19" TiRAX cabinet system from page 11

19" NETcell cabinet system from page 65

Open 19" racks from page 83

19" floor-standing / wall-mounted enclosure VARi IT from page 97

Wall-mounting enclosure systems from page 111

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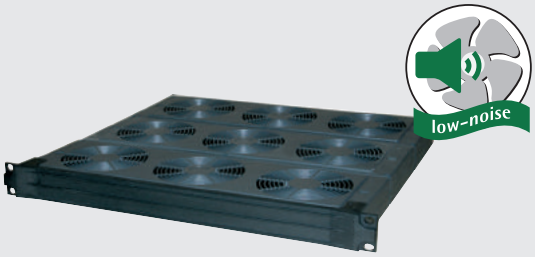
General accessories / distribution technology from page 177

You can read more about products from the apra-group at www.apra-norm.com

Air conditioning technology



Air conditioning units

from page 131

- standard applications and individual solutions for all our cabinets and wall-mounting enclosures with protection class IP 54
- low servicing costs thanks to filterless technology
- extremely compact unit sizes with high efficiency

Plastic fan module

from page 132

- for high-volume ventilation of enclosures or cabinets
- compact dimensions
- easy assembly
- sophisticated modularity protected by a utility patent
- also available as speed-controlled variants
- 19"-compatible
- also available as "Silent" low-noise fan

Roof ventilation

from page 134

- low noise
- large air flow
- Alternative to cabinet air conditioner
- low noise level - suitable for the office environment

apra cooling system

from page 135

- air/water heat exchanger
- optimum cooling for server racks with a high packing density
- up to 56 KW
- precision air conditioning for data centres

Air conditioning units

- optimum temperature for maximum efficiency
- standard applications and individual solutions for virtually all our cabinets and wall-mounting enclosures with protection class IP 54
- subsequent installation of cooling devices: the units are supplied ready to use (mounting material included in the scope of delivery).
- low servicing costs thanks to filterless technology
- extremely compact unit sizes with high efficiency
- heat build-up inside the cabinet is prevented by the continual circulation of cabinet air.
- all units use CFC-free refrigerant.
- cooling capacity acc. to EN814 Ta35 Ti35
- integrated electronic control unit and thermostat

Material:
enclosure: sheet metal
front panels: plastic
Finish:
RAL 7035 light grey
Delivery
- operating instructions
- mounting materials including drilling template
- connector plug

Cooling units with higher specifications and systems with a water recool unit are also available on request.

Cooling System

Wall mounting/installation				
Cooling capacity W	**Voltage / frequency** V/Hz	**Dimensions H x W x D** mm	**Noise level** dB(A)*	**Order no.**
380	230 / 50-60	460 x 285 x 180	60	235-200-08
1050	230 / 50-60	950 x 400 x 233	65	235-200-07
2050	230 / 50-60	1265 x 400 x 236	65	235-200-05
2900	230 / 50-60	1270 x 500 x 336	70	235-200-18
3850	230 / 50-60	1270 x 500 x 336	70	235-200-19
Top mounted				
410	230 / 50-60	264 x 259 x 486	60	235-200-10
1550	230 / 50-60	415 x 401 x 567	65	235-200-12
2050	230 / 50-60	415 x 401 x 567	65	235-200-14
3850	230 / 50-60	496 x 492 x 797	75	235-200-22

