

4: 19" Ventilations



4.1 Fan Modules 19"

- The fan modules are designed for vertical ventilation of 19" cabinets.
- Modules for depths of 160 mm and 220 mm have 3 fans
- These are arranged in an optimum configuration to ensure cooling of the PCBs over the entire width of the rack
- Fan modules with 19" front panels are designed for use in 19" racks and cabinets
- They can be run in and out on supporting rails
- The modules have a 3-pole appliance inlet for connection to the mains

4.1.1 Fan Modules Vertical 19"

- 230V/50Hz (115 V on request)
- **Scope of delivery:**
 - 1 fan module 19"
- Assembly material for mounting fan module in cabinet see below



4.1.1.1 Assembled, Ready for Connection

Height	Fan Type (Details see 4.2.5.2)	Card Depth		Part-No.
		mm	inch	
1 U	69-430-20	160	6.29	27-100-02
		220	8.66	27-101-02
2 U	1925-79	160	6.29	27-200-02
		220	8.66	27-201-02

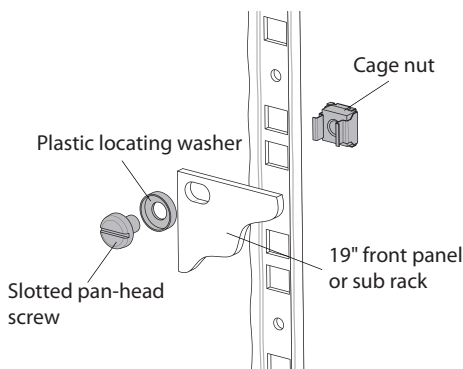
4.1.1.2 in Kit Form, without Fan and Wiring

Height	Card Depth		Part-No.
	mm	inch	
1 U	160	6.29	27-100-85
	220	8.66	27-101-85
2 U	160	6.29	27-200-85
	220	8.66	27-201-85

4.1.1.3 Assembly Material

- For mounting fan modules in cabinets

Description	Part-No. 1 pc.	Part-No. 100 pcs.
Slotted pan-head screw M6 x 8	5561-08	1901-51
Slotted pan-head screw M6 x 12	5561-12	1901-52
Plastic locating washer	61-007	63-090
Cage nut M6	5625-06	5625-06-2



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4.1.2 Fan Modules Horizontal 19"

- 230 V/50 Hz (115 V on request)
- **Scope of delivery:**
 - 1 fan module
- Assembly material for mounting fan module in cabinet see below

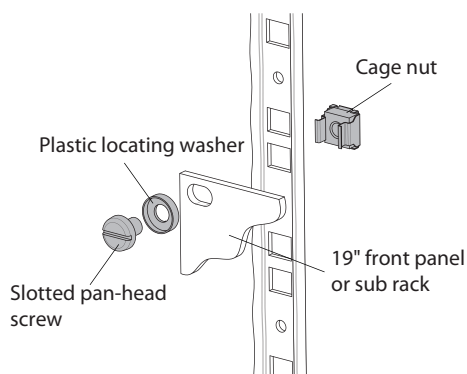


4.1.2.1 Assembled Ready for Connection

Height	Fan Type (Details see 4.2.5.2)	Card Depth		Part-No.
		mm	inch	
2 U	1925-79	160	6.29	27-250-02
		220	8.66	27-251-02

4.1.2.2 in Kit Form, without Fan and Wiring

Height	Card Depth		Part-No.
	mm	inch	
2 U	160	6.29	27-250-85
	220	8.66	27-251-85

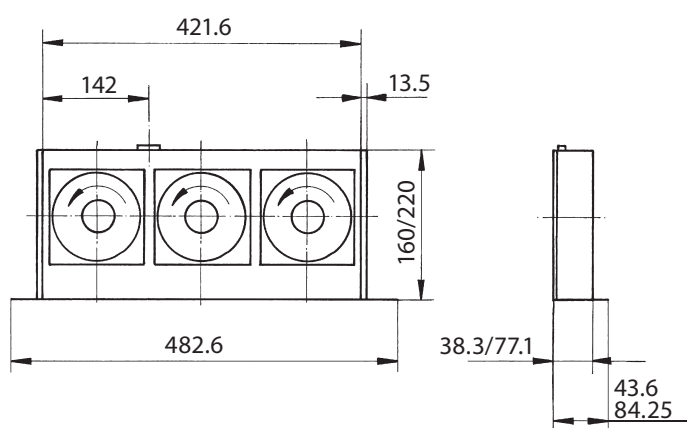


4.1.2.3 Assembly Material

- For mounting fan modules in cabinets

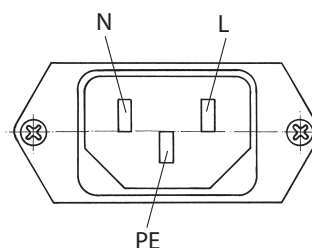
Description	Part-No. 1 pc.	Part-No. 100 pcs.
Slotted pan-head screw M6 x 8	5561-08	1901-51
Slotted pan-head screw M6 x 12	5561-12	1901-52
Plastic locating washer	61-007	63-090
Cage nut M6	5625-06	5625-06-2

