 V _{AC}
	Part no.	Part no.
Heater fan 400 W, modular	60715-028	60715-029
Support rail DIN rail EN 50022 (35 mm), length 215 mm, 1 piece		20715-001

Technical data

Voltage range	115 V _{AC}	230 V _{AC}
Current at switch-on	3.5 A	1.8 A
Heater output	400 W	
Air capacity m ³ /h	Please choose desired fan	
Surface temperature with fan	Approx. 140 °C	
Type of protection	IP 20	
Class of protection	I, with GND/earthing	
Dimensions: height x width x depth in mm	22 x 120 x 160	
Assembly	Clip for 35 mm DIN rail EN 50022	

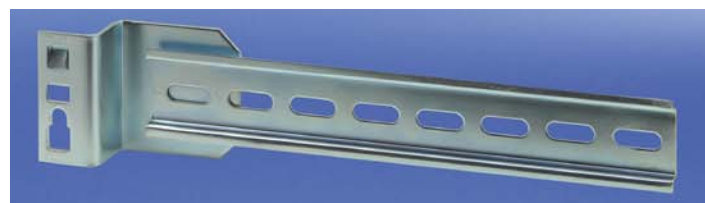
Note

- **Attention:** Danger of overheating, never use heater without fan
- Fan see page 4.61
- Thermostat for heating see page 4.63
- Hygrostat see page 4.66



Heater element

01108006



Support rail

00508013



For further information www.schroff.biz/oneclick
oneClick search code = Part no.

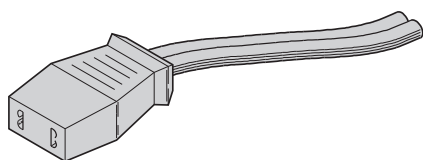
Climate control – Accessories

AC fans for heating 400 W

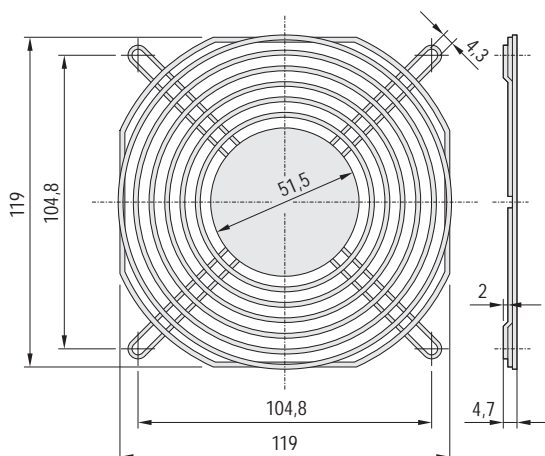


01108005

Connecting cable



KTA43091



01108055

Protective grille

- The fan is screwed below the heater and the cable is connected to the heater (please order connecting cable and protective grille separately)

Delivery comprises

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

Order Information

	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
PVC (2 x 0.75 mm ²), 1 m long with 2 Faston connectors				21101-246
2.8 x 0.5 mm to DIN 46343 T1, 1 piece				
Protective grille, metal, to screw-on				60197-019

Dimensions AC fans

Type	Type A		Type B		Type C	
	50	60	50	60	50	60
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 x depth 119 mm)	25		25		38	

Note

- Please order connection cable and protective grille separately



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Climate control – Accessories

Speed control for fans with C13 plug



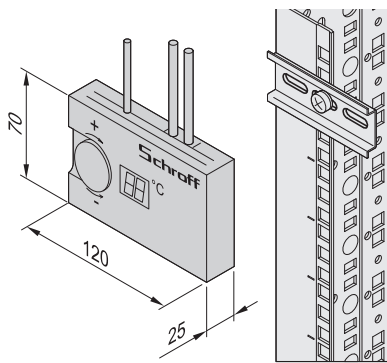
01111001

- Suitable for all AC fans and fan units (up to 300 W) with IEC 60320 C13 plug (plug & play)
- Simple to mount on the support rail provided
- Simple adjustment of switch-on temperature (with knob and digital display)
- External sensor can be fitted at a desired measurement point
- Open-collector output (parametrisable)
 - Alarm output (active/passive)
 - DC fans (PWM output)
 - Remote display (via optional digital display with front panel)