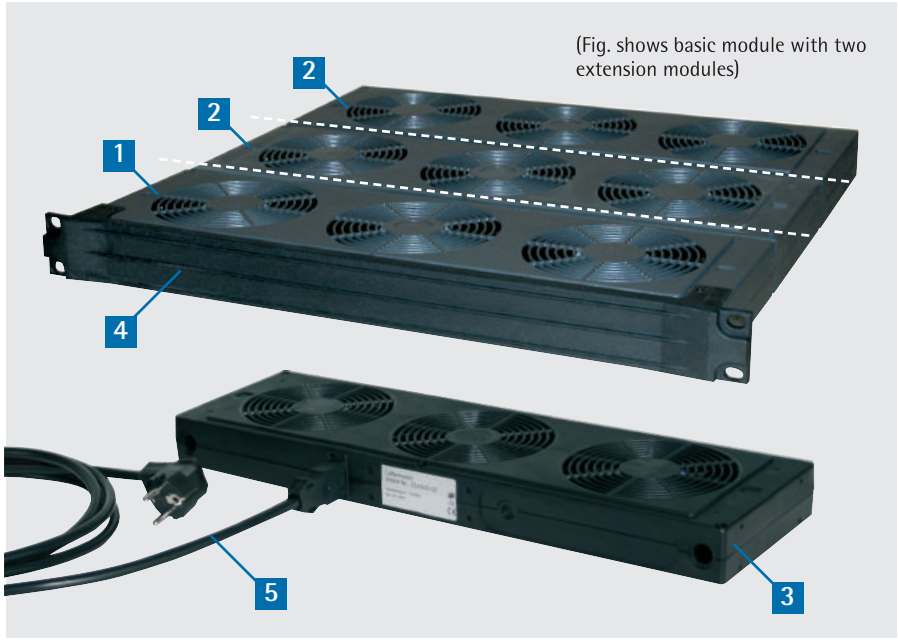
* The noise level of the cooling units is measured acc. to EN ISO 3744, but it does not take into account the installation conditions of the units on the rack. Therefore the noise level can be considerably higher due to the operating environment and installation conditions.

Heating system

Cabinet heating systems (excl. thermostat)			
Heat capacity W	**Voltage/frequency** V / Hz	**Dimensions (H x W x D)** mm	**Order no.**
100	230 / 50 - 60	182 x 70 x 50	235-200-09
150	230 / 50 - 60	262 x 70 x 50	235-200-06
Heater fan (incl. thermostat)			
350	230 / 50 - 60	165 x 100 x 128	235-200-27

Thermostat for cabinet heating 0-60 °C	640-104-03

230 • Plastic fan module



Basic module

Description	Air flow rate, unimpeded	Order no. Basic module 1	Order no. Extension module 2
1-way	115 m³/h	230-500-01	230-500-11
2-way	230 m³/h	230-500-02	230-500-12
3-way	345 m³/h	230-500-03	230-500-13

Ventilation module "silent"

The fan module „silent" cannot be combined with an extension module!

Description	Air flow rate, unimpeded	Noise Level	Order no. Modul "silent" 3
3-way	240 m³/h	45,5 dB(A) / 20 µPa	230-500-43

Accessories

19" installation kit, 1 U 4

Material: plastic
Finish: RAL 9005 jet black
Dimens. (H x W x D): 44 × 450 × 146 mm

Order no.
230-500-70

Power cord cables 5

Power cord standard

Power cord with thermostat

Type of connection	Power cord, standard	Power cord with thermostat 0-60 °C
Earthing-pin plug	640-044-05	230-500-04
IEC connector	230-500-15	230-500-05
Without plug for fixed connection	230-500-16	230-500-06

Plastic fan module

- incomparably light
- low-cost
- easy assembly
- sophisticated modularity protected by a utility patent
- suitable for all applications relating to enclosure and cabinet technology
- can be installed in just a few steps in a 19" grid using the 19" mounting kit.
- long service life and high system reliability due to high-quality fans
- integrated fan cover
- by using state-of-the-art plastics of class UL94 V-0, the new system meets the highest fire safety requirements.

Material:
plastic, fire class to UL94 V-0
Finish:
black (similar to RAL 9005 jet black)
Dimensions (H x W x D):
44 x 450 x 140 mm

The **basic module** 1 is available as a 1, 2 or 3-fan unit and has 8 fixing points, which enable installation for any application and location. Power is supplied via a plug contact at the back of the enclosure. This plug contact enables preconfigured cables and thermometers to be used (see accessories) and of course also provides you with an interface to your own cable configuration.