4.1.3 Line Drawing and Technical Information



Power Supply

AMP connector, "M" series, 14 pole (pin)
Standard in fan modules 84 HP



- N -blue
- L -brown
- PE -green / yellow

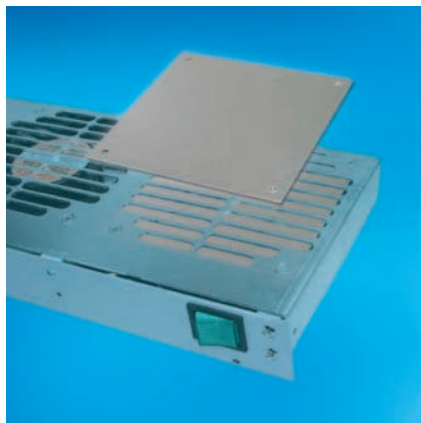
1 AMP connector series M can be assembled additionally



4.2 Accessories for Ventilation

4.2.1 Cover Panel

- For partial ventilation of a rack, the cover panel can be mounted in place of a fan.
- Aluminium, raw
- Dimension: 120 x 120 mm (4.72 x 4.72)
- **Scope of delivery:**
 - 1 cover panel
- Assembly material see below.



4.2.1 Cover Panel

Description	Part-No.
Cover panel	27-041

4.2.1.1 Assembly Material

- To mount one cover panel onto a fan module
- **Scope of delivery:**
 - 4 countersunk cross recessed screws M4x10
 - 4 earthing nuts M4

Description	Part-No.
Set for 1 cover panel	63-823

4.2.2 Handles for Fan Modules 19"

- **Scope of delivery:**
 - 1 handle
- Per Handle 2 screws are needed, see below



4.2.2 Handles for Fan Modules 19"

- **Scope of delivery:**
 - 1 handle

For Height	Description	Part-No.
1 U	U-handle diecast zinc	60-541
2 U	U-handle aluminium	60-527

Assembly Material

Description	Part-No.	100 pcs.
Cross recessed cylinderhead earthing screw M4 x 10	61-260	1904-12
Torx roundhead earthing screw M4 x 10, size T20	5443-01	5443-01-2
Cross recessed countersunk screw M4 x 10	5342-10	1906-24
Torx countersunk screw M4 x 10, size T20	5470-26	5470-26-2

4.2.3 Front Filter Set

- The front filter is fastened to the front panel of the fan body or the fan frontpanel 2 U / 84 HP using two captive screws
- The filter mat can be re-used after washing in water with a temperature of up to approx. 40°C
- Replacement filter mats can be ordered as spare parts (packet with 3 filter mats)



4.2.3 Front Filter Set

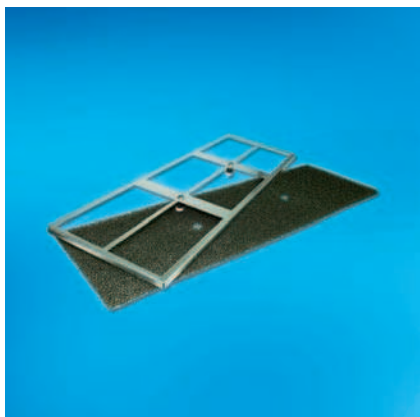
- **Scope of delivery:**
 - 1 filter cradle, aluminium, clear anodised
 - 1 filter mat, polyester
 - 1 filter mat support, steel galvanised
 - 1 set of assembly material

Description	Part-No.
Front filter set for 19" fan module	27-281
Replacement filter for 19" front filter	63-822-04*

* Packet with 3

4.2.4 Filter Set on Pressure Side of Fan Body

- The filter set is fastened to the pressure side of the fan body by means of two quick-release fasteners
- The filter mat can be regenerated by washing in water at approx. 40°C
- The filter set can only be used with 2 U / 19" fan modules
- Replacement filter mat can be ordered as spare part (packet with 10 filter mats)



4.2.4 Filter Set on Pressure Side of Fan Body

- **Scope of delivery:**
 - 1 filter catch, steel
 - 1 filter mat, polyester
 - 2 fastening elements

Description	Part-No.
Filter for fan module 19" / 2 U	27-280
Replacement filter	63-822-03

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4.2.5 Fans



4.2.5.1 Fans 12V DC

- Brushless
- Sealed ball bearings
- Polarity and electronic locked rotor protection (autorestart)
- Air exhaust in over struts
- (can be mounted directly on a perforated front panel)
- Connector 2.8 x 0.5 (except fan with speed sensor)
- Fan case and wheel plastic UL94 V-0
- Operating temperature -20 °C to +70 °C
- CE, UL, CSA, VDE standard
- Life expectancy $L_{10} = 70\,000$ hours at 40 °C
- Special configuration with speed sensor