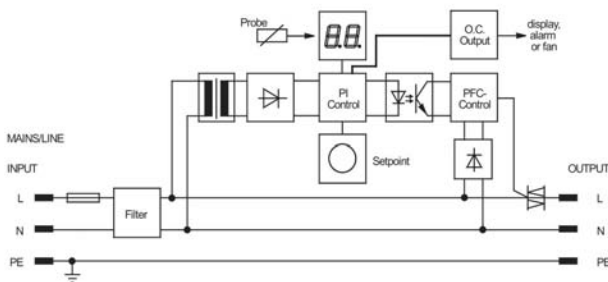
01111002

Speed controller with connecting cables



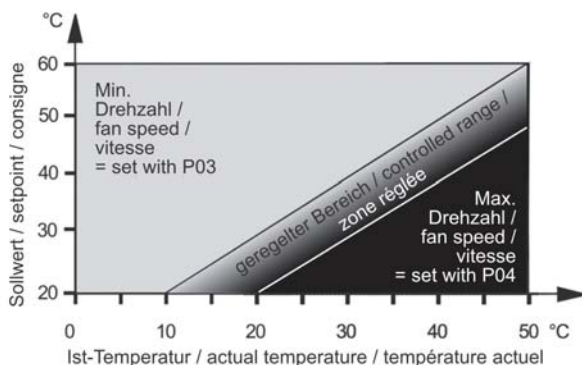
01105055

Block diagram



01111050

Speed varies in relation to temperature



01111051

Delivery comprises

NEW

Item	Qty	Description
1	1	Speed controller; input/output voltages 115 ... 240 V _{AC} , see Technical Data
2	1	Temperature sensor, cable length 1.5 m
3	1	Fan cable, 2 m, with IEC 60320 socket
4	1	Mains cable, 3 m, with connecting plug
5	1	Support rail, St, zinc-plated (EN 50022)
6	1	Assembly kit

Order Information

Speed control for fans with C13 plug	Part no.
Mains cable SCHUKO/UTE plug	60715-005
Mains cable IEC 60320 C13 plug	60715-006
Accessories	
Thermostat with digital display 230 V _{AC} , 1 piece	Page 4.65
Thermostat with digital display 115 V _{AC} , 1 piece	Page 4.65
Connecting cable for DC fans or alarm output Length 2 m, 2-wire (0.34 mm ²), 1 piece	60715-007

Technical data

Voltage range	115 ... 240 V _{AC} (90 ... 264 V _{AC})
Frequency	48 ... 62 Hz
Power consumption	max. 4 VA
Display	LCD display, height 13 mm, red
Max. connection power	300 W (230 V _{AC}), 150 W (115 V _{AC})
Max. continuous current	1.3 A
Adjustment range	+20 ... +60 °C with potentiometer
Fan speed frequency	25 ... 100 %
Sensor	External NTC resistor
Sensor connection	AMP plug contact and cable, 1.5 m, 2 x 0.22 mm
In case of sensor failure	Max. speed
Fan connection	Cable 2 m with C13 IEC 60320 socket
Open-collector output	AMP plug contact, programmable function, V _{max.} 30 V _{DC} , I _{max.} 30 mA
Mains connection	Cable 3 m with plug
Mechanics	Case, IP 30, plastic, weight 0.5 kg, mounts on horizontal rail with lip DIN EN 50022
Dimensions	Width 120 mm, height 70 mm, depth 25 mm
Environmental conditions	0 ... 60°C, max. 85 % rel. humidity, non-condensing

Note

- Thermostat with digital display, see page 4.65

Climate control – Accessories

Thermostat with integrated temperature sensor



- To control fans or heaters
- Adjustment range 5 ... 60 °C
- Individual adaptation with three separate components: thermostat (for cooling or heating), assembly material, connecting cable (IEC connector or ferrules)
- 2 versions
 - for heating
 - for cooling



Delivery comprises

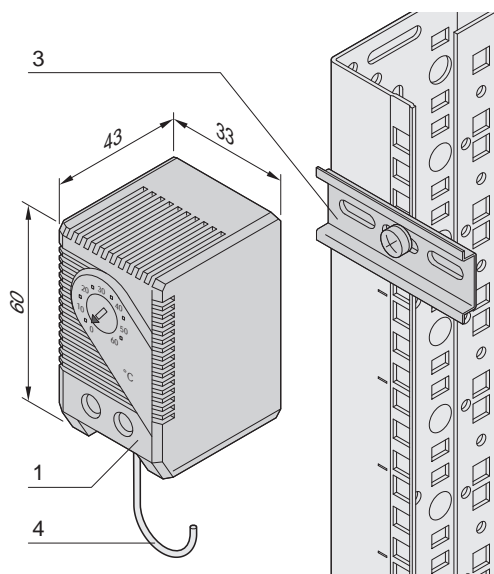
Item	Qty	Description
1	1	Thermostat, width 33 mm, height 60 mm, depth 43 mm; clip-on attachment for 35 mm DIN rail EN 50022, switched voltage 120 ... 250 V _{AC}
2	1	User manual

Order Information

Description	Part no. for cooling	Part no. for heating
Thermostat with integrated temperature sensor	60715-136	60715-137

Accessories

Item 3 DIN rail (EN 50022) 35 mm; length 75 mm; with fixing materials kit, PU 1 set	21120-178
Item 4 Connection cable, SCHUKO/UTE connector, cable length 1.5 m; connection on thermostat/hygrostat, 2-pin, ferrules; connection on fan IEC socket; 1 piece	62150-201
Item 4 Connection cable, SCHUKO/UTE connector, cable length 1.5 m; connection on thermostat/hygrostat, 2-pin, ferrules; connection on fan/heater, 3-pin, ferrules, 1 piece	62150-264



Dimensions

Thermostat	for cooling (make contact), blue control button	for heating (break contact), red control button
Adjustment range	0 ... 60 °C	
Switching temperature difference	7 K (± 4 K tolerance)	
Sensing element	Thermobimetal (snap-action contact)	
Contact resistance	<10 mΩ	
Lifespan	>100000 cycles	
Max. switch performance	10 A at 250 V _{AC} , 15 A at 120 V _{AC} ; 30 W at DC voltage	
Connection	2-pin clamp, up to 2.5 mm ² , torque max. 0.5 Nm	
Case	Plastic, in accordance with UL 94 V-0, light grey	
Dimensions	Height 60 mm, width 33 mm, depth 43 mm	
Assembly	Clip for 35 mm DIN rail, EN 50022	
Weight	40 g	
Operating/storage temperature	-20 ... +80 °C/-45 ... +80 °C	
Protection class	IP 20	



Connection cable: 2-pin, ferrules - IEC socket



Connection cable: 2-pin, ferrules - 3-pin, ferrules



For further information www.schroff.biz/oneclick

oneClick search code = Part no.

Climate control – Accessories

Thermostat with external temperature sensor



01102007

- To control heaters or fans
- External sensor can be positioned near the critical sub-assembly
- Adjustment range 20 ... 60 °C, switch difference 3 ... 10 K



Delivery comprises

Item	Qty	Description
1	1	Thermostat with external temperature sensor, sensor length approx. 1.7 m
2	1	Mounting plate for cabinet assembly, Al, 2.5 mm
3	1	Assembly kit

Order Information

Description	Part no.
Thermostat with external temperature sensor	20715-003

Technical data

Dimension (height x width x depth)	93 mm x 68 mm x 44 mm
Adjustment range	20 ... 60 °C
Switching difference	3 ... 10 K
Mains/line voltage	90 ... 260 V _{AC}
Contact load (ohmic load/inductive load)	24 A/10 A
Contacts	Change-over, single pin
Assembly	Screw-fixed



For further information www.schroff.biz/oneclick
oneClick search code = Part no.

Thermostat with digital display



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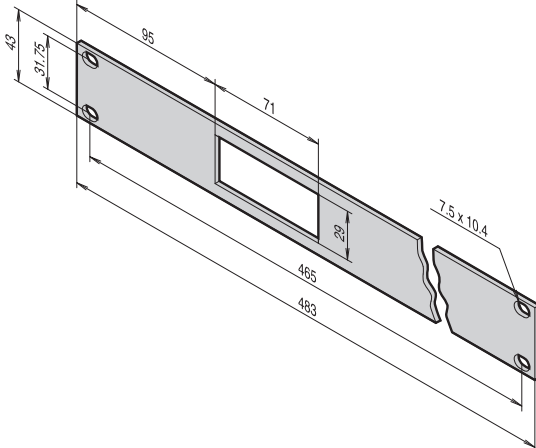
- Adjustment range from -50 to +100 °C (switch difference 0 ... 10 °C)
- Display switchable from °C to °F
- Programmable (secured against unauthorised operation)
- 3-character red segment display



Order Information

Description	Part no.
Thermostat with digital display, 230 V _{AC}	60715-132
Thermostat with digital display, 115 V _{AC}	60715-133
Front panel 1 U, RAL 7035 with cut-out for thermostat	30118-315
Front panel 1 U, anodised with cut-out for thermostat	30118-267
Front panel 1 U, RAL 7021 with cut-out for thermostat	30118-360

Front panel 1 U



SZA45550

Technical data

Operating voltage	115 V _{AC} or 230 V _{AC}
Power consumption	Approx. 3.5 W
Dimensions	Height: 35 mm, width: 76 mm, depth: 59 mm
Assembly cut-out	28.8 × 70.5 mm
Adjustment range	-50 ... +100 °C
Switch difference	0 ... 10 K selectable
Data safeguarding at power failure	Non-volatile memory
Contact load (ohmic load/inductive load)	8 A/3 A (ohmic/inductive load)
Input/sensor	PTC resistance, -55 ... +120 °C, cable length 3 m
Contacts	Relay, changeover contact, single pin
Protection class to front	IP 54
Connection	Screw-on terminals, 2.5 mm ²
Fixing	With clamping bracket
Type of assembly	Can be screwed on



For further information www.schroff.biz/oneclick
oneClick search code = Part no.

Hygrostat



01108003

- Switches fans or heaters when relative air humidity is exceeded or falls short of 65 %
- Visual display when relative air humidity exceeds 65 %
- Individual adaptation with three separate components: hygrostat, assembly material, connecting cable (input with SCHUKO connector; output with IEC connector or ferrules)
- 2 supply voltages
 - 115 V_{AC}
 - 230 V_{AC}

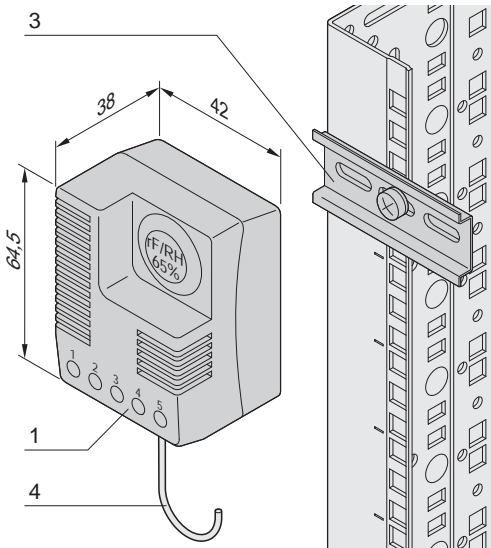


Delivery comprises

Item	Qty	Description
1	1	Hygrostat, width 42 mm, height 64.5 mm, depth 38 mm; clip-on attachment for 35 mm DIN rail EN 50022
2	1	User manual

Order Information

Description	Part no.	Part no.
	230 V _{AC}	115 V _{AC}
Hygrostat	60715-138	60715-139
Item 3 DIN rail (EN 50022) 35 mm; length 75 mm; with fixing materials kit, PU 1 set		21120-178
Item 4 Connection cable, SCHUKO/UTE connector, cable length 1.5 m; connection on thermostat/hygrostat, 2-pin, ferrules; connection on fan IEC socket; 1 piece		62150-201
Item 4 Connection cable, SCHUKO/UTE connector, cable length 1.5 m; connection on thermostat/hygrostat, 2-pin, ferrules; connection on fan/heater, 3-pin, ferrules, 1 piece		62150-264



01108051

Dimensions

Supply voltage	115 V _{AC}	230 V _{AC}
Default setting	65 % relative air humidity	
Switch difference	5 % air humidity (± 1 % air humidity tolerance at 25 °C)	
Switch contact	Changeover contact (relay)	
Lifespan	> 100000 cycles	
Max. switch performance	8 A	8 A
Mains connection	2-pin clamp, up to 2.5 mm ² , torque max. 0.5 Nm	
Output change-over relays	3-pin clamp, up to 2.5 mm ² , torque max. 0.5 Nm	
Case	Plastic, in accordance with UL 94 V-0, light grey	
Dimensions	Height 64.5 mm, width 42 mm, depth 38 mm	
Assembly	Clip for 35 mm DIN rail, EN 50022	
Weight	65 g	
Operating/storage temperature	0 ... +60 °C/-20 ... +70 °C	
Max. storage humidity	90 % air humidity	
Type of protection	IP 20	

01108009



Connection cable:
2-pin, ferrules - IEC socket



Connection cable: 2-pin, ferrules - 3-pin, ferrules

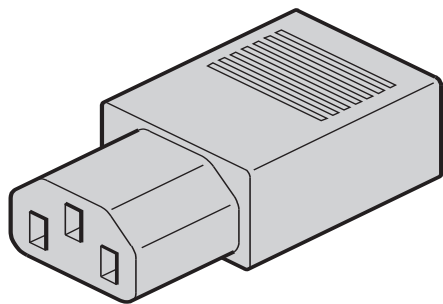
01108010



For further information www.schroff.biz/oneclick
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Climate control – Accessories

IEC input plug



- For connection of fans
- Bolted housing made of heat-resistant plastic (UL 94 V-0)
- 10 A/250 V_{AC}, protection class I

Order Information

Description	Part no.
IEC input plug	60715-046

KTA45246



For further information www.schroff.biz/oneclick
oneClick search code = Part no.