The **extension module** 2 is also available as a 1, 2 or 3-way unit and is a pluggable multi-way extension for the basic fan module. The mechanical connection of the modules is realised via aluminium guide pins (included in the scope of delivery). The extension module has a plug connector on the front and a socket on the back. Series linking in this way enables the electrical connection between the modules to be established automatically.

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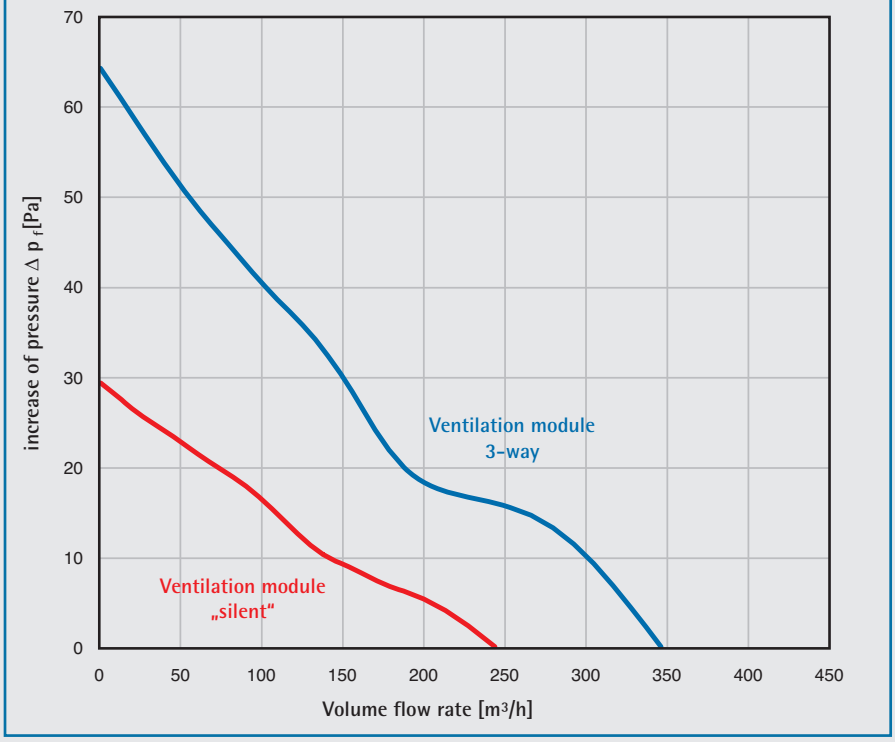
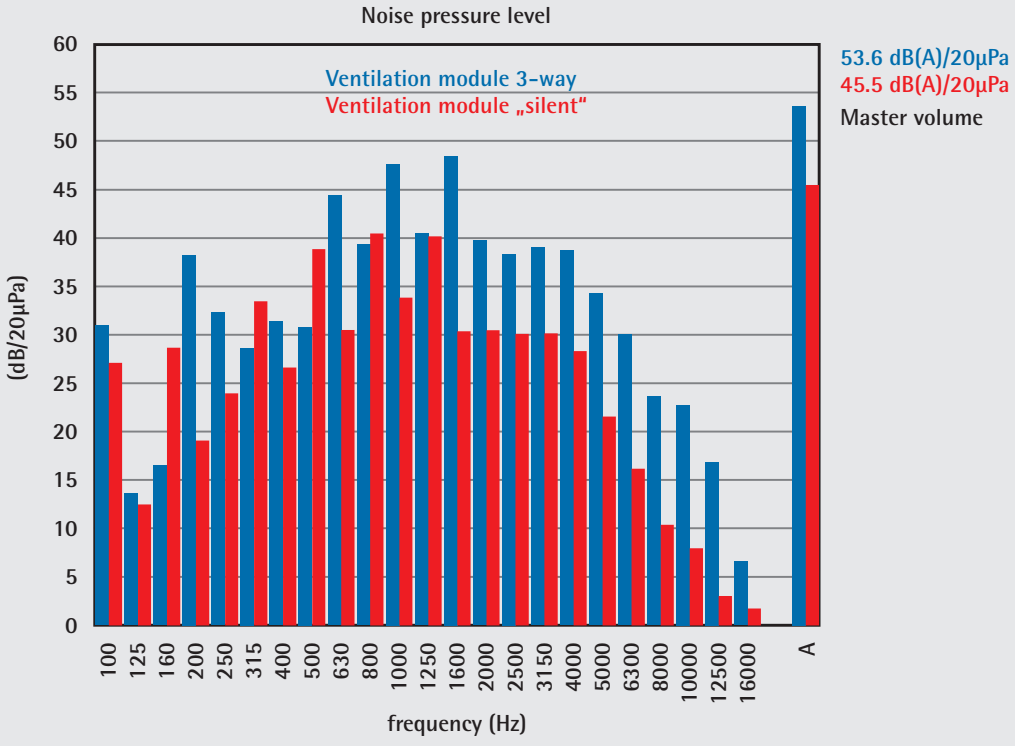
Fan characteristics