VDC	Voltage range VDC	Power consumption W**	Current consumption mA**	Rotational speed min ⁻¹	Noise dB (A)**	max. stat. pressure mm H ₂ O	Flow rate m ³ /h	Dimensions						Part-No.
								A		B		C		
								mm	inch	mm	inch	mm	inch	
12	6.0-13.8	3.80	315	3200	41	4.9	93	92.0	3.62	82.5	3.24	25.0	0.98	69-430-23
12	6.0-13.8	1.80	150	1600	29	2.4	102	119.0	4.68	105.0	4.13	25.0	0.98	69-430-25
12	6.0-13.8	6.80	570	2400	39	5.0	153	119.0	4.68	105.0	4.13	25.0	0.98	69-430-26
12	6.0-13.8	8.40	700	3200	46	8.3	200	119.0	4.68	105.0	4.13	38.4	1.51	69-430-27
12	6.0-13.8	8.40	700	3200	46	8.3	200	119.0	4.68	105.0	4.13	38.4	1.51	69-430-28*
12	6.0-13.8	3.80	315	3200	41	4.8	93	92.0	3.62	82.5	3.24	25.0	0.98	69-430-32*

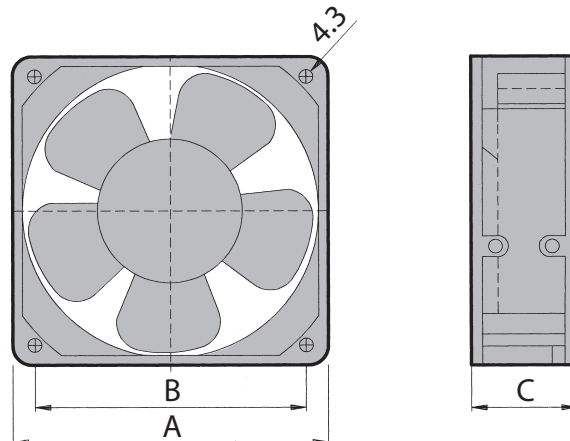
* with speed sensor
** with free exhaust

4.2.5.2 Fans 230V/ 115V AC

- Split-pole motor
- Sealed ball bearings
- Impedance protection resp. integrated thermal switch
- Connector 2.8 x 0.5
- Air exhaust in over struts (can be mounted directly on a perforated front panel)
- Fan case: aluminium
- Fan wheel: plastic UL94 V-0
- Operating temperature -40 °C to +70 °C
- CE, UL, CSA, VDE standard
- Life expectancy $L_{10} = 50\,000$ hours at 40 °C

VAC	Freq. Hz	Power consumption W**	Current consumption mA**	Rotational speed min ⁻¹	Noise dB (A)**	max. stat. pressure mm H ₂ O	Flow rate m ³ /h	Dimensions						Part-No.
								A		B		C		
								mm	inch	mm	inch	mm	inch	
230	50/60	14.0/11.0	100/90	2300/2700	34/38	4.25/4.25	108/120	119.0	4.68	105.0	4.13	25.0	0.98	69-430-20
230	50/60	13.0/10.0	90/70	2600/3100	34/38	6.0/4.25	48/59	92.0	3.62	82.5	3.24	25.0	0.98	69-430-30
115	50/60	12.0/9.0	170/130	2600/3100	34/38	6.0/4.25	48/59	92.0	3.62	82.5	3.24	25.0	0.98	69-430-31
115	50/60	15.0/13.0	250/210	2600/2900	37/41	9.0/7.3	162/192	119.0	4.68	105.0	4.13	38.0	1.51	69-430-41
115	50/60	14.0/11.0	190/160	2300/2700	34/38	4.25/4.25	108/120	119.0	4.68	105.0	4.13	25.0	0.98	69-430-43
230	50/60	15.0/14.0	120/100	2600/2900	37/41	9.0/7.3	162/192	119.0	4.68	105.0	4.13	38.0	1.51	1925-79

** with free exhaust



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4.2.6 Fan Speed Control

- Temperature regulator with acoustic alarm signal
- Simple conversion to external optical signal
- Range of regulation
 - fan regulating range: min. speed up to 34 °C
max. speed at 48 °C
 - Alarm regulating range: adjustable between 45 °C and 54 °C
- Voltage 12 V/DC, voltage range 10-14 VDC
- Temperature regulator current consumption 50 mA
- Max. current consumption 0,6 A
- Operating temperature 0 °C to 65 °C
- Storage temperature -20 °C to +80 °C



6.6.3 Fan Speed Control

Description	Part-No.
Fan speed control (incl. wiring)	7731-02