U	230 VAC	230 VAC	f	50 Hz	50 Hz
I_{V0}	347 mA	221 mA	I_{Vmax}	344 mA	226 mA
P_{V0}	59.12 W	38.17 W	P_{Vmax}	56.49 W	38.25 W
n_{V0}	2513 1/min	1715 1/min	n_{Vmax}	2656 1/min	19.39 1/min

b: barometric level t: temperature φ: rel. humidity ρ: air density U: voltage f: frequency I: power P: performance n: rotation frequency



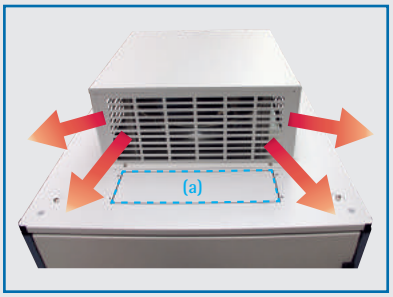


Roof ventilation unit "Silent" for TIRAX cabinet system

- This roof ventilation unit "Silent" distinguishes by its low noise level and large airflow.
- Due to these features it may be a good alternative to a climate control unit.
- The low noise level of the roof ventilation unit enables it for office application. The rear of the top cover offers a **break-out possibility for a cable entry** (a).

Material:
sheet steel
Finish:
RAL 7035 light grey
Delivery
roof including fan and mounting material

A sufficient volume of air inlet, e.g. in the bottom area or via a base with ventilation slots needs to be taken in consideration. A deficiency of the same may reduce efficiency of ventilation.



In the rear area of the roof panel there is an opening possibility for a cable entry (a)

Technical information

Airflow (free blowing)	1545 m^3/h
Noise level (fan)	40 dB (A)
Operating voltage/frequency	230 V / 50-60 Hz
Power consumption	68 W / 50 Hz
Size hood (H x W x D)	228 x 551 x 551 mm

Order information

Description	Dimensions W x D x H	Order no.
Roof plate with fan	800 x 800 x 230	318-019-08
Roof plate with fan	800 x 1000 x 230	318-019-10
Roof plate with fan	800 x 1200 x 230	318-019-12
Brush set for roof ventilation unit "Silent"		316-111-10
Power lead (3 m) with thermostat 0-60 °C		230-500-04

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apra cooling system "Front-/Sidecooler"

- the „Front-/Sidecooler" was especially developed for cooling server racks with high packing densities and through the targeted air routing inside the cabinet ensures the reliable cooling of all servers
- high cooling capacity, even at high flow temperatures
- horizontal air routing throughout the entire height of the cabinet works to optimum effect and is extremely effective in conjunction with servers in a 19" design
- very space-saving due to compact design
- all water-carrying components are located outside the server cabinet.
- the system works with a closed air circuit in the rack and is therefore independent of its environment
- the air routing can be either via one or both sides, if there is mounting between two racks

Close cooperation with leading air conditioning companies enables us to react flexibly to customer requirements. Thanks to individual air-conditioning concepts, apraNET meets the most diverse requirements.

Contact us - we will be happy to advise you: 0 65 92 / 95 12-0

Important notes:

Questions for the sales team: