



**Cabinet and enclosure solutions
for data centres and networking technology**



	19" cabinet system TiRAX	page 11	
	19" cabinet system NETcell	page 65	
	Open 19" racks	page 83	
	Floor-standing / wall-mounted 19" enclosure system VARi IT	page 97	
	Wall-mounting systems	page 111	
	Air conditioning technology	page 129	
	Power distribution	page 137	
	Cabinet monitoring	page 155	
	Cable management	page 163	
	Distribution technology	page 169	
	Accessories	page 177	



Read more about the apra-group's products at www.apra.de



1969

1979

1989

1999

2009

2017

WHAT MAKES US OUT?

LIVED VALUES FOR A STRONG COMMUNITY

As a family business with a long tradition, our company successes are based on a fixed value system. With a concentrated view on the global markets, we are always down-to-earth - we feel committed to our locations and are firmly anchored in our regions. Our strong passion for solutions forms the basis for targeted development services. At the same time it is our motivation and a permanent source of power. Not least our commitment to the highest quality products has made us a reliable and valued partner to our customers.

We work as a team. We weight cooperation. On this solid foundation, we enable our employees to use their high qualifications and their special abilities profitably for the benefit of our customers. A low fluctuation ensures that our individual employee know-how is maintained long term - a circumstance that also benefits our clients on a daily basis. Curiosity, ambition, perseverance and commitment are fundamental parameters that we bring to our daily work in a targeted manner in the interests of our customers. Proximity and the trusting relationship with our customers are just as important to us as partnership-based

communication at eye level.

With this catalog, you get an impression of our performance. Together we would like to invite you to immerse yourself in our diverse product worlds. Achieving more together - that is the formula for success in times characterized by global markets.

We are convinced of that.

In this sense,
sincerely



Sabine Rademacher-Anschütz



Stefan Meffert

2018

2028

2038

2048

2058

2068

2078

WHAT IS OUR WAY?

FOCUSED ACTION FOR A SUSTAINABLE FUTURE

With sovereignty, we work day by day to expand our competence leadership. On the basis of a strong economic mindset, we commit ourselves to peak performance while remaining open to change. With goal-oriented ambition and great curiosity, our employees are breaking new ground to realize best-in-class solutions for our clients.

In order to cope with the demands of global market conditions, we have established continuous, progressive change processes throughout the company, which our employees take with them and are supported by them. Mechanisms such as these make us an

attractive employer, which also offers a wide range of options for individual qualification. At the product level, we meet the demands placed on us and offer our customers the greatest possible variability through modular systems, individualized products and modified standards.

More information at:
www.apra.de/en/about/

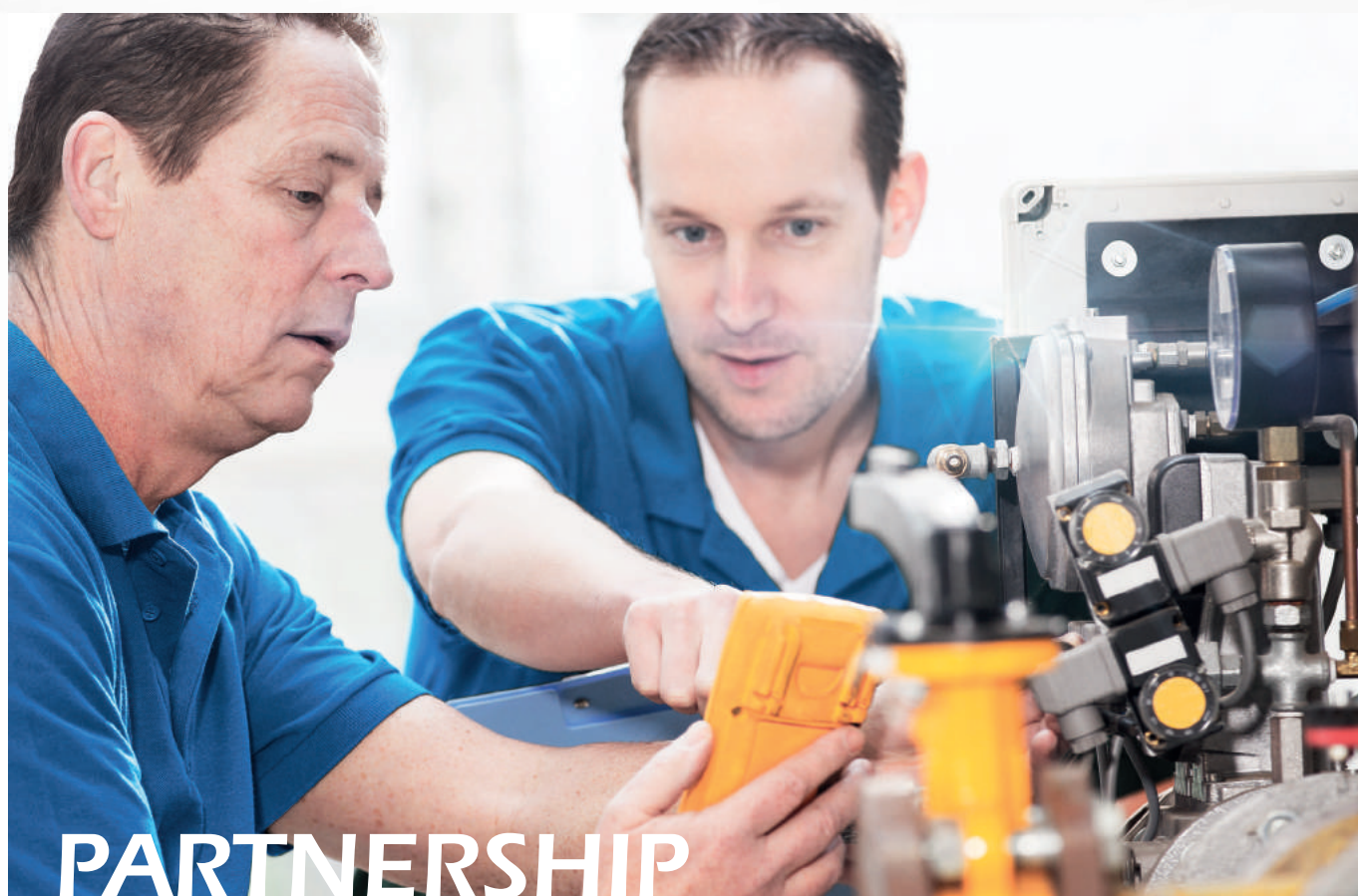


2088

2098

2108

2118



PARTNERSHIP



WHAT CAN WE DO?

ACCURATE SERVICES FOR SECURED ELECTRONICS

We have a very good reputation in the industry. Our name is internationally synonymous with quality products and services. To ensure that this remains in the future, we use it every day to underpin our competence leadership in all areas of the company. In all our efforts, we have retained the ability to think outside the box. With seismological precision, we compare developments on the international stage with our possibilities to initiate change processes if necessary.

- Secure processes as the basis for success
- Safe interaction between man and machine

Basically, we rely on the successful combination of motivated and committed employees and modern machinery. The process-reliable interaction of our qualified workforce with the innovative possibilities of technology is one of our unique selling points. In conjunction with our constructive know-how, we are able to realize products and electronic components that meet even the highest demands and set standards in terms of vertical integration and production

range. The fact that we succeed in combining economic aspects and high quality is one of our key corporate features.

- High level of vertical integration
- High production range
- Economic aspects
- Highest quality

More information at:
www.apra.de/en

VERSATILITY

COMPETENCE

PROACTIVE

PARTNER

WHAT IS YOUR ADVANTAGE?

COMMON SOLUTIONS FOR A STEADY IMPROVEMENT



Our efforts are aimed at generating added value. Against this background, we pursue a high degree of solution orientation and trust in doing so on a foundation consisting of know-how, manufacturing and development competence. For our customers and suppliers, we are the reliable partner who works down-to-earth, serious and at eye level. Our actions are characterized by continuity and ambition.

- **VERSATILITY** | High production width and depth
- **COMPETENCE** | Qualified employees and a modern machinery guarantee the highest quality
- **PRO-ACTIVE** | Recognize and use opportunities
- **PARTNERS** | Personal interaction and a partnership relationship

Our knowledge of market and customer needs make us a valued partner. Due to our high manufacturing competence, we are able to respond quickly and flexibly to complex challenges - and not least because we completely map all processes from development to assembly.

More information at:
www.apra.de/en

DATACENTER CABINET TECHNOLOGY AIR CONDITIONING POWER SUPPLY CABLE MANAGEMENT CABINET MONITORING

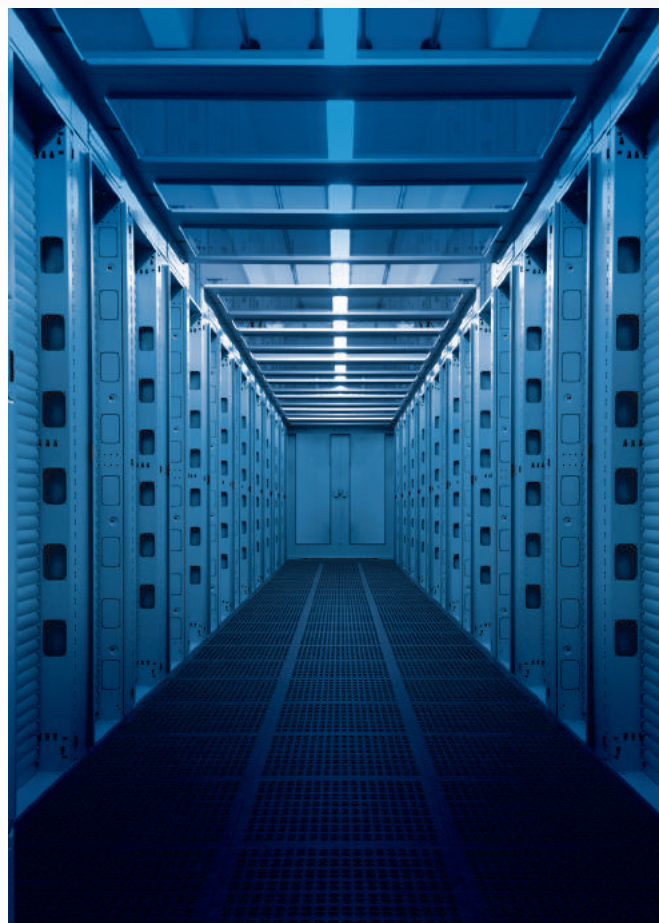
apraNET YOUR PARTNER FOR DATACENTER

A STRONG PART OF THE APRA GROUP

The apra group develops and produces at three locations in Germany and employs over 400 people. apraNET uses the synergies of the apra group, which has been designing and manufacturing metal and plastic housings and cabinets for sensitive electronics for more than 50 years.

With their complex infrastructures, modern data centers place the highest demands on the cabinet and housing technology used: reliable processes, efficient, energy-saving climate control and a structured, fail-safe power distribution and cable management system are the key figures for high-caliber data center solutions.

For many years, apraNET has been developing sustainable systems together with well-known data center operators that optimally meet the requirements. With in-depth know-how and extensive practical experience, we deliver sophisticated 19" solutions based on innovative products from the apra group.



More information at:
www.apra.de/en

YOUR INDIVIDUAL DATA CENTER

IN 5 STEPS TO THE OPTIMAL SOLUTION

Experience, Consultancy, solution-driven and flexible:

As a full-service provider for data center solutions, we are reliable and with all our knowledge and experience always at your side, from planning and installation to after-sales service.

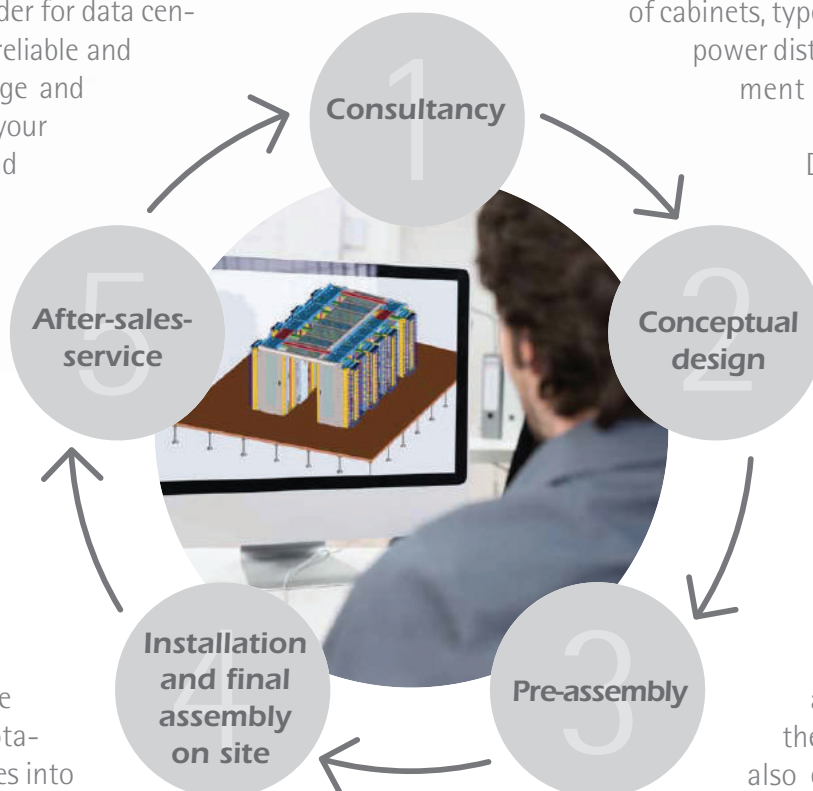
Initial setup of a data center:

Based on an on-site inventory and floor plan presented by you or your data center planner, we design your custom cabinet configuration and create a differentiated quotation. The concept takes into account all the items relevant

to rack configuration: required capacity, number of cabinets, type of air conditioning and power distribution, cable management and accessories.

Depending on your specifications and the solution that has been agreed with you, your cabinets will be pre-assembled in our factory and, if required, on-time assembled by our technicians on site.

The integration of components from the apra cooling system or the apra power system is also carried out directly by apraNET.





19" cabinet system TiRAX

page 11



19" cabinet system NETcell

page 65



Open 19" racks

page 83



Floor-standing / wall-mounted
19" enclosure system VARi IT

page 97



Wall-mounting systems

page 111



Air conditioning technology

page 129



Power distribution

page 137



Cabinet monitoring

page 155



Cable management

page 163



Distribution technology

page 169



Accessories

page 177



Read more about the apra-group's products at www.apra.de

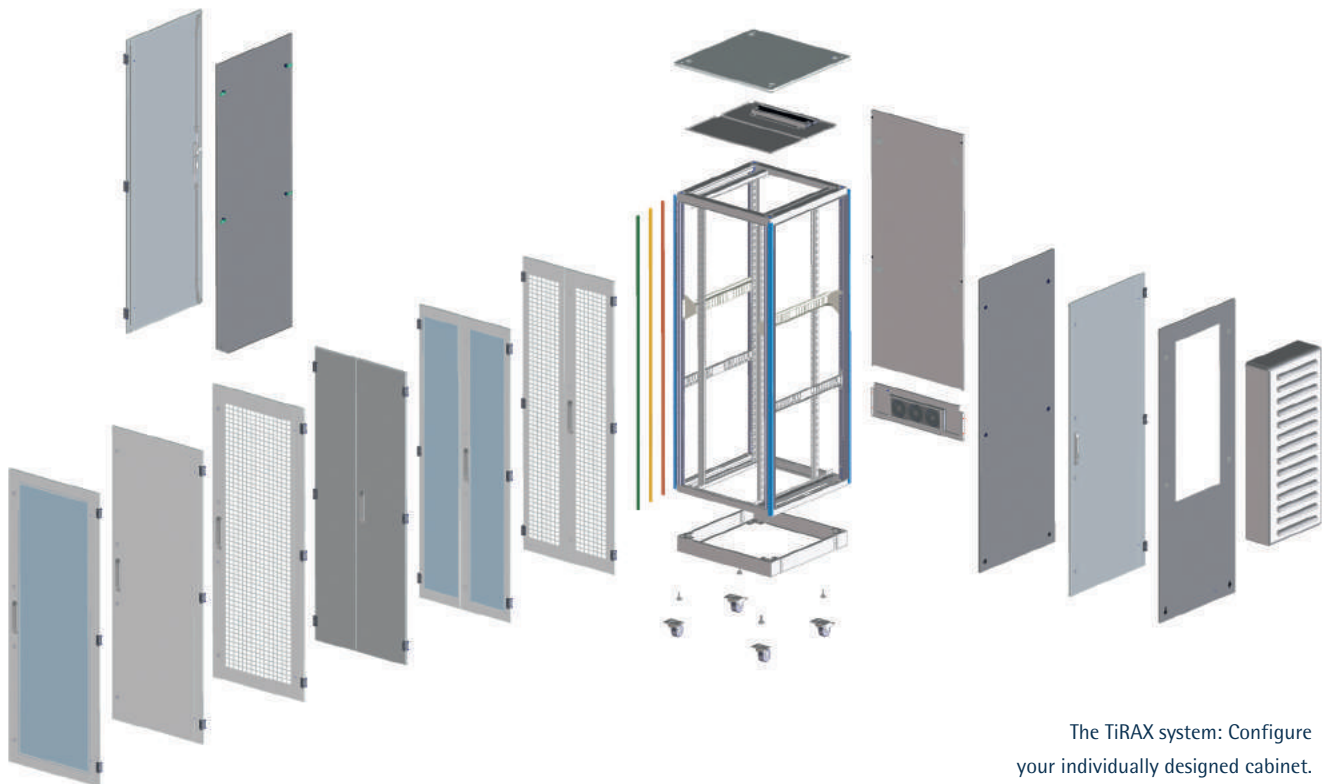


TiRAX

THE OPTIMAL SOLUTION FOR CABLING IN THE IT AND INDUSTRIAL SECTOR

The "classic" 19" cabinet system TiRAX comes as a server or network cabinet both individually and in Cabinet rows with enclosures for use. The TiRAX cabinet frame is designed as a rolled prefabricated construction based on just eight bolting points is easy to disassemble. With both force and form.

In addition to a very high degree of stability, a degree of protection of up to IP 54 is achieved. Thanks to its modular and fully symmetrical design, the TiRAX is not only popular with IT professionals, but also with innovative thinking and design-oriented technicians from the industry.



The TiRAX system: Configure your individually designed cabinet.

TiRAX Highlights

completely demountable

Extensive range of parts

Individually configurable

Fully symmetrical design

detachable design profile, customer specific colour scheme

Load capacity up to 1500 kg

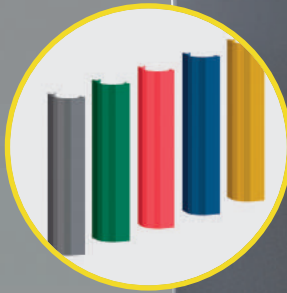
flexible Cabinet dimensions and modular interior design

Energy efficient Air conditioning through the use of enclosure components

Protection class up to IP 54



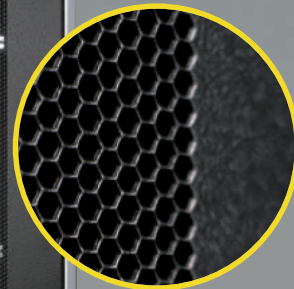
Code your cabinets
different colored design strips
by applications or departments
and give them one
own look.



Swivel handle lock in
mechanical or
electronic version



Passive ventilation
through perforated metal doors
(free Perforated plate cross
section 83 %)



Vertical cable routing on the side
the 19" level via cable clamp
or cable channels



TiRAX

completely demountable,
modular,
fully symmetric



TiRAX server cabinet IP 20

- dismantlable steel profile cabinet rack
- two lateral sash doors with quick lock mechanism
- front and rear perforated sheet metal door with three-point lock mechanism (perforated door surface: 83 %)
- installation of a profile half-cylinder possible
- 19" level 42 U, front and rear
- top panel with cable entry and/or fan module option
- base provided
- cover plates in the bottom area can be removed for cable entry
- for W = 800 mm: metal cable clamps 66 x 125 mm at the front 19" level (10 pieces)
- equipotential bonding set (installed)
- screw set M 5 (50x)

Finish:

Trim parts/base:

RAL 7035 light grey

Design profiles: RAL 5014 pigeon blue
(other colours possible on request)

or

Trim parts/base:

RAL 9005 jet black

Design profiles: RAL 7037 dusty grey
(other colours possible on request)

Delivery:

fully assembled, base provided



H mm	W mm	D mm	Colour	Order no.
2000	600	1000	RAL 9005 jet black	318-200-60
2000	800	1000	RAL 9005 jet black	318-200-61
2000	600	1200	RAL 9005 jet black	318-200-62
2000	800	1200	RAL 9005 jet black	318-200-63
2000	600	1000	RAL 7035 light grey	318-200-64
2000	800	1000	RAL 7035 light grey	318-200-65
2000	600	1200	RAL 7035 light grey	318-200-66
2000	800	1200	RAL 7035 light grey	318-200-67



TiRAX IP 20

- dismantlable steel profile cabinet rack
- front viewing door with tinted toughened safety glass
- rear sheet metal door (can also be mounted as side door if basic size is square)
- both doors can accommodate a profile half cylinder
- side panels (connector cabinet: without side panels, includes cabinet connectors)
- 19" level front and rear
- for W = 800 mm: metal cable clamps 66 × 125 mm at the front 19" level
- top panel with cable entry and/or fan module option
- open bottom plate
- base provided
- equipotential bonding set (installed)
- screw set M 5 (50×)

Finish:

Trim parts/base:

RAL 7035 light grey

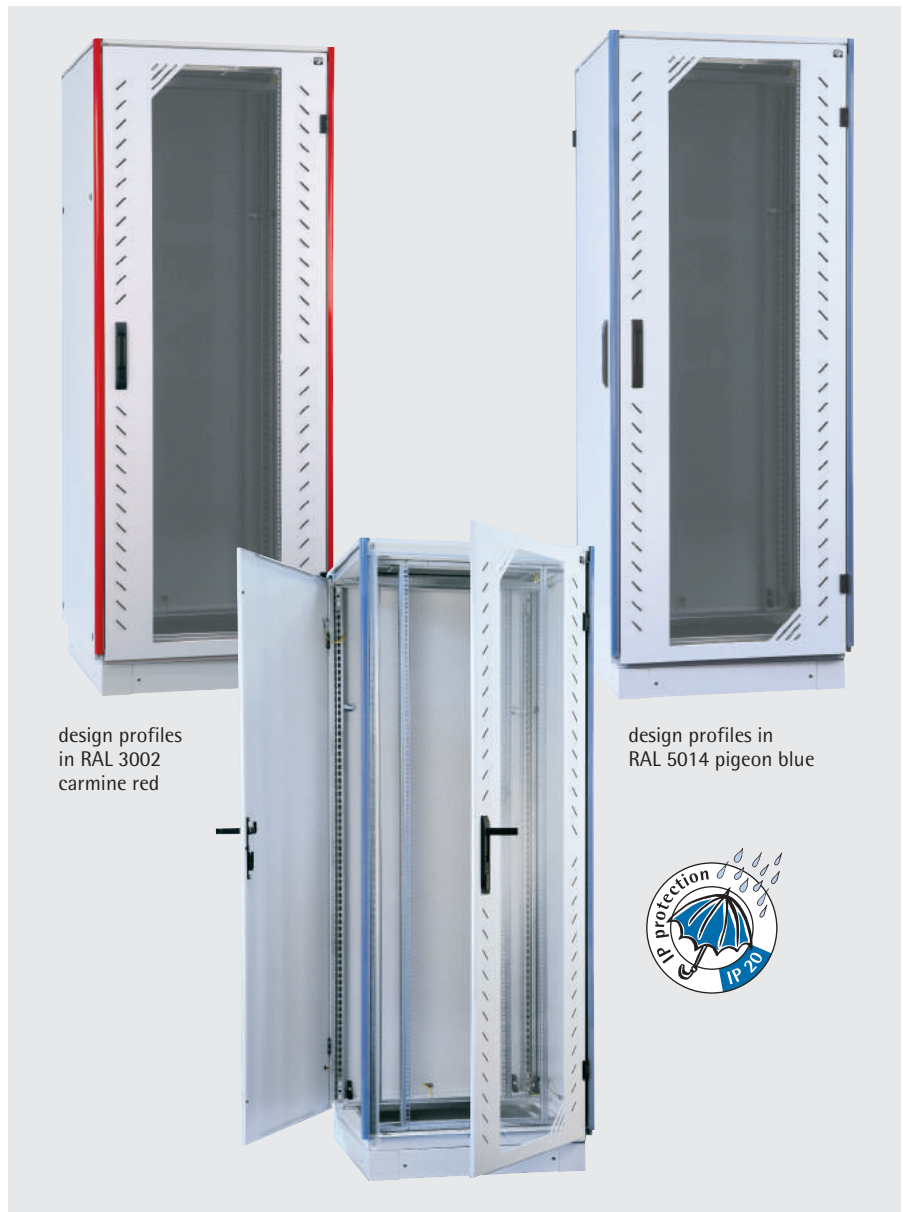
Design profiles:

RAL 3002 carmine red

(other colours on request)

Delivery:

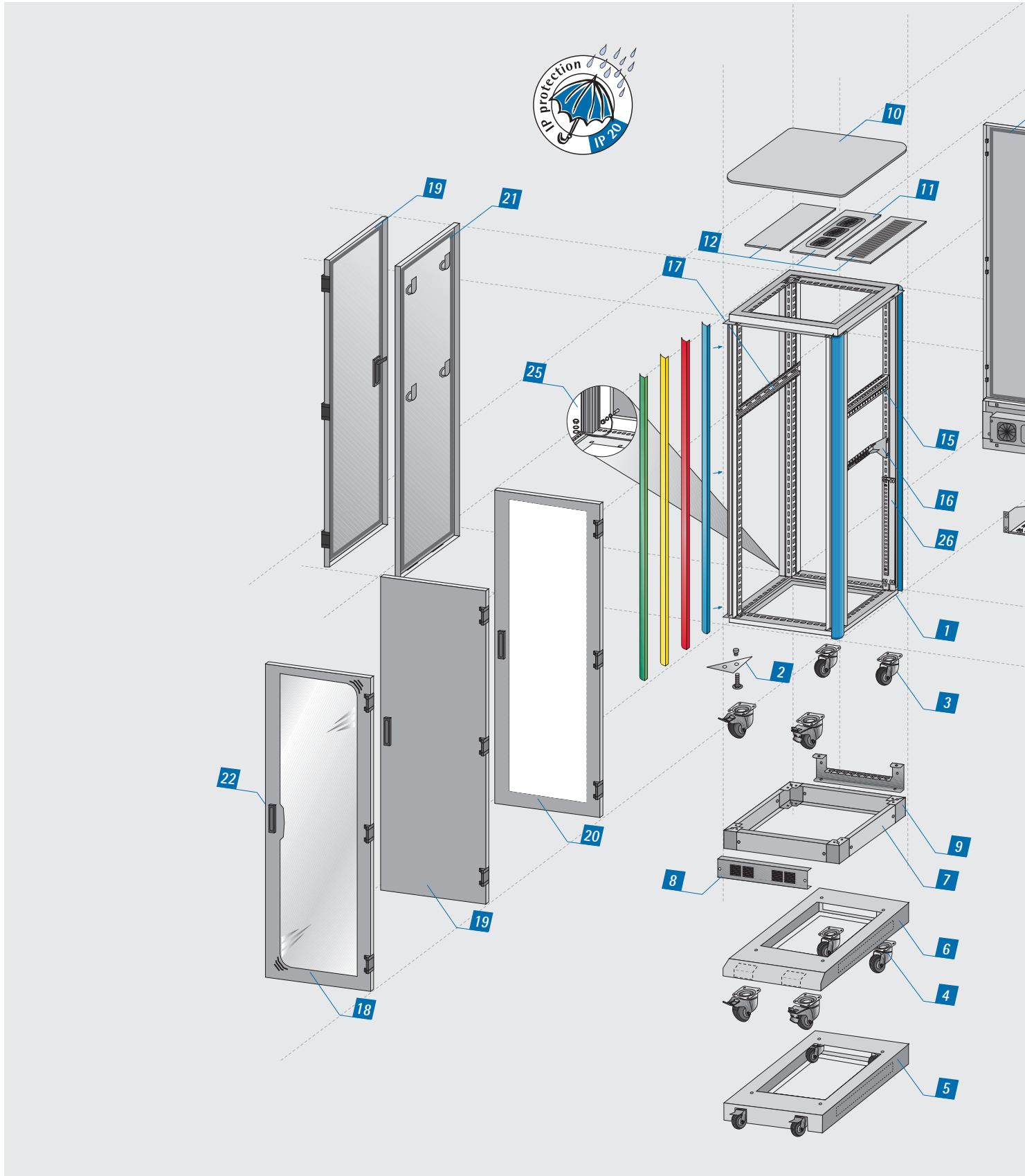
fully assembled, base provided



H mm	W mm	D mm	Basic cabinet	Connector cabinet
1200	600	600	317-200-40	317-200-50
1200	800	600	317-200-41	317-200-51
1200	600	800	317-200-42	317-200-52
1200	800	800	317-200-43	317-200-53
2000	600	600	317-200-44	317-200-54
2000	800	600	317-200-45	317-200-55
2000	600	800	317-200-46	317-200-56
2000	800	800	317-200-47	317-200-57

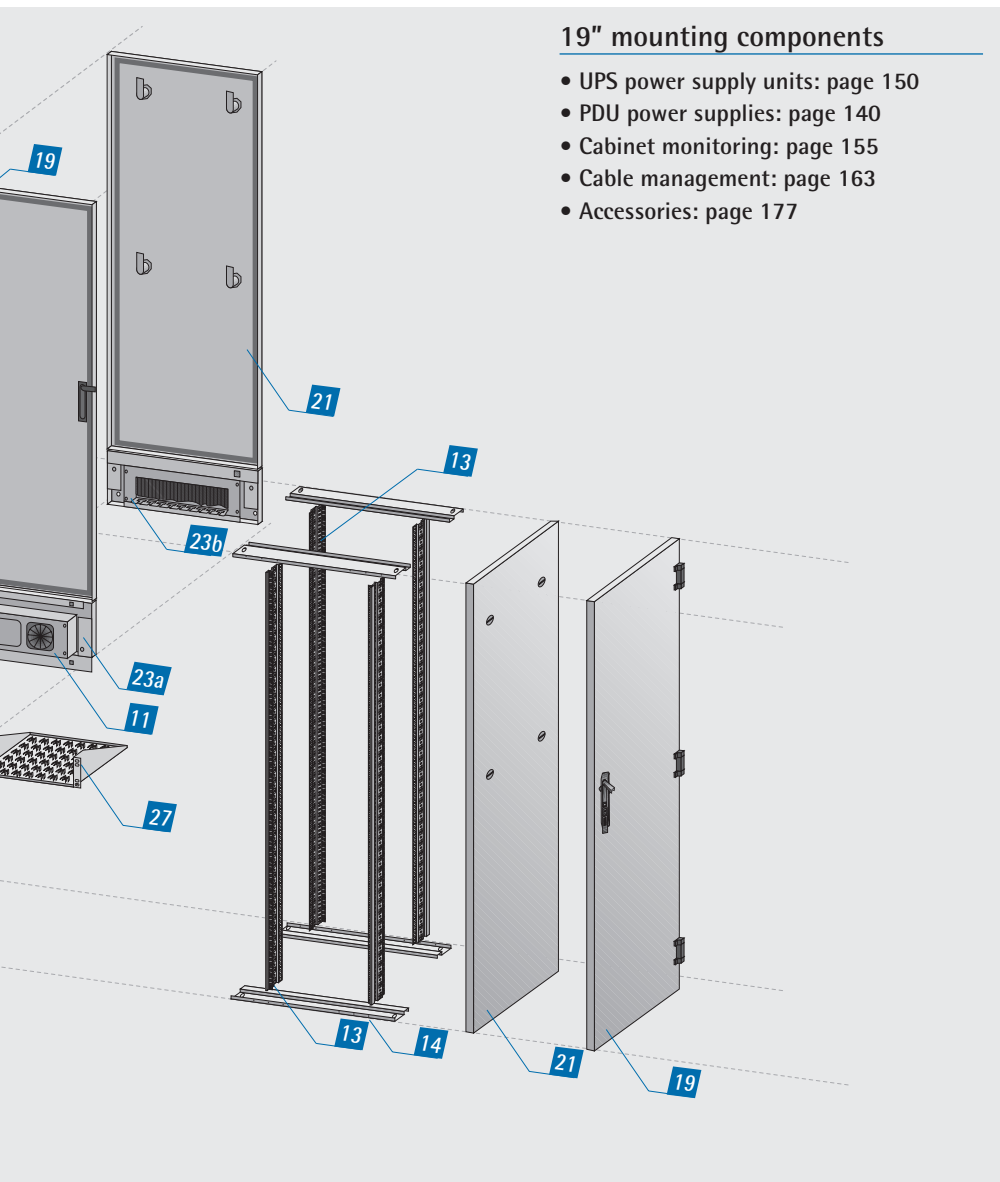


Configure your own individually designed cabinet.





Select the required cabinet components step by step:

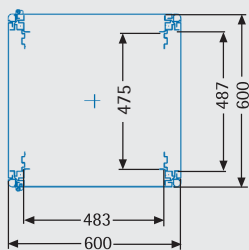


19" mounting components

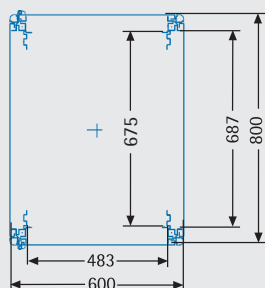
- UPS power supply units: page 150
- PDU power supplies: page 140
- Cabinet monitoring: page 155
- Cable management: page 163
- Accessories: page 177

Pos.	Description	Page
1	Cabinet rack	18
2	Adjusting feet	18
3	Castor set	18
4	Castor set, tilt-prevention	18
5	Castor base	19
6	Tilt prevention base	19
7	Base covers	19
8	Filter set	19
9	Base corner set	19
10	Top	19
11	Fan module	20
12	Cover plates	22
13	19" vertical mounting	23
14	Cross bar for 19" integration	23
15	Multi-purpose crossbar	24
16	Reduction crossbar	24
17	Cable guarding rail	25
18	Viewing door	26
19	Door, solid	26
20	Door, perforated	26
21	Sash door	26
22	Locking system for doors	26
23a	Fan installation module	27
23b	Cable entry module	27
24	Cabinet connection set	27
25	Earthing set	27
26	Potential equalisation rail	29
27	Shelves	30

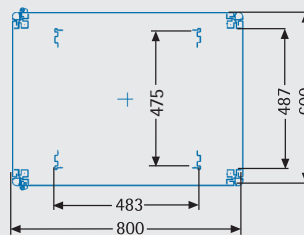
Technical information: max. 19" installation dimensions



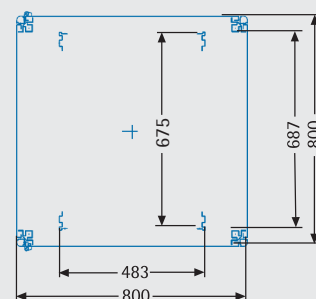
Top view cabinet rack
W x D = 600 x 600 mm



Top view cabinet rack
W x D = 600 x 800 mm



Top view cabinet rack
W x D = 800 x 600 mm



Top view cabinet rack
W x D = 800 x 800 mm



1 Cabinet rack, dismantlable

The cabinet rack consists of two identical sheet metal frames (1), four sheet metal functional profiles (2) and four painted sheet metal design profiles (3) clipped onto the functional profiles.

Dimensions:

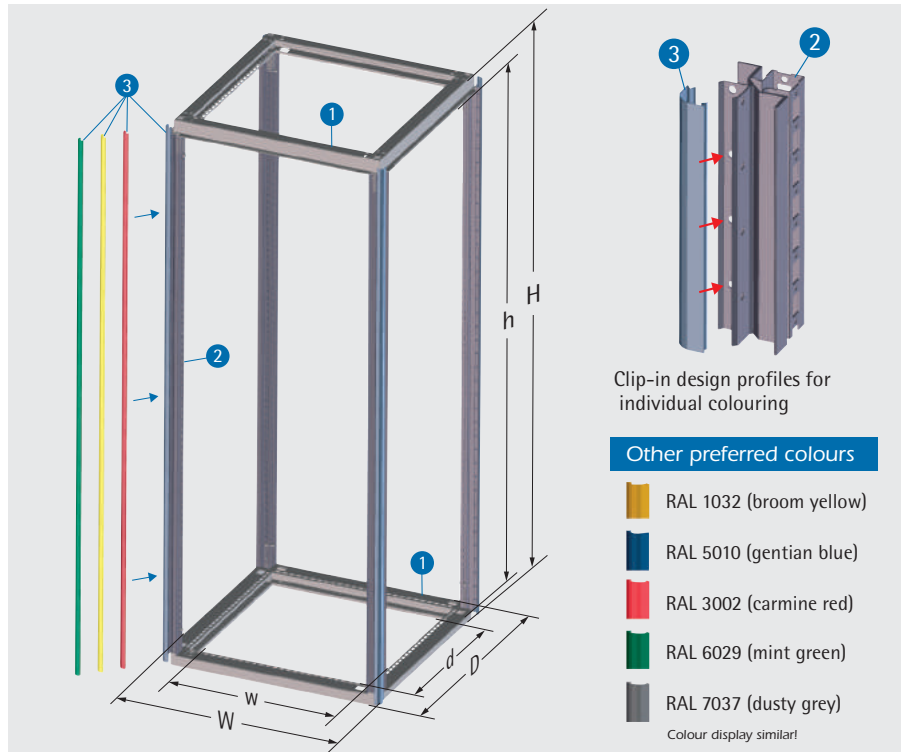
W: Cabinet width
 w: clear opening width
 $w = W - 146 \text{ mm}$
 D: Cabinet depth
 d: clear opening depth
 $d = D - 146 \text{ mm}$
 H: Cabinet height
 h: clear opening height
 $h = H - 100 \text{ mm}$

Finish:

- (1) Top / bottom frame: RAL 7035 light grey
- (2) Functional profile: galvanised
- (3) Design profile: RAL 5014 pigeon blue

Delivery:

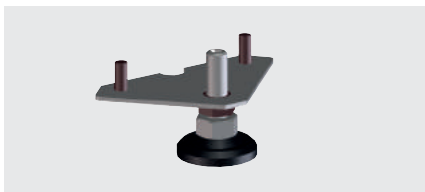
fully assembled



The design profile (3) can be matched to your company colour if desired.

Dimensions (W x D) mm	U	H mm	Order no.
600 x 600	24	1200	318-660-02
800 x 600			318-860-02
800 x 800			318-880-02
600 x 1000			318-601-02
800 x 1000			318-810-02
600 x 600	42	2000	318-660-10
800 x 600			318-860-10
800 x 800			318-880-10
600 x 1000			318-610-10
800 x 1000			318-810-10

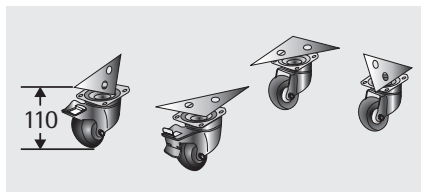
2 Adjusting feet



- to be screwed onto the rack (1) or to the corners of the base
- Height min. = 25 mm
- set = 4 pieces

Description	Order no.
Mounting on rack	318-026-00
Mounting on base	318-026-02

3 Castor set



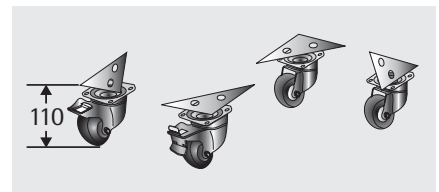
- to be screwed directly onto the cabinet rack (1)
- 4 swivel castors (2 with parking brake)

Load capacity:

450 kg

Order no.
318-026-10

4 Castor set, tilt prevention base



- to be screwed to tilt prevention base (6)
- 4 swivel castors (2 with parking brake)

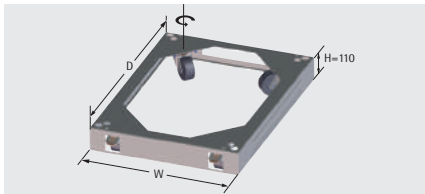
Load capacity:

450 kg

Order no.
316-026-50



5 Castor base



- 4 swivel castors (2 with parking brake)
- cable entry from rear (opening with brush) and side

Finish:

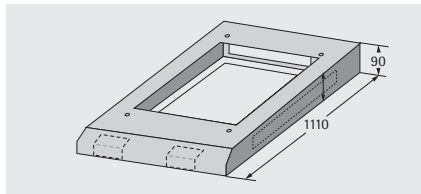
RAL 7035 light grey

Load capacity:

450 kg

W mm	D mm	Order no.
600	600	318-126-60
600	800	318-126-80
800	600	318-128-60
800	800	318-128-80

6 Tilt prevention base



- static base with integrated tilt prevention
- offers secure standing when drawers with heavy equipment are extracted
- rear or lateral cable entry

Material:

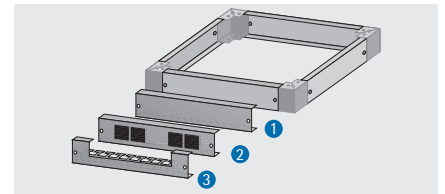
sheet metal

Finish:

RAL 7035 light grey

W mm	D mm	Order no.
600	1000	318-026-11
800	1000	318-028-11

7 Base covers



- for individual base construction combined with our base corner set
- 4 covers complete one base

Type 1: solid

Type 2: ventilated

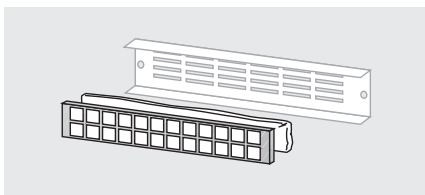
Type 3: with cable entry

Material: sheet metal

Finish: RAL 7035 light grey

W / D mm	Type	Order no.
600	1	318-100-10
800		318-100-20
1000		318-100-30
1200		318-100-50
600	2	318-100-12
800		318-100-22
600	3	318-100-14
800		318-100-24

8 Filter set for base covers



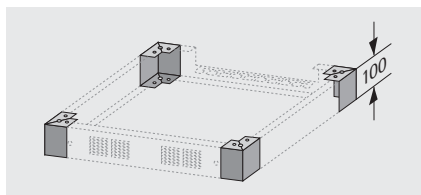
- matches base covers "Type 2 ventilated" (see pos. 7)

Material:

sheet metal galvanised, filter fleece

W / D mm	Order no.
600	318-100-16
800	316-101-99

9 Base corner set



- set = 4 pieces
- includes mounting materials
- extendable
- Height: 100 mm

Material:

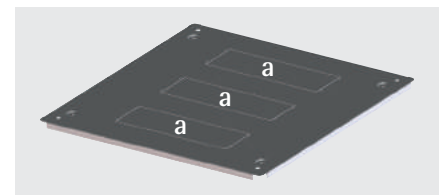
sheet metal

Finish:

RAL 7035 light grey

Order no.
318-100-00

10 Top



- can be raised mounted with lifting eye bolts (see below)
- for each pre-perforated field "a" extendable with **fan module** (see page 20) or **brush set** (see page 21)

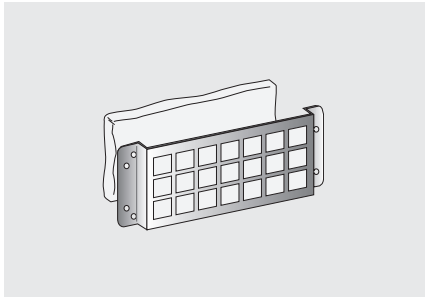
Material: sheet metal

Finish: RAL 7035 light grey

Dimensions (W x D) mm	No. of fields (a)	Order no.
600 x 600	2	317-016-62
600 x 800	2	317-018-62
600 x 1000	2	317-020-64
800 x 600	2	317-018-62
800 x 800	3	317-018-82
800 x 1000	4	317-020-82



Filter set



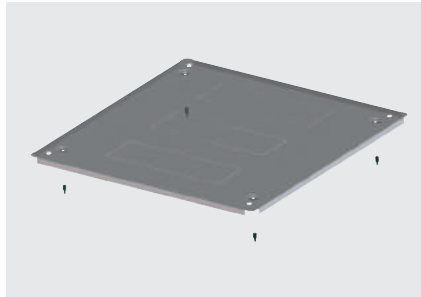
- for fan module or perforated cover plate

Material:

aluminium, filter fleece

Description	Order no.
Filter set	316-100-99
Spare filters (5 pieces)	671-200-05

Spacer bolts for top plates



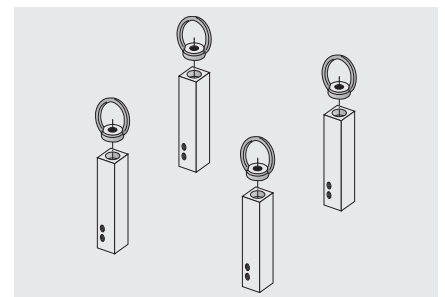
- The further lifting (H = 15 mm) of top panel is possible with additional spacer bolts.
- set = 4 pieces

Material:

steel

Order no.
316-016-65

Eye bolt kit



- lifting eye bolts for cabinet relocation
- set = 4 pieces

Load capacity:

500 kg

Order no.
318-026-20

11 Fan module



- fan module, fully pre-wired
- ventilation or extraction, depending on assembly position
- for installation in the top/bottom area of the cabinet
- different power cords available (see right side)

Material:

polycarbonate UL94 V-0

Finish:

similar to RAL 9005 jet black

Dimensions (H x W x D):

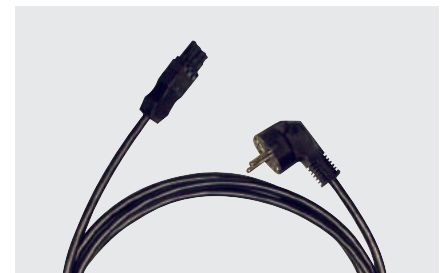
44 x 450 x 140 mm

The fan characteristics and noise levels can be found in the diagrams on page 133.

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

Description	Unimpeded air flow	Basic module	Extension module
fan module 1-way	115 m³/h	230-500-01	230-500-11
fan module 2-way	120 m³/h	230-500-02	230-500-12
fan module 3-way	345 m³/h	230-500-03	230-500-13
fan module "silent"	240 m³/h	230-500-43	-

Power cord standard, 3 m



Connection	Order no.
Earthing-pin	640-044-05
IEC connector	230-500-15
Without plug for fixed connection	230-500-16

Power cord 3 m with thermostat 0 - 60 °C



Connection	Order no.
Earthing-pin	230-500-04
IEC connector	230-500-05
Without plug for fixed connection	230-500-06



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 metal

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.



The rear of the top cover offers a **break-out possibility for a cable entry (a)**.

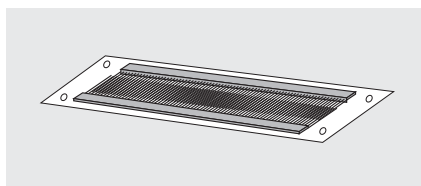
Technical information

Airflow (unimpeded)	1545 m ³ /h
Noise level	40 dB (A)
Operating voltage/frequency	230 V / 50-60 Hz
Power consumption	68 W / 50 Hz
Size of roof unit (H x W x D)	228 x 551 x 551mm

Order no.

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 cable entry (a)		316-111-10
Power lead (3 m) with thermostat 0-60 °C		230-500-04

Brush set for roof ventilation unit "Silent"



- for use in the perforated breakthrough of the roof ventilator "Silent"
- for use in the openings (a) of the roof
- Dimensions W x D: 365 x 120 mm

Order no.
316-111-10

Power lead 3 m with thermostat 0-60 °C



- for installation of the roof ventilation unit "Silent"

Order no.
230-500-04

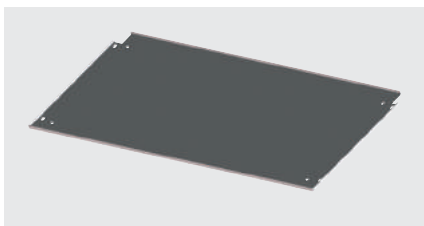


12 Cover plates

The cover plates can be mounted directly on the cabinet rack [1] (top or base) according to the layout shown.

	Depth (D) 600 mm	Depth (D) 800 mm	Depth (D) 1000 mm	Depth (D) 1200 mm
(W) 600 mm				
(W) 800 mm				

Cover plate, solid



- individual break-throughs on request

Size	Order no.
1	318-111-01
2	318-111-02
3	318-111-03
4	318-111-04
5	318-111-05
6	318-111-06
7	318-111-07

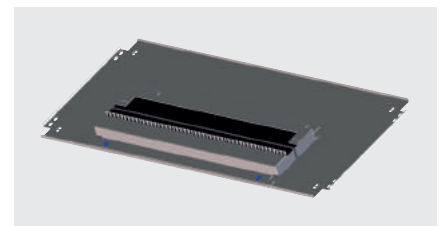
Cover plate for fan base module



- cover plate for mounting of fan modules [pos. 11]
- also mountable with filter set 316-100-99

Size	Order no.
1	318-111-21
2	318-111-22

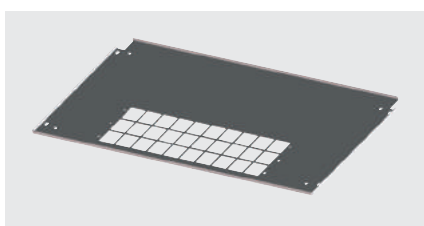
Cover plate for cable entry



- cover plate for sealed cable entry
- suitable for CEE-plugs

Size	Order no.
1	318-111-25
2	318-111-26
5	318-111-37
6	318-111-38

Cover plate perforated

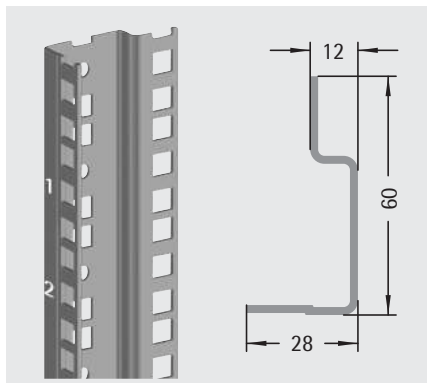


- extendable with filter set 316-100-99

Size	Order no.
1	318-111-23
2	318-111-24



13 19" vertical mounting



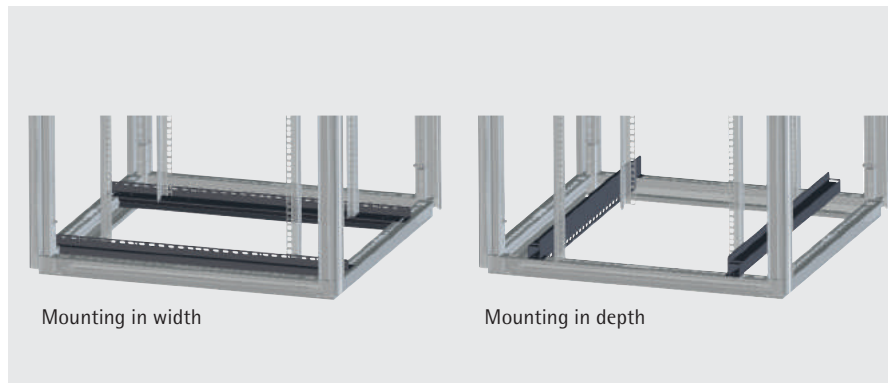
- ASA-perforation (1/2 19" perforation)
- with U-labelling

Material:

sheet metal, galvanised

U	Order no.
6	316-120-06
12	316-120-12
15	316-120-15
19	316-120-19
24	316-120-24
33	316-120-33
37	316-120-37
42	316-120-42
46	316-120-46
48	316-120-48

14 Cross bar for 19" integration



- to install the 19" vertical mountings two cross bars per 19" level are required
- steplessly depth adjustable
- at W = 800 mm the 19" level can be moved laterally

- in case of partial mounting, multipurpose crossbars (Pos. 15) are needed

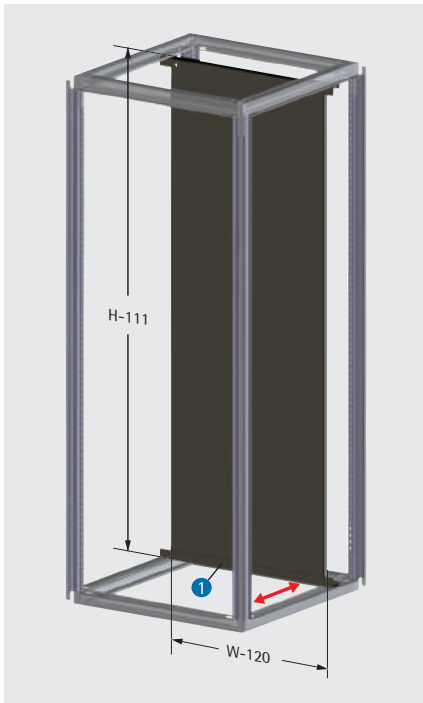
Material:

sheet metal, galvanised

U	W = 600 mm	W = 800 mm	D = 1000 mm	D = 1200 mm
6	318-121-76	318-121-78	318-121-80	318-121-82
12	318-121-76	318-121-78	318-121-80	318-121-82
15	318-121-76	318-121-78	318-121-80	318-121-82
19	318-121-77	318-121-79	318-121-81	318-121-83
24	318-121-76	318-121-78	318-121-80	318-121-82
33	318-121-76	318-121-78	318-121-80	318-121-82
37	318-121-77	318-121-79	318-121-81	318-121-83
42	318-121-76	318-121-78	318-121-80	318-121-82
46	318-121-77	318-121-79	318-121-81	318-121-83
48	-	318-121-70	318-121-72	318-121-74



Mounting plate



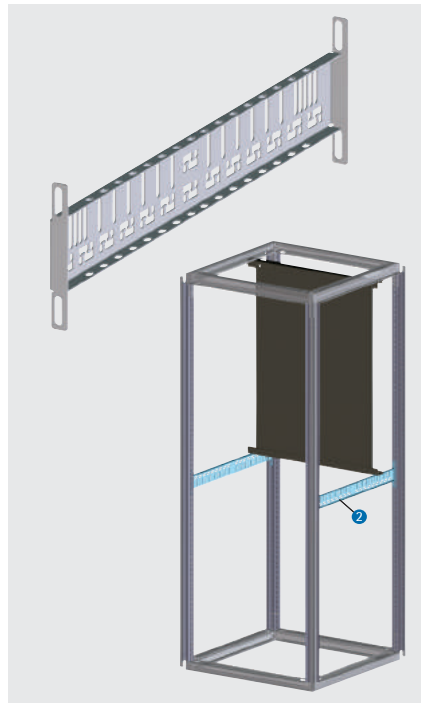
- for mounting heavy components and top hat rails
- is mounted on the cabinet with mounting rails [1] and can be pushed in laterally
- option to adjust the depth in 25mm steps
- multi-purpose crossbars (Pos. 15) are needed for partial mounting

Material:

sheet metal, galvanised

Height (H) mm	Order no. W=600 mm	Order no. W=800 mm
1200	318-130-12	318-130-32
1600	318-130-16	318-130-36
1800	318-130-18	318-130-38
2000	318-130-20	318-130-40
2200	318-130-22	318-130-42

15 Multi-purpose crossbar



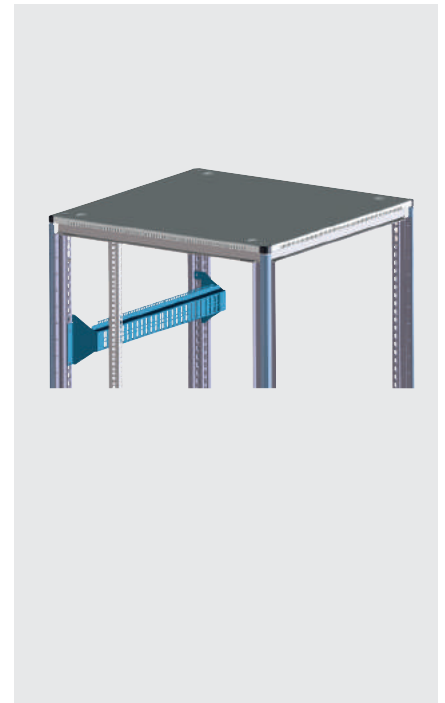
- for 19" partial mounting
- for clean cable entry
- infinitely depth adjustable
- Delivery: 1 piece

Material:

sheet metal, galvanised

Depth (D) / Width (W) mm	Order no.
600	318-120-06
800	318-120-08
1000	318-120-19
1200	318-120-23
500 - 850 (extendable)	318-122-40
700 - 1050 (extendable)	318-122-44

16 Reduction crossbar



- reduces W = 800 mm to 19"
- with integrated cable management bracket
- can be hung up or screwed on

Material:

sheet metal, galvanised

Depth (D) / Width (W) mm	Order no.
600	318-120-10
800	318-120-12
1000	318-120-14
1200	318-120-21



180° hinge kit for pivot frame



- to increase the pivot angle of the 19" pivot frame to 180°

Order no.
318-129-20

19" pivot frame

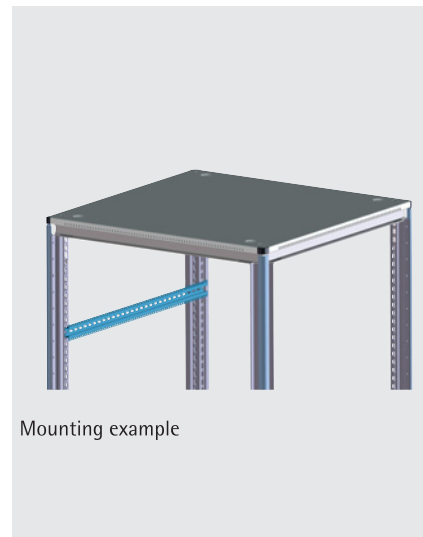


- for cabinet width 800 mm
- pivot angle 95°
- installation centric or asymmetrical

Material:
sheet metal
Finish:
RAL 7035 light grey
Load capacity:
250 kg
Delivery:
incl. crossbars

U	Order no.
21	318-129-24
39	318-129-30

17 Cable guarding rail



Mounting example

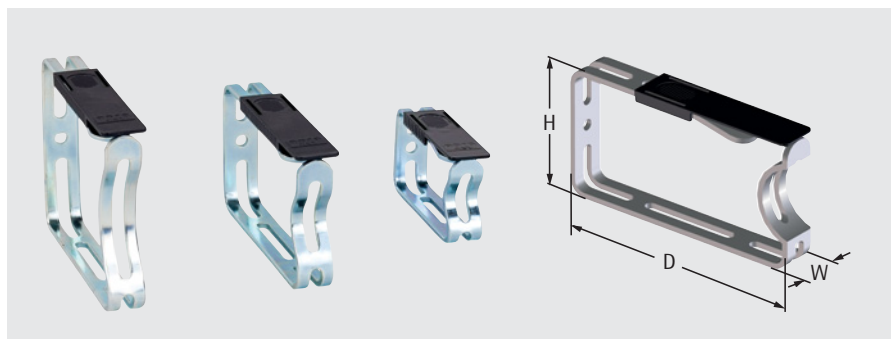
- with integrated cable management bracket
- holds cables in place with cable ties and cable clips

Material:
Aluminium, anodised
Delivery:
mounting material included

Cable clamps can be found on page 167.

Depth (D)/Width (W) mm	Order no.
600 mm	318-121-10
800 mm	318-121-11
Adapter for 1000 mm	316-103-25

Cable clamp, metal (set)

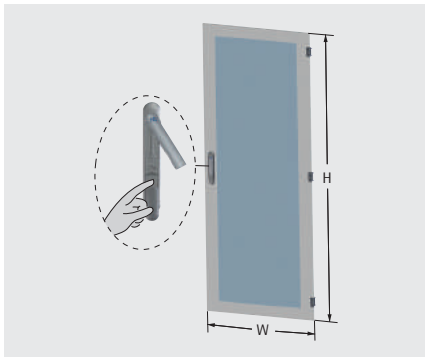


- for securing cables vertically to a 19" frame (for 800 mm wide cabinets)
- set = 10 pieces
- mounting material included

Dimensions (H x W x D) mm	Order no.
44 x 23 x 85	640-036-11
66 x 23 x 125	640-036-12
88 x 23 x 125	640-036-13



18 Viewing door



- with turning lever lock for profile half cylinder, L = 40 mm (with push button opening)

Material:

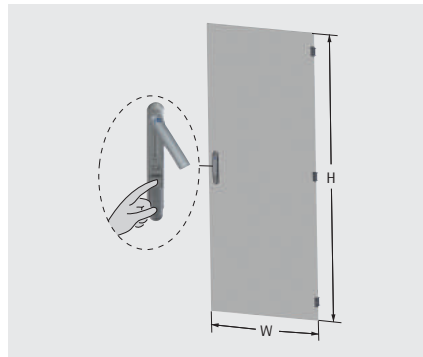
frame: sheet metal,
glass: toughened safety glass 4 mm, grey

Finish:

RAL 7035 light grey

Dimensions (H x W) mm	Order no.
1200 x 600	317-612-01
1200 x 800	317-812-01
2000 x 600	317-620-01
2000 x 800	317-820-01

19 Door, solid



- with turning lever lock for profile half cylinder, L = 40 mm (with push button opening)

Material:

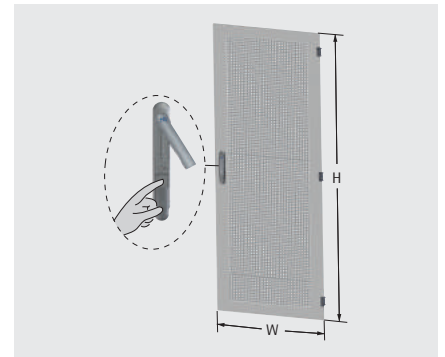
sheet metal

Finish:

RAL 7035 light grey

Dimensions (H x W) mm	Order no.
1200 x 600	317-612-02
1200 x 800	317-812-02
2000 x 600	317-620-02
2000 x 800	317-820-02

20 Door, perforated



- Perforation 83 %
- with turning lever lock for profile half cylinder, L = 40 mm (with push button opening)

Material:

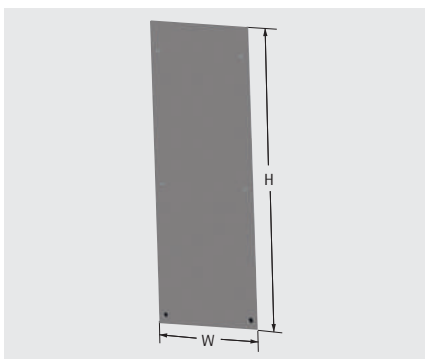
sheet metal, perforated insert

Finish:

RAL 7035 light grey

Dimensions (H x W) mm	Order no.
1200 x 600	318-612-16
1200 x 800	318-812-16
2000 x 600	318-620-16
2000 x 800	318-820-16

21 Sash door



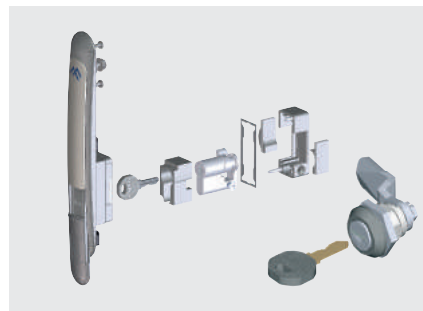
- with 2 or 4 sash fasteners and "double bit key 5 mm" mechanism

Material: sheet metal

Finish: RAL 7035 light grey

Dimensions (H x W) mm	Order no.
1200 x 600	317-612-23
1200 x 800	317-812-23
1200 x 1000	317-012-23
2000 x 600	317-620-23
2000 x 800	317-820-23
2000 x 1000	317-020-23

22 Locking systems for doors

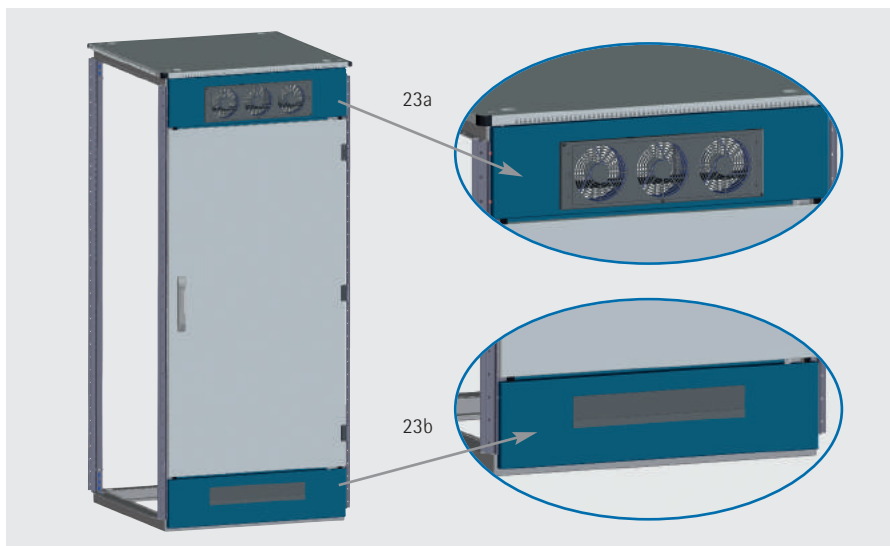


- **profile semi-cylinder** L = 40 mm with EK 333 closing for turning lever lock of doors (18 to (20)
- **adapter** for installing a profile semi-cylinder with L = 40 mm acc. to DIN 18252
- **sash fastener** with EK 333 closing for locking the sash door (21)

Description	Order no.
profile semi-cylinder	676-316-00
cylinder sash fastener	676-181
Adapter	676-316-10
Sapre key EK 333	676-200



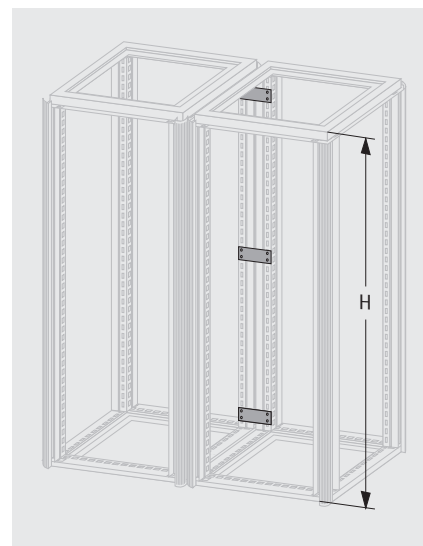
23 a/b Universal modules



- can be used with shortened doors [18] - [20] or sash doors [21]
- modules can be positioned freely above and/or below the doors shortened by 200 mm
- the fan installation module [23 a] is suitable for use with the basic fan module [11]

Ausführung	Description	W / D mm	Order no.
23a	Fan installation module	600	318-700-00
23a	Fan installation module	800	318-800-10
23b	Cable entry module	600	318-600-02
23b	Cable entry module	800	318-800-02

24 Cabinet connection set IP 20



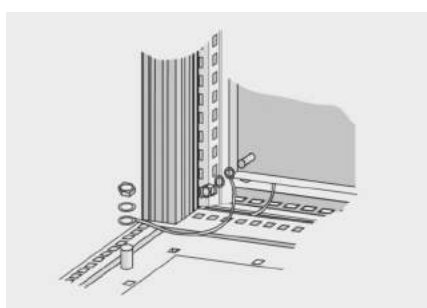
- for connecting as many cabinets as required next to or behind each other
- the design profile of the cabinet remains unchanged

Delivery:

connecting plates, clip-on seals; assembly material included

Order no.
317-105-10

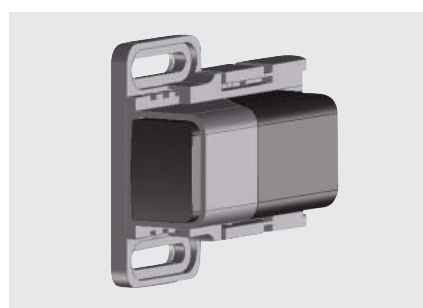
25 Earthing set TiRAX



- for earthing according to VDE standards
- for conductive connection of the cabinet's components (cable cross section 2,5 mm²)

Order no.
318-150-00

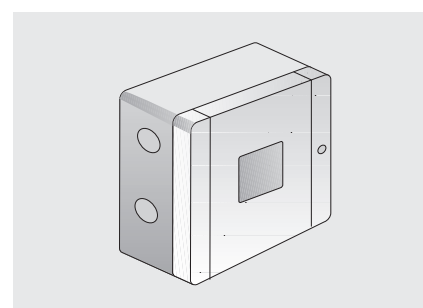
Door contact switch



- for switching IEC connector etc. on and off
- mounting material included

Order no.
640-071-00

Terminal box

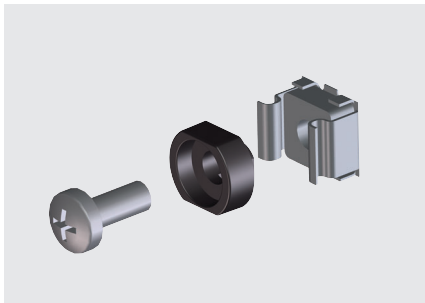


- for use as a cable distribution socket
- simple and quick installation

Order no.
640-059



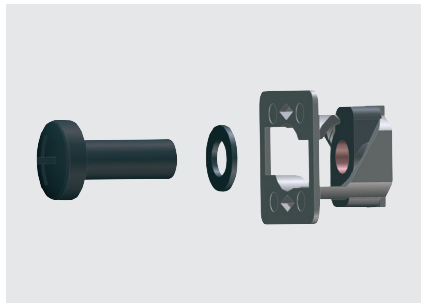
Screw set M 5 / M 6 / Torx (50x)



- necessary for mounting of 19" components into racks or enclosures
- **consisting of:**
 - 50 lens head screws M 5 x 12 / M 6 x 16
 - 50 cage nuts M 5 - 8 / M 6 - 8
 - 50 rosettes for screws M 5 / M 6, with standards flattened

Description	Order no.
M 5	630-991
M 6	630-994
Torx M 6	350-001-20

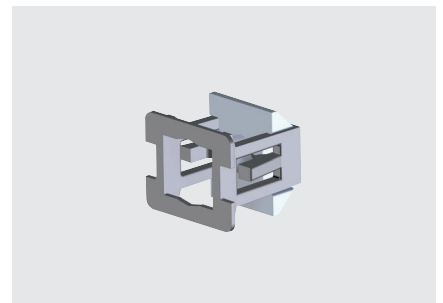
TiRAX screw set



- can be inserted circumferentially in the TiRAX cabinet rack
- Delivery:**
each with 20x special cage nuts M 6, lens head screw M 6 x 16 and washer

Order no.
630-998

19" plug-in nut M5



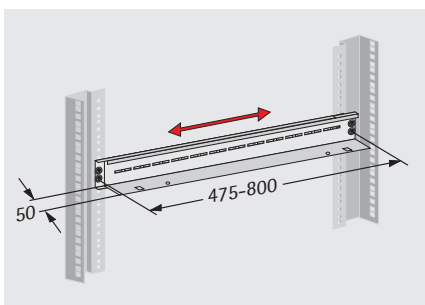
- For mounting in 19" grid rails with a standard breakthrough 9,5 x 9,5 mm (square perforation)

material:
Threaded insert, galvanised steel
Plastic housing:
PA (UL-certificate)

Finish: plastic (black)
thread use: galvanized

Description	Order no.
set 4-fold	631-555-04
set 50-fold	631-555-50

Slide rail, variable depth

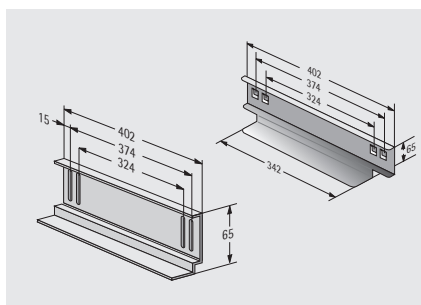


- for 19" plug-in units irrespective of the clearance to the 19" levels
- depth-adjustable
- for use as of a cabinet depth of 800 mm
- Delivery: 1 pair

Material:
sheet metal 1,5 mm, galvanised
Load capacity:
50 kg

Order no.
316-544-20

Slide rail, screwable / hook-in

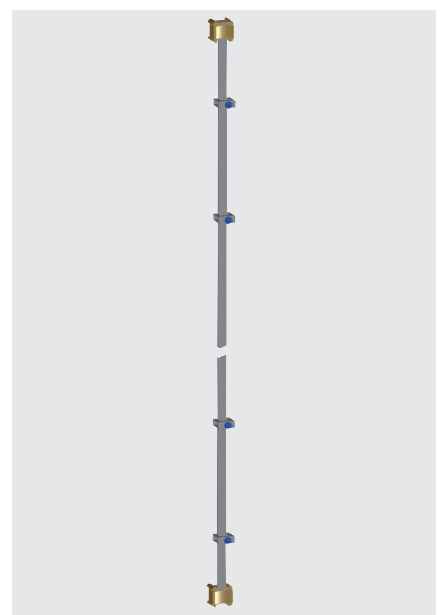


- **screwed/hooked** in onto 19" vertical mountings
- to support heavy 19" plug-in units
- two 19" levels are required for mounting
- Delivery: 1 pair

Material:
sheet metal, galvanised
Load capacity:
50 kg

Description	Order no.
screwable	312-544
hook-in	316-544-00

26 Potential equalisation bar 1 U

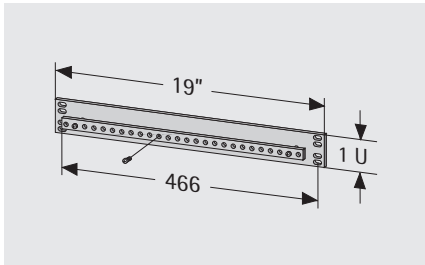


- 30 mm² inkl. 10 pull bows
- mounting material included

L mm	Order no.
2000	640-028-08
1800	640-028-10



**26 19" Potential equalisation bar
1 U**



- for 19" or cabinet rack installation
- connection options: 27 x M 5
- rail cross-section: 50 mm²

Material:

sheet metal, copper

Noise absorption foam



- absorbs up to 10 dB(A) of sound in enclosures (e.g. fan noise)
- self-adhesive on one side
- thermal conductivity: 0.033 W/mk (acc. to DIN 52612)
- temperature range: -40 °C to +100 °C

Material:

grey PUR ester foam (10 mm), with indentations, partially compressed (air permeable)

Delivery: unmounted

Delivery: 1 m²

If required, we will be happy to affix the noise absorption foam for you before delivering your cabinets or enclosures!

Order no.
640-028-00

Order no.
671-211

LED cabinet lamp



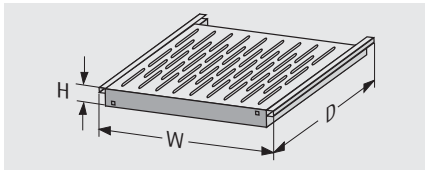
- cost-optimised LED technology with a power consumption of 5 W (light intensity equivalent to a 75 W light bulb)
- internal power supply unit with wide range voltage 100 - 230 V / AC
- long-life and no maintenance (service life at 20 °C = 60,000 h)
- available with switch or motion detector
- magnetic attachment for individual mounting in the cabinet
- pressure clamp connection

Connection sockets and connections must be ordered separately!

Description	Order no.
LED cabinet light with switch	640-143-05
LED cabinet light with motion detector	640-143-06
Connection with Euro plug, L = 2.5 m	640-143-08



27 Shelf without 19" extension "fixed installation"



- for mounting into cabinet rack without 19" level
- extraction length: 500 mm
- max. cabinet depth: 800 mm

Material:

sheet metal

Finish:

RAL 7035 light grey

Load capacity:

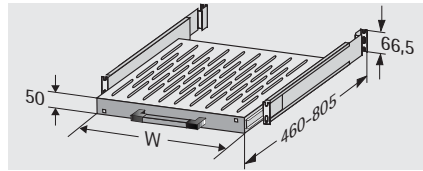
80 kg (distributed load)

Dimensions (H x W x D):

1,5 U (66,5 mm) x 465 x 410 mm

Cabinet width	Order no.
600 mm	318-141-08
800 mm	318-141-05

27 Shelf without 19" extension "extractable"



- for mounting into cabinet rack without 19" level
- simple one-person assembly
- extraction length: 500 mm
- max. cabinet depth: 800 mm

Material:

sheet metal

Finish:

RAL 7035 light grey

Load capacity:

60 kg (distributed load)

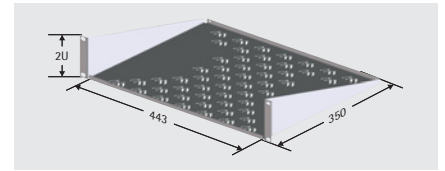
Dimensions (H x W x D):

1,5 U (66,5 mm) x 465 x 410 mm

1,5 U (66,5 mm) x 665 x 410 mm

Cabinet width	Order no.
600 mm	318-141-04
800 mm	318-141-06

27 19" shelf 2U "fixed"



- simple assembly on a 19" grid (only one 19" level required)
- ventilated
- Footprint: 443 x 350 mm

Material:

sheet metal

Finish:

RAL 7035 light grey

Load capacity:

15 kg (distributed load)

Dimensions (H x W x D):

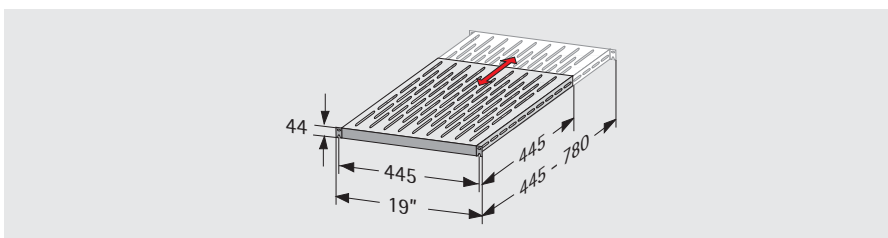
2 U (88 mm) x 19" (482,6 mm) x 350 mm

Floor space (w x d):

443 x 350 mm

Order no.
315-810-20

27 19" shelf 1 U "VARiplain" fixed installation with 19" grid



- depth variable due to VARiplain technology
- telescopic: 445 - 780 mm (see fig.)
- simple one-person assembly through open long hole in the 19" front (hook-in)
- mounting material included

Material:

sheet metal 2 mm

Finish:

RAL 7035 light grey

Load capacity:

150 kg (distributed load)

Dimensions (H x W x D):

1 U (44 mm) x 19" (482,6 mm) x

445 - 780 mm

Floor space (w x d):

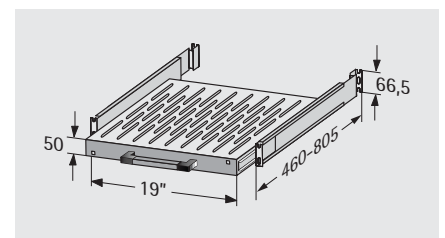
445 x (445 - 780) mm

Delivery:

mounting material included

Order no.
316-036-99

27 19"-shelf 1,5 U "extractable"



- variable-depth installation
- extraction 500 mm
- simple one-person assembly

Material:

sheet metal

Finish:

RAL 7035 light grey

Load capacity:

60 kg (distributed load)

Dimensions (H x W x D):

1,5 U (66,5 mm) x 19" (482,6 mm) x 465 - 665 mm

Floor space (w x d):

410 x (465 - 665) mm

D mm	Order no.
465	318-141-00
665	318-141-01



TiRAX "plug & play"

- dismantlable steel profile cabinet rack
- two lateral sash doors with quick lock mechanism
- front viewing door with three-point locking and tinted toughened safety glass
- rear sheet metal door with three-point locking, installation as side door possible
- both doors can accommodate a profile half cylinder, L = 40 mm
- 19" level 42 U / 24 U, front and rear
- 10 metal cable clamps at the front 19" mount (6 clamps at H = 1200 mm)
- two cable guard rails with integrated cable management bracket
- top plate 2-part, with triple fan module
- 19" power strip 1 U (9-way)
- multi-part bottom plate with rubber foam cable entry

- cabinet lamp with power outlet and magnetic holder
- equipotential bonding set (installed)
- cable entry base H = 100 mm
- screw set M 5 (50x)

Finish:

Trim parts, base
RAL 7035 light grey
Design profiles:
RAL 5014 pigeon blue

Delivery:

fully assembled, prewired on central socket and tested / base provided

Dimensions (H x W x D) mm	Order no.
(2000 + 100) x 800 x 800	318-200-01
(1200 + 100) x 800 x 800	318-200-29



TiRAX "active"

- dismantlable steel profile cabinet rack
- two lateral sash doors with quick lock mechanism
- front viewing door with three-point locking and tinted toughened safety glass
- rear sheet metal door with three-point locking, installation as side door possible
- both doors can accommodate a profile half cylinder, L = 40 mm
- 19" level 42 U / 24 U, front and rear
- 10 metal cable clamps (6 clamps at H = 1200 mm) at the front 19" level
- 2-part cover plates in top sheet, with 3-way fan module
- 19" power strip 1 U (9-way)
- multi-part bottom plate with rubber foam cable entry
- equipotential bonding set (installed)
- cable entry base H = 100 mm
- screw set M 5 (50x)

Finish:

Trim parts, base
RAL 7035 light grey
Design profiles:
RAL 5014 pigeon blue

Delivery:

fully assembled, base provided

Dimensions (H x W x D) mm	Order no.
(2000 + 100) x 800 x 800	318-200-02
(1200 + 100) x 800 x 800	318-200-09





TiRAX "passive", IP 54

- dismantlable steel profile cabinet rack
- two lateral sash doors with quick lock mechanism
- front viewing door with three-point locking and tinted toughened safety glass
- rear sheet metal door with three-point locking, installation as side door possible
- both doors can accommodate a profile half cylinder, L = 40 mm
- 19" level 42 U / 24 U, front and rear
- 10 metal cable clamps (6 clamps at H = 1200 mm) at the front 19" level
- top panel, single-piece, liftable if necessary
- multi-part bottom plate with rubber foam cable entry
- equipotential bonding set (installed)
- cable entry base H = 100 mm
- screw set M 5 (50x)

Finish:

Trim parts, base

RAL 7035 light grey

Design profiles:

RAL 5014 pigeon blue

Delivery:

fully assembled, base provided



Dimensions (H x W x D) mm	Order no.
(2000 + 100) x 800 x 800	318-200-03
(1200 + 100) x 800 x 800	318-200-08



TiRAX "cool-box", IP 54
TiRAX "cool-roof", IP 54

- dismantlable steel profile cabinet rack
- two lateral sash doors with quick lock mechanism
- front viewing door with three-point locking and tinted toughened safety glass
- rear sheet metal door with three-point locking
- both doors can accommodate a profile half cylinder, L = 40 mm
- 19" level 42 U, front and back
- 10 metal cable clamps at the front 19" level
- top panel, single-piece
- 19" power strip 1 U (9-way)
- equipotential bonding set (installed)
- door contact switch for shutdown of air conditioning if front door is opened
- cable entry base H = 100 mm
- screw set M 5 (50x)
- multi-part bottom plate with rubber foam cable entry

TiRAX "cool-box":

- air conditioning 1050 W (Ta35 / Ti35) installed on lateral hinged door (mounted alternatively right or left)

TiRAX "cool-roof":

- air conditioning 1050 W (Ta35 / Ti35), installed on the top



Finish:

Trim part, base:

RAL 7035 light grey

Design profiles:

RAL 5014 pigeon blue

Delivery:

partially assembled (air conditioning mountable with 6 screws on lateral hinged door or on top panel), base provided

Air conditioning: cooling capacities of up to 6 KW possible on request. Contact us to find more!

Dimensions (H x W x D) mm	Description	Order no.
(1200 + 100) x (800 + 140) x 800	TiRAX "cool-box" 24 U	318-200-55
(2000 + 100) x (800 + 140) x 800	TiRAX "cool-box" 42 U	318-200-04
(1200 + 100) x (800 + 140) x 1000	TiRAX "cool-box" server cabinet 24 U	318-200-54
(2000 + 100) x (800 + 140) x 1000	TiRAX "cool-box" server cabinet 42 U	318-200-11
(2000 + 500) x 800 x 800	TiRAX "cool-roof" 42 U	318-200-05
(2000 + 500) x 800 x 1000	TiRAX "cool-roof" server cabinet 42 U	318-200-28



19" TiRAX "heavy-weight" pivot frame cabinet

The "heavy-weight" pivot frame cabinet is based on the TiRAX cabinet series and enables a pivot integration of 19" plug-in units with **high loads of up to 250 kg** (e.g. power amplifiers).

- visually stylish cabinet system
- protection class IP 54
- consists of stable cabinet rack and easily detachable trim parts
- good accessibility for plant engineering and on-site installation
- cable entry possible as standard from below, above or from the sides
- optional mounting plate in the rear area enables the installation of connection splitters, cable ducts, c-profiles or top hat rails
- lateral offset mounting possible
- maximum mounting depth: 440 mm
- pivot frame can be hinged on the left as well as on the right side and is equipped with a double-bit key lock
- frame can be pivoted up to 95°

Finish:

Trim parts, base
RAL 7035 light grey
Design profiles:

RAL 5014 pigeon blue

Dimensions (H x W x D):

(2000 + 100) x 800 x 800 mm

Delivery:

fully assembled, base provided

Further sizes on request!

Order no.
318-200-40

Slide rails



- to support heavy and / or deep plug-in units
 - Delivery: 1 Paar
- Load capacity:** 50 kg

Order no.
318-129



(Fig. does not correspond to standard delivery)

Cabinet bottom with pivot frame crossbar and flexible cable entry via foam rubber



Delivery

Pos.	pc.	Description
1	1	Cabinet rack
2	1	Heavy load pivot frame with 19" level 39 U
3	1	Viewing door with turning lever lock
4	1	Rear door with turning lever lock
5	2	Lateral sash doors with quick lock mechanisms
6	1	Two piece bottom panel with cable entry
7	1	Top, height-adjustable (for passive ventilation)
8	1	equipotential bonding set, installed
9	1	Base H = 100 mm, front side with ventilated cover panel
10	1	Screw set M 5 (50x)

3-way fan module



- unimpeded air flow: 345 m³/h
- complete with connecting cable, temperature regulation and adapter for cabinet mounting

Order no.
318-100-55

Pivot frame panel



- to cover the lateral area in case of off-set installation

Finish: RAL 7035 light grey

Order no.
318-129-22



19" EMC cabinet TiRAX "60 dB"

Based on the TiRAX cabinet series, the EMC cabinet "60 dB" offers a reliable EMC and IP protection even in rough industrial environment conditions.

- fully symmetrical cabinet construction: all doors and lateral sash doors are universally mountable
- protection class IP 54
- stylish design: two-tone look with coloured design profiles
- modular interior construction: symmetrical design of cabinet rack enables cable ducts, multi-purpose struts etc. to be universally mountable
- all enclosure parts are connected to each other conductively via EMC sealings
- double-walled trim parts
- the milled and laser welded profile of the cabinet's galvanised sheet metal side rail ensures high rigidity and permanent electrical conductivity

Finish:

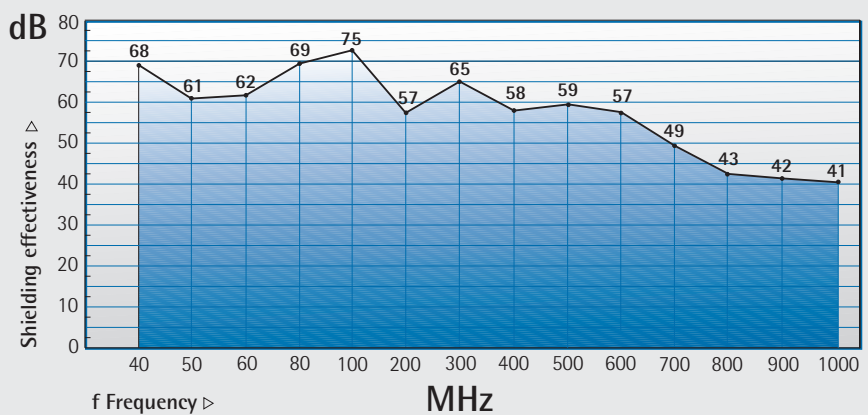
Trim parts, base
RAL 7035 light grey
Design profiles:
RAL 5014 pigeon blue

Dimensions (H x W x D):

(2000 + 100) x 600 x 800 mm

Delivery:

fully assembled



Delivery

Pos.	pc.	Description
1	1	Cabinet rack
2	2	19" level 42 U
3	2	Front and rear door, solid, with turning lever lock
4	2	Sash doors, lateral
5	1	Bottom panel, solid
6	1	Top panel, solid
7	1	equipotential bonding set, installed
8	1	Base H = 100 mm

Further sizes on request!

Order no.
318-210-10



TiRAX "cool & safe", IP 54

- dismantlable steel profile cabinet frame
- two lateral sash doors with quick release
- front door with three-point locking and tinted tempered safety glass
- rear sheet metal door with three-point locking (installation also possible as side door)
- both doors suitable for receiving a profile half-cylinder
- 19" level front and rear
- roof, one-piece
- floor panel multi-part, with foam cable entry
- earthing set, mounted
- base H = 100 mm
- screw set M 5 (50-fold)
- **19" Fire extinguishing system:**
 - master module 2 HE
 - door contact switch for suppressing the deletion when opening the doors
 - slide rail set, depth-variable
 - two multifunction crossbeams
- **Air conditioning:**
Air conditioner 1050 W (Ta35 / Ti35) mounted on lateral sash door (door can be mounted on the right or left)

Finish:

Trim parts, base
RAL 7035 light grey

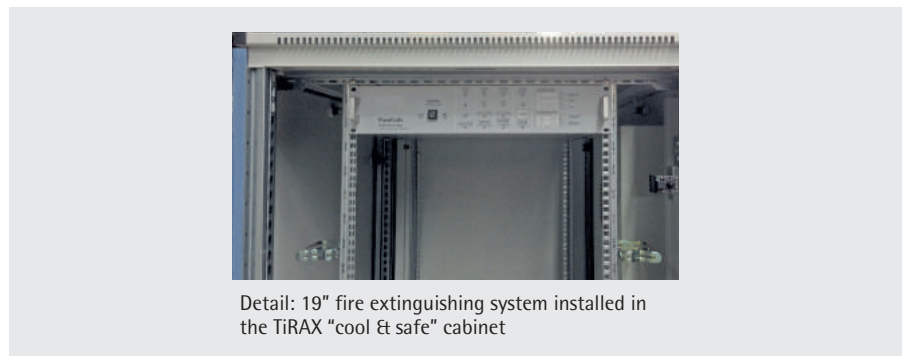
Design profiles:
RAL 5014 pigeon blue

Dimensions (H x W x D):

(2000 + 100) x (800 + 138) x 1000 mm

Delivery:

fully assembled, base provided



Order no.

318-202-76



19" TiRAX Colocation cabinet

The colocation cabinets are based on the TiRAX cabinet system and were especially designed for IT facilities and data centres.

- all compartments are separated holo-hedral by shelves
- cable inlet to each compartment by a separate cable duct
- 19" levels are individually adjustable in depth at each compartment
- with perforated front and rear doors that can be locked separately
- electronic locking systems available on request
- closed bottom plate
- mounted equipotential bonding set
- set of cable clamps (10 fold)
- 19" screw set M 5 (50-fold)

Finish:

Rack, cover panels:
RAL 9005 jet black

Design profiles:
RAL 7037 dusty grey

Dimensions (H x W x D):

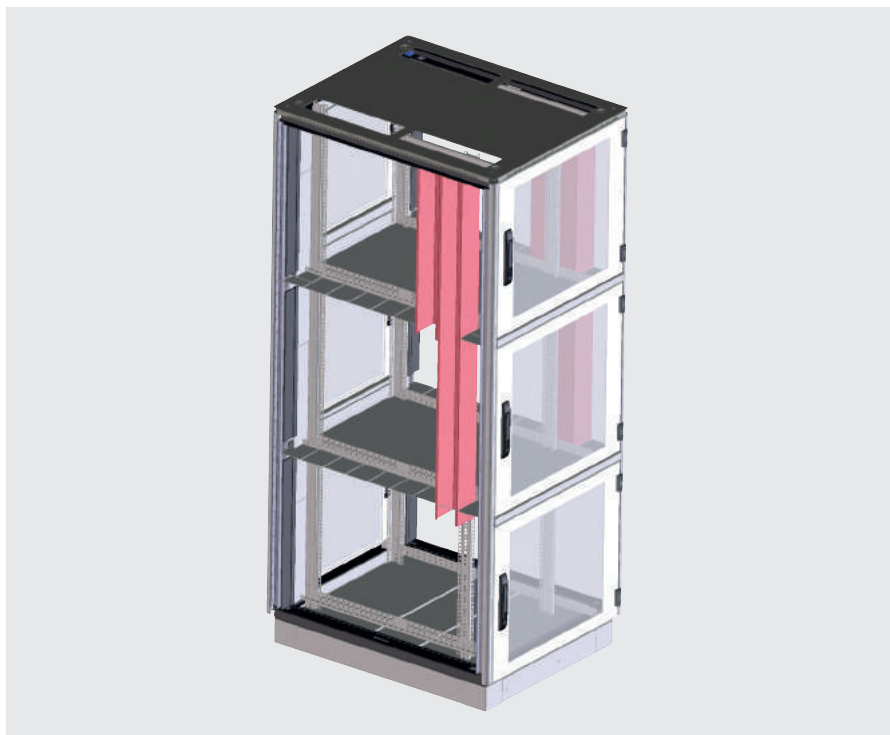
2000 x 800 x 1000 mm

Protection system:

IP 20

Delivery:

fully assembled, base provided



Further accessories like locking systems, etc. can be found at www.apra.de!

Delivery

Item	pc.	Description
1	1	Rack
2	2	19" extension set (2 levels per compartment)
3	4/6	Perforated doors
4	1/2	Separating shelves
5	1	Cable duct per compartment
6	1	Top cover with cable entry (cutout covered with brush)
7	2	Side panels

Description	Order no.
double: 2 x 19 U	318-911-40
triple: 3 x 12 U	318-908-60



19" TiRAX Computer Cabinet

- enables the installation of a reliable, user-friendly and also visually stylish computer workstation in adverse environmental conditions in industrial fields
- protection class IP 54
- cooling system can be integrated
- can be fitted with 19" components or be built as complete tower solution
- cables entry from underneath as standard, but top or lateral cable entry also possible
- three-part bottom panel with cable entry through foam rubber pad
- a profile half cylinder locks the keyboard cover
- doors with turning lever lock (concealed) for profile half cylinder

Material:

sheet metal, galvanised

Finish:

Trim parts, base

RAL 7035 light grey

Design profiles:

RAL 5014 pigeon blue

Protection system:

IP 54

Delivery:

fully assembled



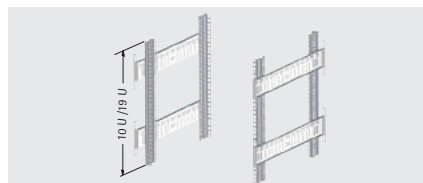
A wide range of ventilation and air conditioning components can be found in the section "Air conditioning technology" from page 129. We will be pleased to put your system together!

Dimensions (H x W x D) mm	Order no.
(1800 + 100) x 600 x 600	318-202-65
(1800 + 100) x 600 x 800	318-202-85

Delivery

Pos.	pc.	Description
1	1	Cabinet rack
2	1	Two part front, consisting of viewing door, including operating unit, solid door
3	1	Rear door with turning lever lock
4	2	Side panels
5	(1) (1)	Two part bottom panel with cable entry (with D = 600 mm) Three part bottom panel with cable entry (with D = 800 mm)
6	1	Top panel, detachable
7	1	equipotential bonding set, installed
8	1	Base, H = 100 mm

19" extension set



- 19" vertical mountings with crossbars for individual installation (each 4 pieces)
- Extension kit 10 U: installation behind the upper glazed door
- Extension kit 19 U: installation behind the lower closed door

Extension set 10 U

Cabinet depth (D)	Order no.
600 mm	318-201-81
800 mm	318-201-82

Extension set 19 U

Cabinet depth (D)	Order no.
600 mm	318-201-83
800 mm	318-201-84



**19" standing workstation /
19" stand-alone
distribution system**

**[A] 19" standing workstation with
wooden desktop (without figure)**

- work surface of the desktop
(W x D = 712 x 800 mm)

**[B] 19" stand-alone distribution
system with a single-piece top
panel of sheet metal**

- dismantlable cabinet rack
- front-side tinted viewing door with
turning lever lock (profile half cylinder
accommodation possible)
- 19" level 19 U, front and back
- 4 crossbars for depth adjustment of
19" levels
- rear cable entry point with brush, top-
mounted for feeding through screen
and keyboard cables (see fig. 2), for the
19" stand-alone distribution system
bottom-mounted for cable entry
- levelling feet to align the workstation

Finish:

Trim parts, desktop:
RAL 7035 light grey
Design profile:
RAL 5014 pigeon blue

Delivery:

fully assembled



Delivery

Pos.	pc.	Description
1	1	Cabinet rack, dismantlable
2	1	Tinted viewing door with turning lever lock
3	3	Sash doors (rear/side)
4	4	Vertical mountings 19 U
5	4	Depth crossbars
6	1	Two piece bottom panel
7	1	Desktop (only for 19" standing workstation) Top panel (only for 19" stand-alone distribution system)
8	1	Rear cable entry point with brush seal top-mounted (for 19" standing workstation) bottom-mounted (for 19" stand-alone distribution system)
9	4	Levelling feet
10	1	equipotential bonding set (only for 19" stand-alone distribution system)
11	1	19" screw set M 5 (50 x)

Other preferred colours

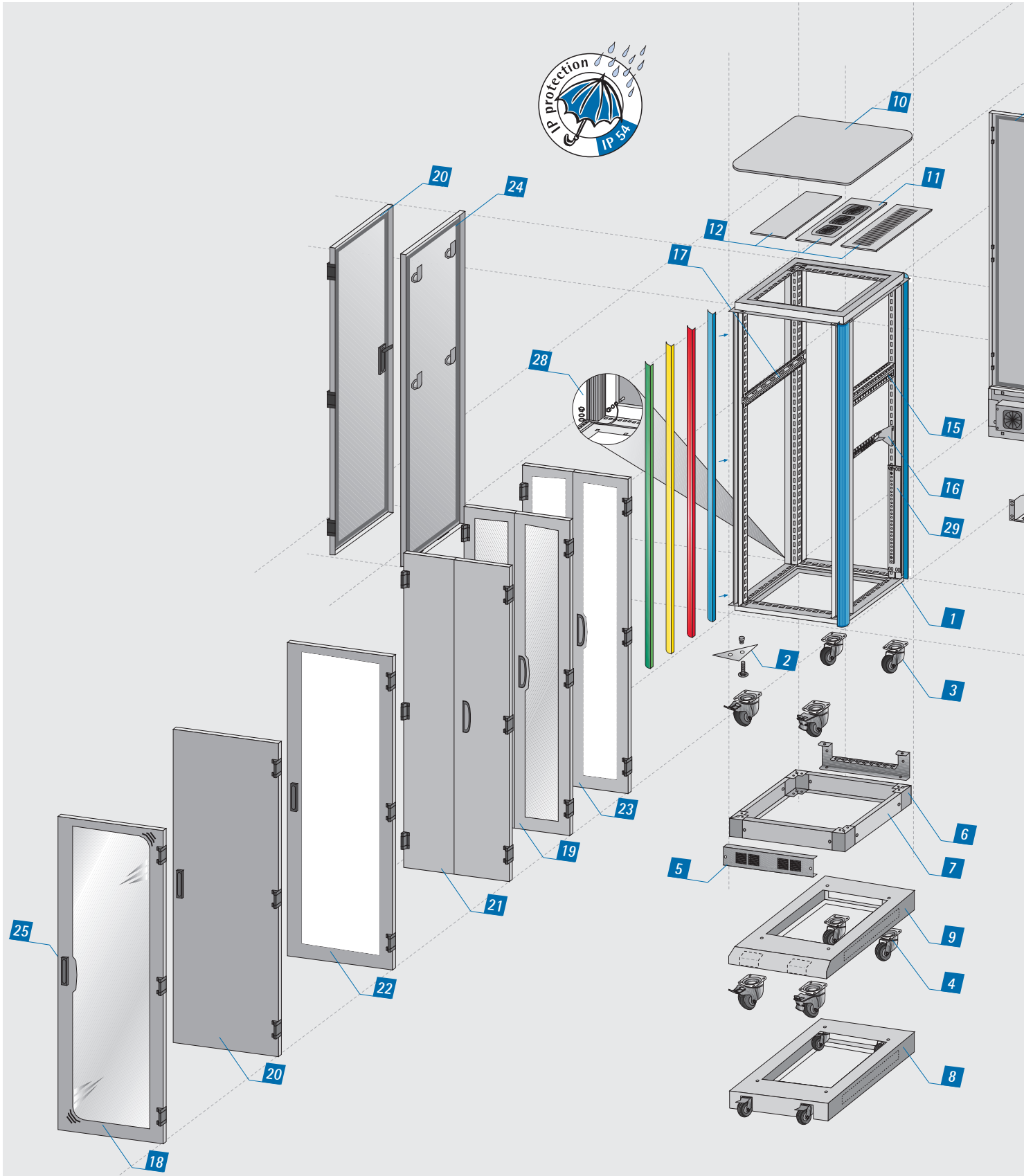
- RAL 1032 (broom yellow)
- RAL 5010 (gentian blue)
- RAL 3002 (carmine red)
- RAL 6029 (mint green)
- RAL 7037 (dusty grey)

Colour display similar!

Description	Dimensions (H x W x D) mm	Order no.
19" standing workstation	1100 x 712 x 800	318-202-75
19" distribution system	1100 x 600 x 800	318-202-30

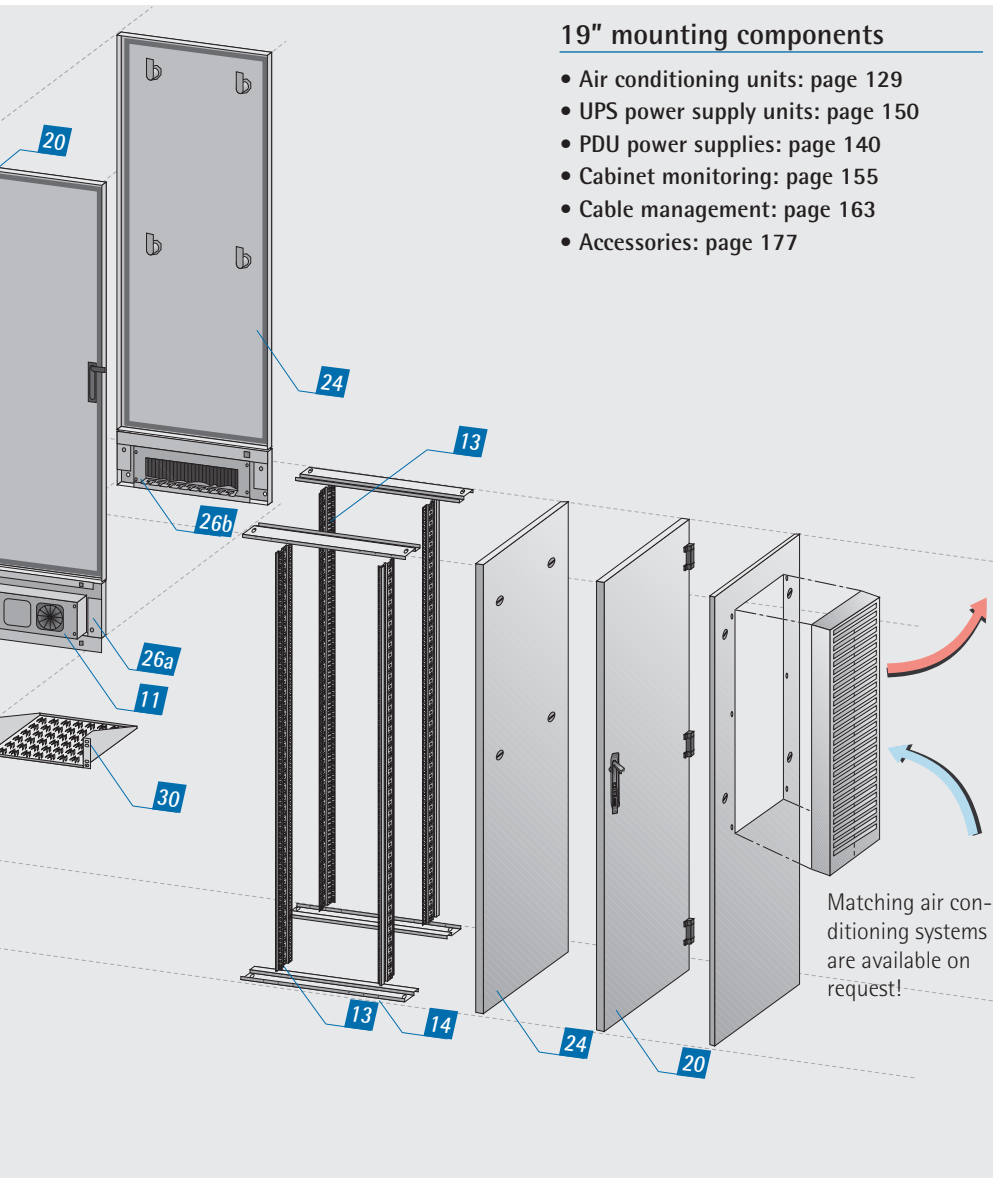


Configure your own individually designed cabinet.



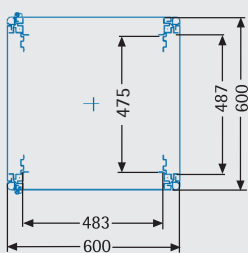


Select the required cabinet components step by step:

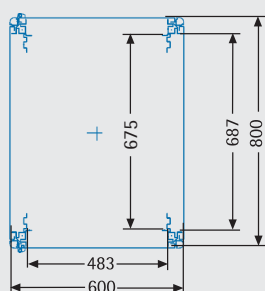


Item	Description	Page
1	Cabinet rack	42
2	Adjusting feet	43
3	Castor set	43
4	Castor set, tilt-prevention	43
5	Castor base	43
6	Tilt prevention base	43
7	Base covers	43
8	Filter set	44
9	Base corner set	44
10	Top	44
11	Fan module	45
12	Cover plates	47
13	19" vertical mounting	48
14	Cross bar for 19" integration	48
15	Multi-purpose crossbar	49
16	Reduction crossbar	49
17	Cable guarding rail	50
18	Viewing door	51
19	Viewing door, split	51
20	Solid door	51
21	Solid door, split	52
22	Perforated door	52
23	Perforated door, split	52
24	Sash door	53
25	Locking system for doors	53
26a	Fan installation module	54
26b	Cable entry module	54
27	Cabinet connection set	54
28	Earthing set	54
29	Potential equalisation rail	56
30	Shelves	57

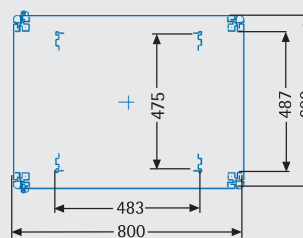
Technical information: max. 19" installation dimensions



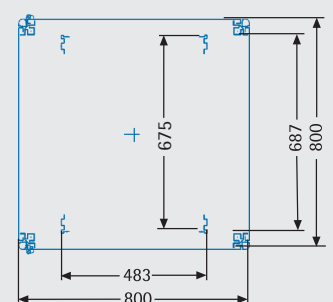
Top view cabinet rack
W x D = 600 x 600 mm



Top view cabinet rack
W x D = 600 x 800 mm



Top view cabinet rack
W x D = 800 x 600 mm



Top view cabinet rack
W x D = 800 x 800 mm



1 Cabinet rack, dismantlable

The cabinet rack consists of two identical sheet metal frames (1), four sheet metal functional profiles (2) and four painted sheet metal design profiles (3) clipped onto the functional profiles.

Dimensions:

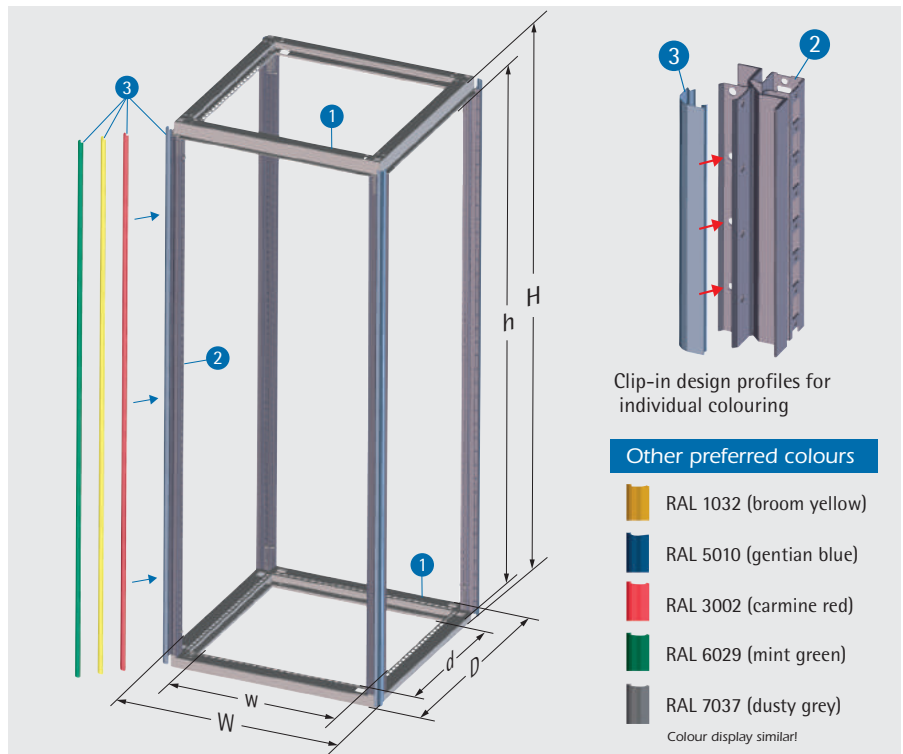
W: Cabinet width
 w: clear opening width
 $w = W - 146 \text{ mm}$
 D: Cabinet depth
 d: clear opening depth
 $d = D - 146 \text{ mm}$
 H: Cabinet height
 h: clear opening height
 $h = H - 100 \text{ mm}$

Finish:

- (1) Top / bottom frame: RAL 7035 light grey
- (2) Functional profile: galvanised
- (3) Design profile: RAL 5014 pigeon blue

Delivery:

fully assembled

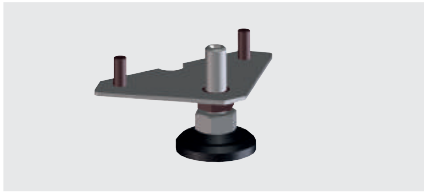


The design profile (3) can be matched to your company colour if desired.

Dimensions (W x D) mm	U	H mm	Order no.		
600 x 600	24	1200	318-660-02		
800 x 600			318-860-02		
800 x 800			318-880-02		
600 x 1000			318-601-02		
800 x 1000			318-810-02		
600 x 600	33	1600	318-660-06		
800 x 600			318-860-06		
800 x 800			318-880-06		
600 x 600	37	1800	318-660-08		
800 x 600			318-860-08		
800 x 800			318-880-08		
600 x 600	42	2000	318-660-10		
800 x 600			318-860-10		
800 x 800			318-880-10		
600 x 1000			318-610-10		
800 x 1000			318-810-10		
600 x 1200			318-612-10		
800 x 1200			318-812-10		
600 x 600	46	2200	318-660-12		
800 x 600			318-860-12		
800 x 800			318-880-12		
600 x 1000			318-610-12		
800 x 1000			318-810-12		
600 x 1200			318-612-12		
800 x 1200					318-812-12



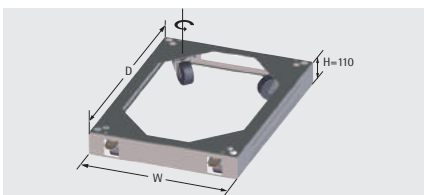
2 Adjusting feet



- to be screwed onto the rack (1) or to the corners of the base
- Height min. = 25 mm
- set = 4 pieces

Description	Order no.
Mounting on rack	318-026-00
Mounting on base	318-026-02

5 Castor base



- 4 swivel castors (2 with parking brake)
- cable entry from rear (opening with brush) and side

Finish:

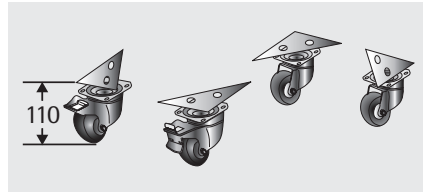
RAL 7035 light grey

Load capacity:

450 kg

W mm	D mm	Order no.
600	600	318-126-60
600	800	318-126-80
800	600	318-128-60
800	800	318-128-80

3 Castor set



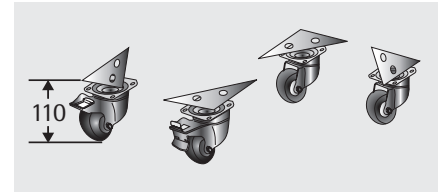
- to be screwed directly onto the cabinet rack (1)
- 4 swivel castors (2 with parking brake)

Load capacity:

450 kg

Order no.
318-026-10

4 Castor set, tilt prevention base



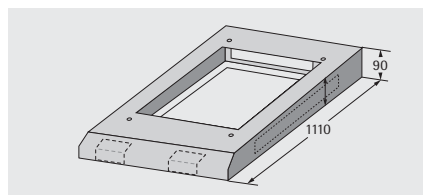
- to be screwed directly onto the cabinet rack (1)
- 4 swivel castors (2 with parking brake)

Load capacity:

450 kg

Order no.
316-026-50

6 Tilt prevention base



- static base with integrated tilt prevention
- offers secure standing when drawers with heavy equipment are extracted
- rear or lateral cable entry

Material:

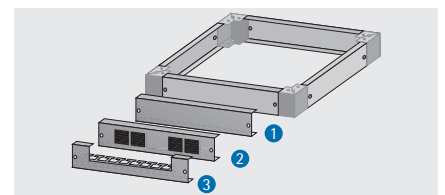
sheet metal

Finish:

RAL 7035 light grey

W mm	D mm	Order no.
600	1000	318-026-11
800	1000	318-028-11

7 Base covers



- for individual base construction combined with our base corner set
- 4 covers complete one base

Type 1: solid

Type 2: ventilated

Type 3: with cable entry

Material:

sheet metal

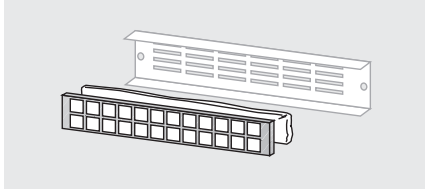
Finish:

RAL 7035 light grey

W / D mm	Type	Order no.
600	1	318-100-10
800		318-100-20
1000		318-100-30
1200		318-100-50
600	2	318-100-12
800		318-100-22
600	3	318-100-14
800		318-100-24



8 Filter set for base covers



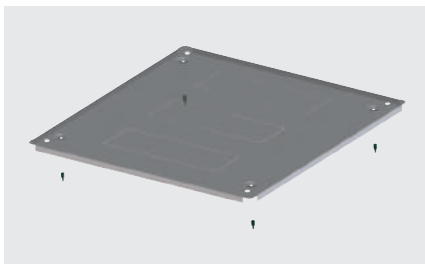
- matches base covers "Type 2 ventilated" (see pos. 7)

Material:

sheet metal galvanised, filter fleece

W / D mm	Order no.
600	318-100-16
800	316-101-99

Spacer bolts for top plates



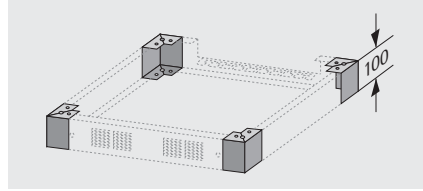
- The further lifting (H = 15 mm) of top panel is possible with additional spacer bolts.
- set = 4 pieces

Material:

steel

Order no.
316-016-65

9 Base corner set



- set = 4 pieces
- includes mounting materials
- extendable
- Height: 100 mm

Material:

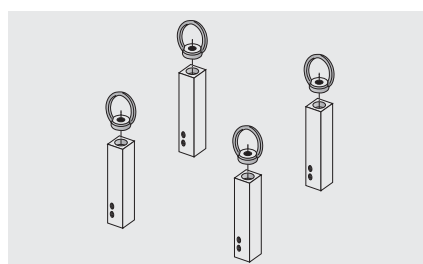
sheet metal

Finish:

RAL 7035 light grey

Order no.
318-100-00

Eye bolt kit



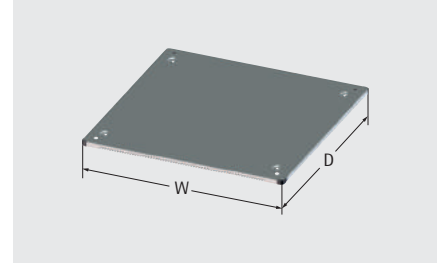
- lifting eye bolts for cabinet relocation
- set = 4 pieces

Load capacity:

500 kg

Order no.
318-026-20

10 Top, solid



- can be raised up to 15 mm for ventilation (using lifting eye bolts, see below)
- suitable for IP 54

Finish:

RAL 7035 light grey

Dimensions mm	Order no.
600 x 600	318-016-60
600 x 800	318-016-80
600 x 1000	318-020-60
600 x 1200	318-022-60
800 x 600	318-018-60
800 x 800	318-018-80
800 x 1000	318-020-80
800 x 1200	318-022-80



11 Basic fan module



- fan module, fully pre-wired
- ventilation or extraction, depending on assembly position
- for installation in the top/bottom area of the cabinet
- different power cords available (see right side)

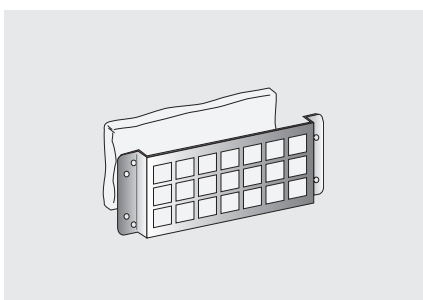
Material:
polycarbonate UL94 V-0
Finish:
similar to RAL 9005 jet black
Dimensions (H x W x D):
44 x 450 x 140 mm

The fan characteristics and noise levels can be found in the diagrams on page 133.

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

Description	Unimpeded air flow	Basic module	Extension module
fan module 1-way	115 m ³ /h	230-500-01	230-500-11
fan module 2-way	120 m ³ /h	230-500-02	230-500-12
fan module 3-way	345 m ³ /h	230-500-03	230-500-13
fan module "silent"	240 m ³ /h	230-500-43	-

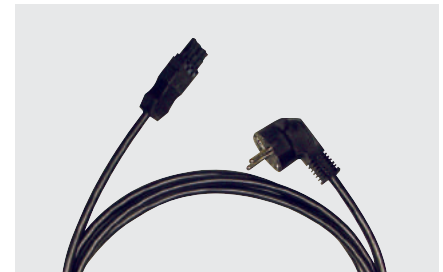
Filter set for fan module



Material:
Aluminium, filter fleece

Description	Order no.
Filter set	316-100-99
Spare filter (5 pieces)	671-200-05

Power cord standard, 3 m



Connection	Order no.
Earthing-pin	640-044-05
IEC connector	230-500-15
Without plug for fixed connection	230-500-16

Power cord 3 m with thermostat 0 - 60 °C



Connection	Order no.
Earthing-pin	230-500-04
IEC connector	230-500-05
Without plug for fixed connection	230-500-06



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 metal

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.



The rear of the top cover offers a **break-out possibility for a cable entry** (a).

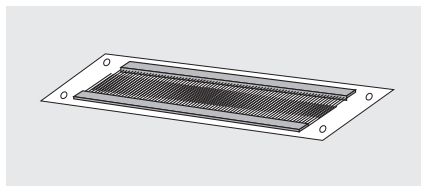
Technical information

Airflow (unimpeded)	1545 m ³ /h
Noise level	40 dB (A)
Operating voltage/frequency	230 V / 50-60 Hz
Power consumption	68 W / 50 Hz
Size of roof unit (H x W x D)	228 x 551 x 551mm

Order no.

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 cable entry (a)		316-111-10
Power lead (3 m) with thermostat 0-60 °C		230-500-04

Brush set for roof ventilation unit "Silent"



- for use in the perforated breakthrough of the roof ventilator "Silent"
- for use in the openings (a) of the roof
- Dimensions W x D: 365 x 120 mm

Order no.
316-111-10

Power lead 3 m with thermostat 0-60 °C



- for installation of the roof ventilation unit "Silent"

Order no.
230-500-04

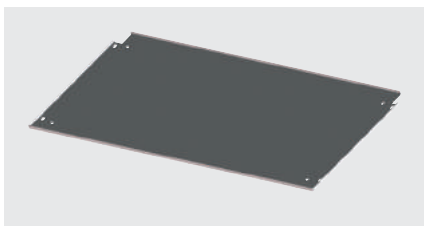


12 Cover plates

The cover plates can be mounted directly on the cabinet rack [1] (top or base) according to the layout shown.

	Depth (D) 600 mm	Depth (D) 800 mm	Depth (D) 1000 mm	Depth (D) 1200 mm
(W) 600 mm				
(W) 800 mm				

Cover plate, solid



- individual break-throughs on request

Size	Order no.
1	318-111-01
2	318-111-02
3	318-111-03
4	318-111-04
5	318-111-05
6	318-111-06
7	318-111-07

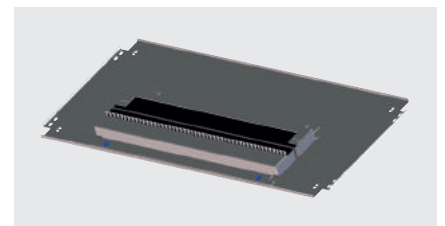
Cover plate for fan base module



- cover plate for mounting of fan modules [pos. 11]
- also mountable with filter set 316-100-99

Size	Order no.
1	318-111-21
2	318-111-22

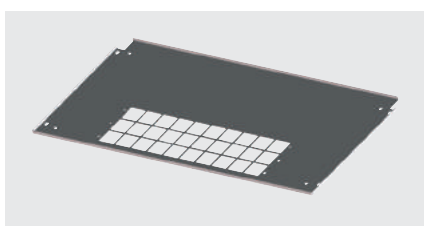
Cover plate for cable entry



- cover plate for sealed cable entry
- suitable for CEE-plugs

Size	Order no.
1	318-111-25
2	318-111-26
5	318-111-37
6	318-111-38

Cover plate perforated

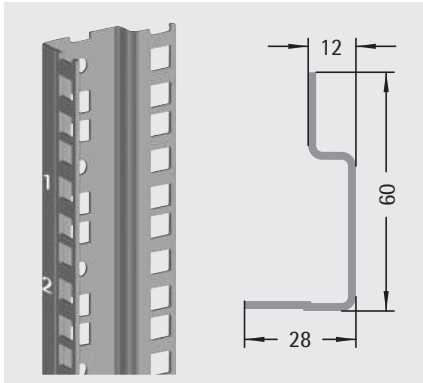


- extendable with filter set 316-100-99

Size	Order no.
1	318-111-23
2	318-111-24



13 19" vertical mounting



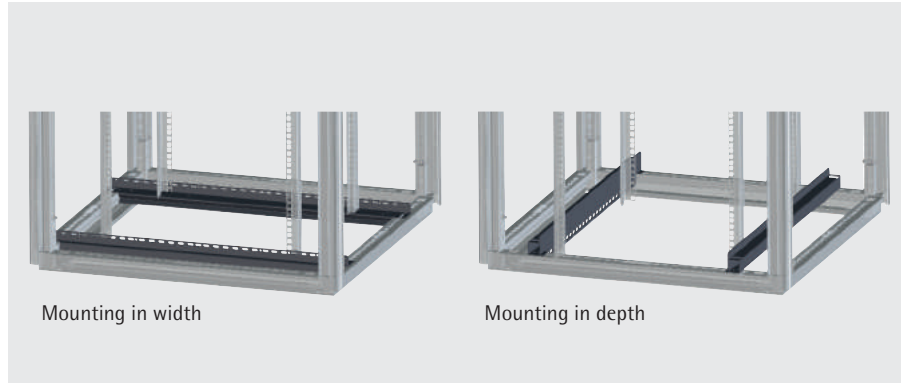
- ASA-perforation (1/2 19" perforation)
- with U-labelling

Material:

sheet metal, galvanised

U	Order no.
6	316-120-06
12	316-120-12
15	316-120-15
19	316-120-19
24	316-120-24
33	316-120-33
37	316-120-37
42	316-120-42
46	316-120-46
48	316-120-48

14 Cross bar for 19" integration



- to install the 19" vertical mountings two cross bars per 19" level are required
- steplessly depth adjustable
- at W = 800 mm the 19" level can be moved laterally

- in case of partial mounting, multipurpose crossbars (Pos. 15) are needed

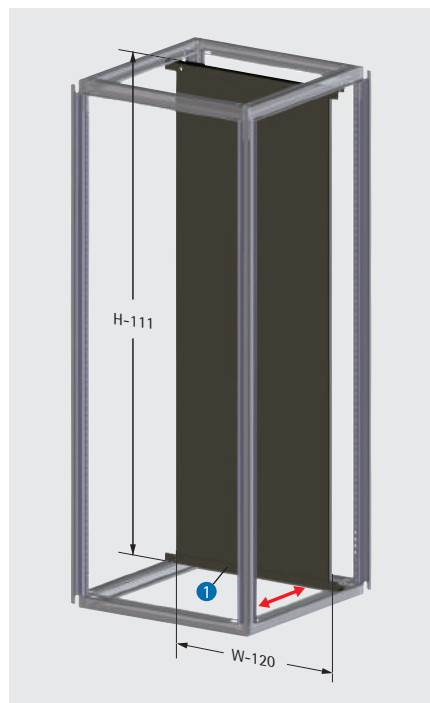
Material:

sheet metal, galvanised

U	W = 600 mm	W = 800 mm	D = 1000 mm	D = 1200 mm
6	318-121-76	318-121-78	318-121-80	318-121-82
12	318-121-76	318-121-78	318-121-80	318-121-82
15	318-121-76	318-121-78	318-121-80	318-121-82
19	318-121-77	318-121-79	318-121-81	318-121-83
24	318-121-76	318-121-78	318-121-80	318-121-82
33	318-121-76	318-121-78	318-121-80	318-121-82
37	318-121-77	318-121-79	318-121-81	318-121-83
42	318-121-76	318-121-78	318-121-80	318-121-82
46	318-121-77	318-121-79	318-121-81	318-121-83
48	-	318-121-70	318-121-72	318-121-74



Mounting plate



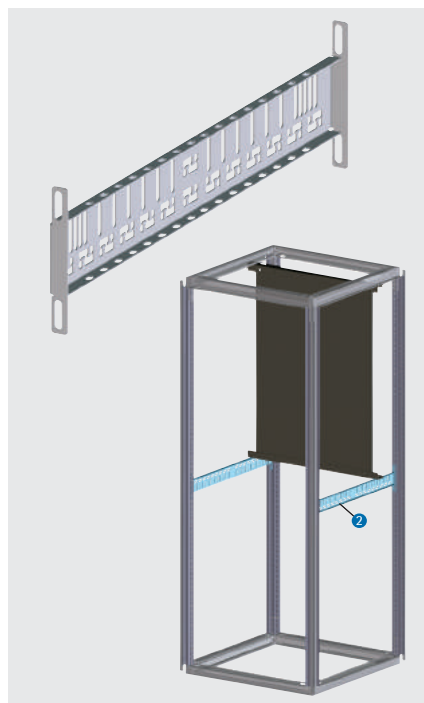
- for mounting heavy components and top hat rails
- is mounted on the cabinet with mounting rails [1] and can be pushed in laterally
- option to adjust the depth in 25mm steps
- multi-purpose crossbars (Pos. 15) are needed for partial mounting

Material:

sheet metal, galvanised

Height (H) mm	Order no. W=600 mm	Order no. W=800 mm
1200	318-130-12	318-130-32
1600	318-130-16	318-130-36
1800	318-130-18	318-130-38
2000	318-130-20	318-130-40
2200	318-130-22	318-130-42

15 Multi-purpose crossbar



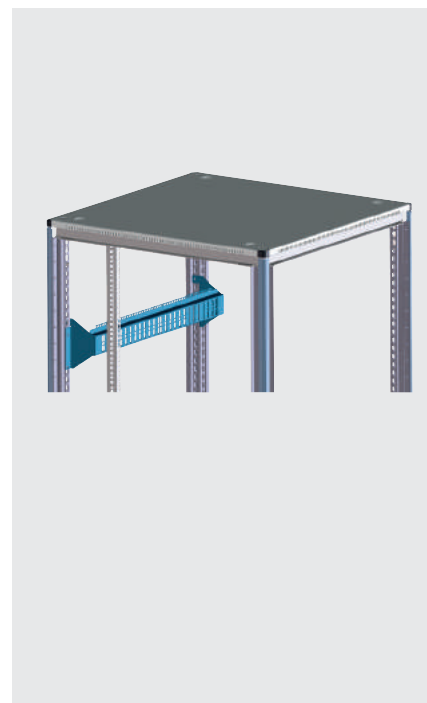
- for 19" partial mounting
- for clean cable entry
- infinitely depth adjustable
- Delivery: 1 piece

Material:

sheet metal, galvanised

Depth (D)/Width (W) mm	Order no.
600	318-120-06
800	318-120-08
1000	318-120-19
1200	318-120-23
500 - 850 (extendable)	318-122-40
700 - 1050 (extendable)	318-122-44

16 Reduction crossbar



- reduces W = 800 mm to 19"
- with integrated cable management bracket
- can be hung up or screwed on

Material:

sheet metal, galvanised

Depth (D)/Width (W) mm	Order no.
600	318-120-10
800	318-120-12
1000	318-120-14
1200	318-120-21



180° hinge kit for pivot frame



- to increase the pivot angle of the 19" pivot frame to 180°

Order no.
318-129-20

19" pivot frame

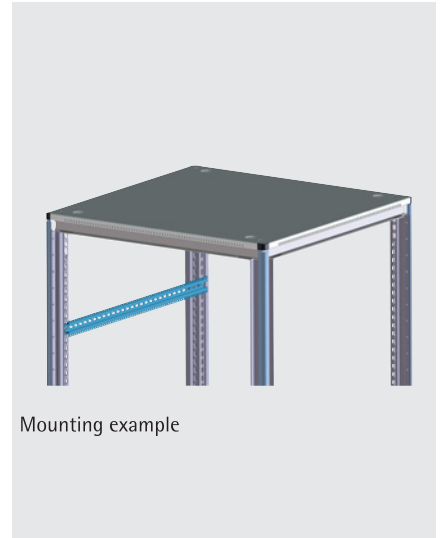


- for cabinet width 800 mm
- pivot angle 95°
- installation centric or asymmetrical

Material:
sheet metal
Finish:
RAL 7035 light grey
Load capacity:
250 kg
Delivery:
incl. crossbars

U	Order no.
21	318-129-24
39	318-129-30

17 Cable guarding rail



Mounting example

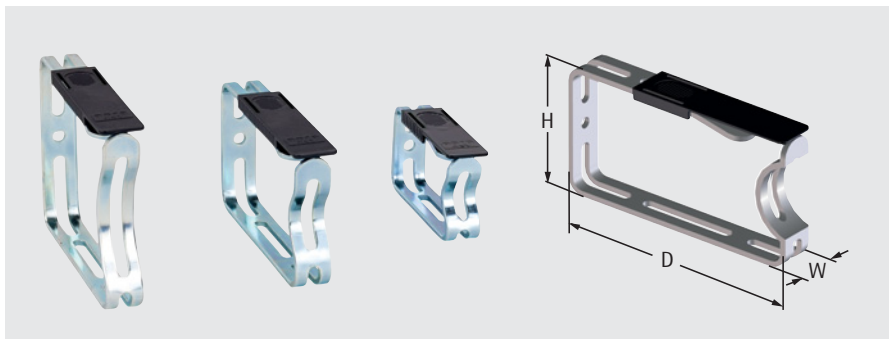
- with integrated cable management bracket
- holds cables in place with cable ties and cable clips

Material:
Aluminium, anodised
Delivery:
mounting material included

Cable clamps can be found on page 167.

Depth (D)/Width (W) mm	Order no.
600 mm	318-121-10
800 mm	318-121-11
Adapter for 1000 mm	316-103-25

Cable clamp, metal (set)

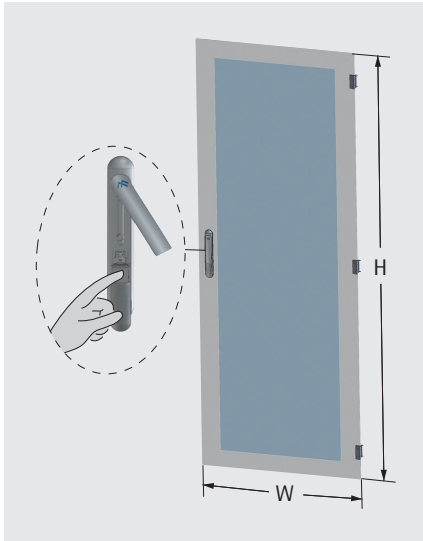


- for securing cables vertically to a 19" frame (for 800 mm wide cabinets)
- set = 10 pieces
- mounting material included

Dimensions (H x W x D) mm	Order no.
44 x 23 x 85	640-036-11
66 x 23 x 125	640-036-12
88 x 23 x 125	640-036-13



18 Viewing door



- with turning lever lock for profile half cylinder, L = 40 mm (with push button opening)

Material:

Frame: sheet metal

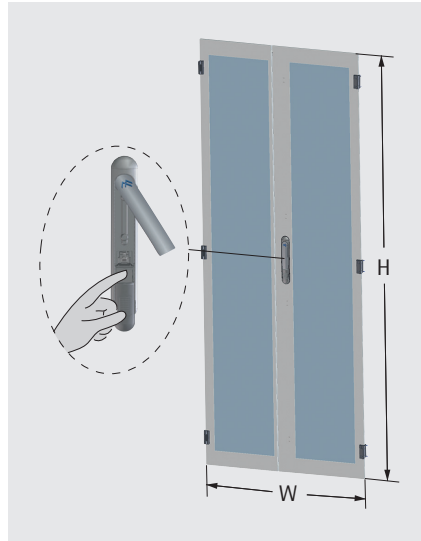
glass: toughened safety glass 4 mm, grey

Finish:

RAL 7035 light grey

Dimensions (H x W) mm	Order no.
1200 x 600	318-612-01
1200 x 800	318-812-01
1600 x 600	318-616-01
1600 x 800	318-816-01
1800 x 600	318-618-01
1800 x 800	318-818-01
2000 x 600	318-620-01
2000 x 800	318-820-01
2200 x 600	318-622-01
2200 x 800	318-822-01

19 Viewing door, split



- with turning lever lock for profile half cylinder, L=40 mm (with push button opening)

Material:

frame: sheet metal,

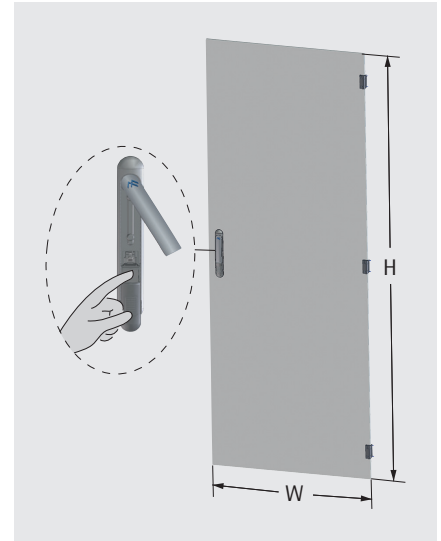
glass: toughened safety glass 4 mm, grey

Finish:

RAL 7035 light grey

Dimensions (H x W) mm	Order no.
2000 x 800	318-820-08
2200 x 800	318-822-08

20 Door, solid



- with turning lever lock for profile half cylinder, L=40 mm (with push button opening)

Material:

sheet metal

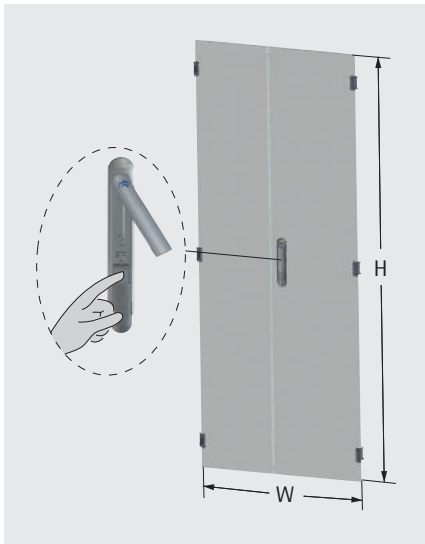
Finish:

RAL 7035 light grey

Dimensions (H x W) mm	Order no.
1200 x 600	318-612-02
1200 x 800	318-812-02
1600 x 600	318-616-02
1600 x 800	318-816-02
1800 x 600	318-618-02
1800 x 800	318-818-02
2000 x 600	318-620-02
2000 x 800	318-820-02
2200 x 600	318-622-02
2200 x 800	318-822-02



21 Split door, solid



- with turning lever lock for profile half cylinder, L=40 mm (with push button opening)

Material:

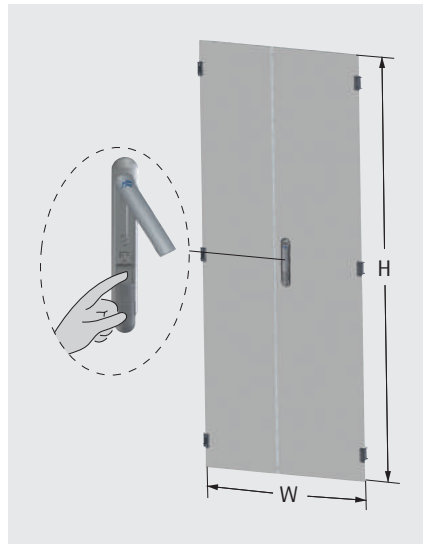
sheet metal

Finish:

RAL 7035 light grey

Dimensions (H x W) mm	Order no.
2000 x 800	318-820-26
2200 x 800	318-822-26

22 Door, perforated



- perforation (83 %)
- with turning lever lock for profile half cylinder, L=40 mm (with push button opening)

Material:

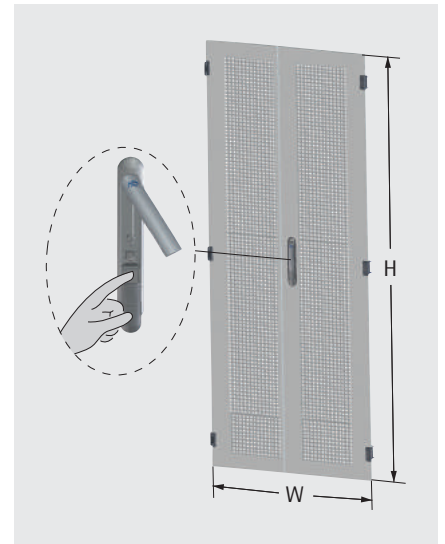
sheet metal, perforated insert

Finish:

RAL 7035 light grey

Dimensions (H x W) mm	Order no.
1200 x 600	318-612-16
1200 x 800	318-812-16
1600 x 600	318-616-16
1600 x 800	318-816-16
1800 x 600	318-618-16
1800 x 800	318-818-16
2000 x 600	318-620-16
2000 x 800	318-820-16
2200 x 600	318-622-16
2200 x 800	318-822-16

23 Split door, perforated



- perforation (83 %)
- with turning lever lock for profile half cylinder, L=40 mm (with push button opening)

Material:

sheet metal, perforated insert

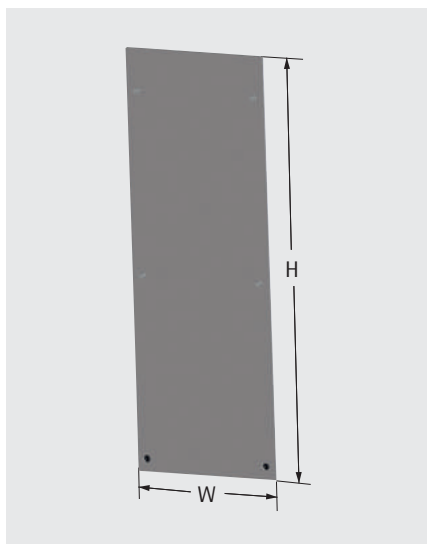
Finish:

RAL 7035 light grey

Dimensions (H x W) mm	Order no.
2000 x 800	318-820-25
2200 x 800	318-822-25



24 Sash door



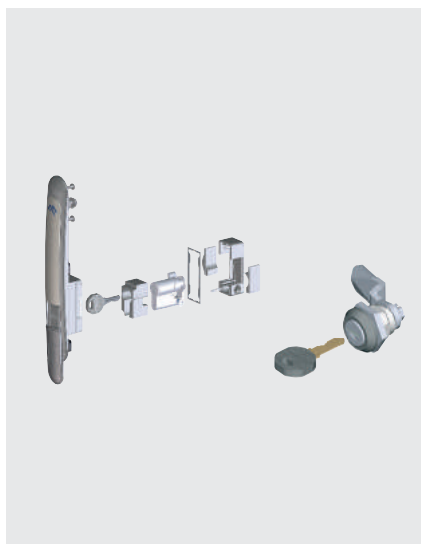
- with 2 or 4 sash fasteners and "double bit key 5 mm" mechanism

Material:
sheet metal

Finish:
RAL 7035 light grey

Dimensions (H x W) mm	Order no.
1200 x 600	318-612-03
1200 x 800	318-812-03
1200 x 1000	318-012-03
1600 x 600	318-616-03
1600 x 800	318-816-03
1800 x 600	318-618-03
1800 x 800	318-818-03
2000 x 600	318-620-03
2000 x 800	318-820-03
2000 x 1000	318-020-03
2000 x 1200	318-020-48
2200 x 600	318-622-03
2200 x 800	318-822-03
2200 x 1000	318-022-03
2200 x 1200	318-022-48

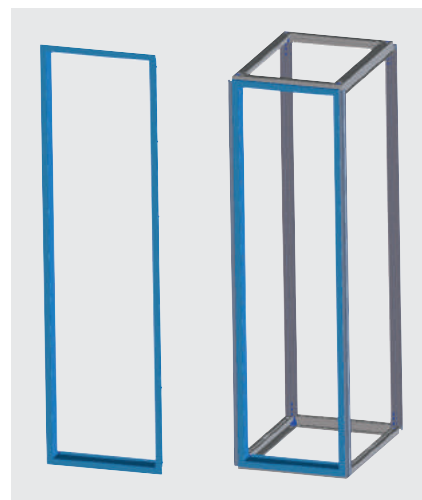
25 Locking systems for doors



- **profile semi-cylinder** L = 40 mm with EK 333 closing for turning lever lock of doors pos 18 - 23
- **adapter** for installing a profile semi-cylinder with L = 40 mm acc. to DIN 18252
- **sash fastener** with EK 333 closing for locking the sash door pos. 24

Description	Order no.
profile semi-cylinder	676-316-00
cylinder sash fastener	676-181
Adapter	676-316-10
Sapre key EK 333	676-200

Front cover set for 600 mm wide cabinets



- for covering the cabinet frame up to the 19 "level"

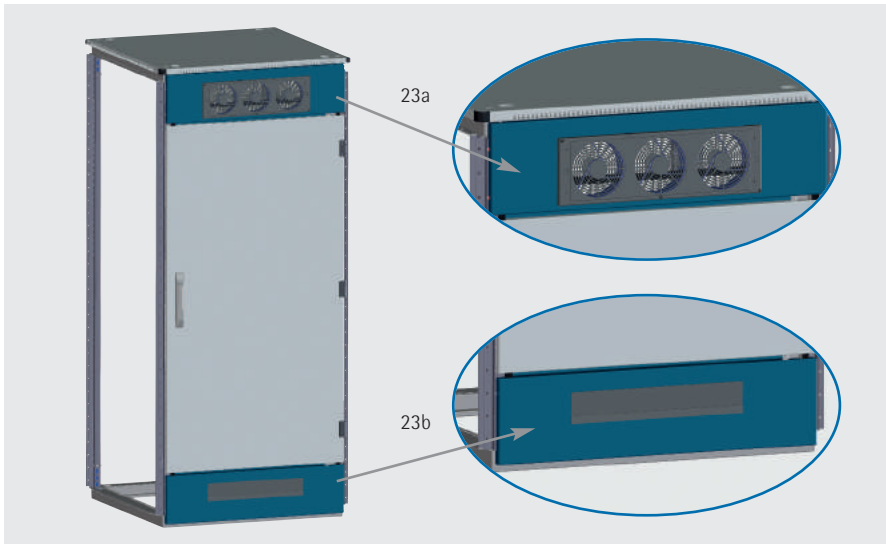
Finish:
RAL 7035 light grey

The front cover set can only be mounted **without** the use of a front door!

Dimensions (H x W) mm	Order no.
1000 x 600	318-610-22
1200 x 600	318-612-22
1600 x 600	318-616-22
1800 x 600	318-618-22
2000 x 600	318-620-22
2200 x 600	318-622-22



26 a/b Universal modules



- can be used with shortened doors [18] - [23] or sash doors [24]
- modules can be positioned freely above and/or below the doors shortened by 200 mm
- the fan installation module [26 a] is suitable for use with the basic fan module [11]

Ausführung	Description	W / D mm	Order no.
26a	Fan installation module	600	318-700-00
26a	Fan installation module	800	318-800-10
26b	Cable entry module	600	318-600-02
26b	Cable entry module	800	318-800-02

27 Cabinet connection set IP 20



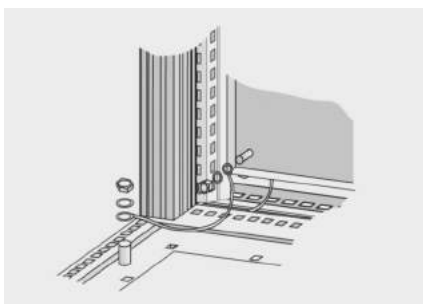
- for connecting as many cabinets as required next to or behind each other
- the design profile of the cabinet remains unchanged

Delivery:

connecting plates, clip-on seals; assembly material included

Order no.
318-105-10

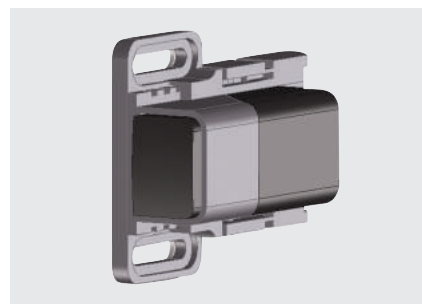
28 Earthing set TiRAX



- for earthing according to VDE standards
- for conductive connection of the cabinet's components (cable cross section 2,5 mm²)

Order no.
318-150-00

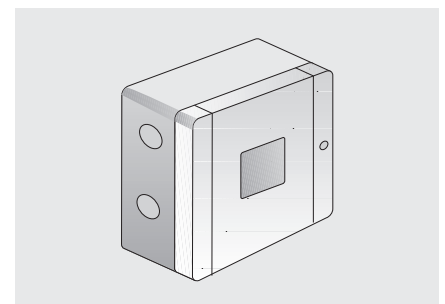
Door contact switch



- for switching IEC connector etc. on and off
- mounting material included

Order no.
640-071-00

Terminal box

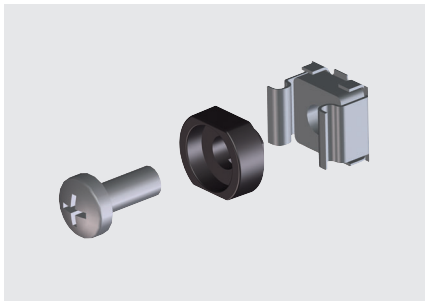


- for use as a cable distribution socket
- simple and quick installation

Order no.
640-059



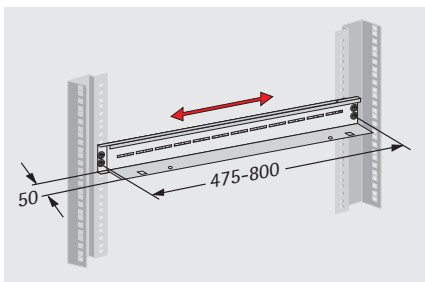
Screw set M 5 / M 6 / Torx (50x)



- necessary for mounting of 19" components into racks or enclosures
- consisting of:
 - 50 lens head screws M 5 x 12 / M 6 x 16
 - 50 cage nuts M 5 - 8 / M 6 - 8
 - 50 rosettes for screws M 5 / M 6, with standards flattened

Description	Order no.
M 5	630-991
M 6	630-994
Torx M 6	350-001-20

Slide rail, variable depth

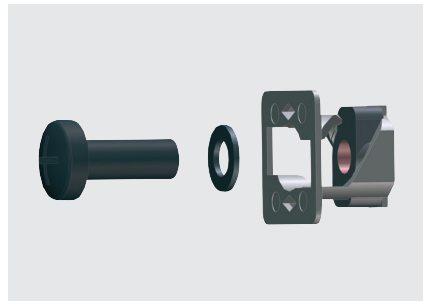


- for 19" plug-in units irrespective of the clearance to the 19" levels
- depth-adjustable
- for use as of a cabinet depth of 800 mm
- Delivery: 1 pair

Material:
sheet metal 1,5 mm, galvanised
Load capacity:
50 kg

Order no.
316-544-20

TiRAX screw set

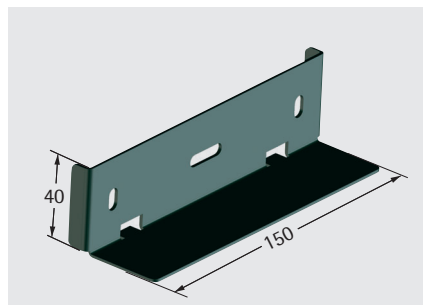


- can be inserted circumferentially in the TiRAX cabinet rack

Delivery:
each with 20x special cage nuts M 6, lens head screw M 6 x 16 and washer

Order no.
630-998

Slide rail, short for 19" vertical mountings and pivot frames



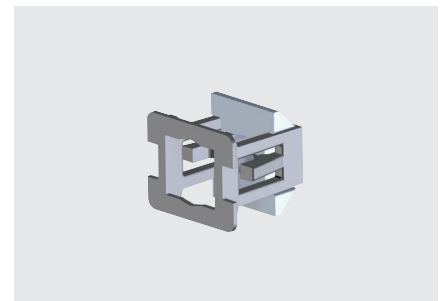
- with only **one** 19" level or pivot frame
- delivery: 1 pair

Material:
sheet metal, 2 mm galvanised

Load capacity:
15 kg
Delivery:
includes mounting material

Order no.
318-129

19" plug-in nut M5



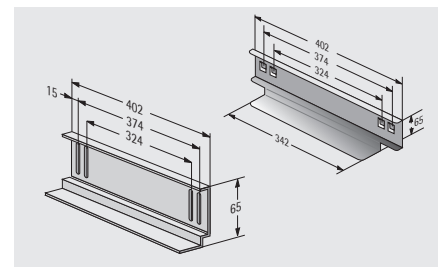
- For mounting in 19" grid rails with a standard breakthrough 9,5 x 9,5 mm (square perforation)

material:
Threaded insert, galvanised steel
Plastic housing:
PA (UL-certificate)

Finish: plastic (black)
thread use: galvanised

Description	Order no
set 4-fold	631-555-04
set 50-fold	631-555-50

Slide rail, screwable / hook-in



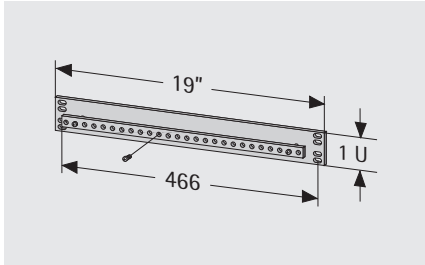
- **screwed/hooked** in onto 19" vertical mountings
- to support heavy 19" plug-in units
- two 19" levels are required for mounting
- Delivery: 1 pair

Material:
sheet metal, galvanised
Load capacity:
50 kg

Description	Order no.
screwable	312-544
hook-in	316-544-00



29 19" Potential equalisation bar
1 U

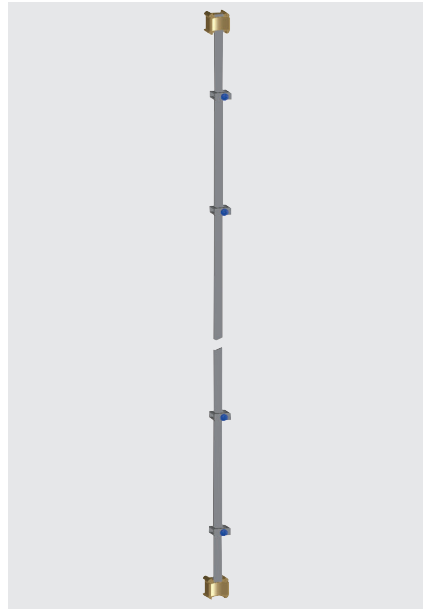


- for 19" or cabinet rack installation
- connection options: 27 × M 5
- rail cross-section: 50 mm²

Material:

sheet metal, copper

29 Potential equalisation bar 1 U



- 30 mm² inkl. 10 pull bows
- mounting material included

Order no.
640-028-00

L mm	Order no.
2000	640-028-08
1800	640-028-10

LED cabinet lamp



- cost-optimised LED technology with a power consumption of 5 W (light intensity equivalent to a 75 W light bulb)
- internal power supply unit with wide range voltage 100 - 230 V / AC
- long-life and no maintenance (service life at 20 °C = 60,000 h)
- available with switch or motion detector
- magnetic attachment for individual mounting in the cabinet
- pressure clamp connection

Connection sockets and connections must be ordered separately!

Description	Order no.
LED cabinet light with switch	640-143-05
LED cabinet light with motion detector	640-143-06
Connection with Euro plug, L = 2.5 m	640-143-08

Noise absorption foam



- absorbs up to 10 dB(A) of sound in enclosures (e.g. fan noise)
- self-adhesive on one side
- thermal conductivity: 0.033 W/mk (acc. to DIN 52612)
- temperature range: -40 °C to +100 °C

Material:

grey PUR ester foam (10 mm), with indentations, partially compressed (air permeable)

Delivery: unmounted

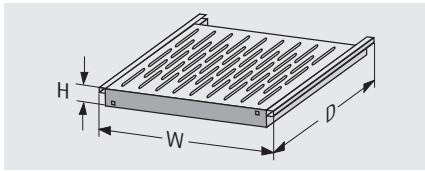
Delivery: 1 m²

If required, we will be happy to affix the noise absorption foam for you before delivering your cabinets or enclosures!

Order no.
671-211



30 Shelf without 19" extension "fixed installation"



- for mounting into cabinet rack without 19" level
- extraction length: 500 mm
- max. cabinet depth: 800 mm

Material:

sheet metal

Finish:

RAL 7035 light grey

Load capacity:

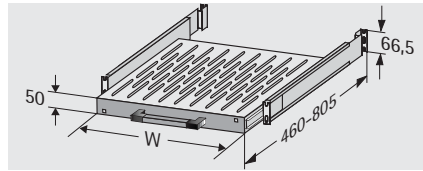
80 kg (distributed load)

Dimensions (H x W x D):

1,5 U (66,5 mm) x 465 x 410 mm

Cabinet width	Order no.
600 mm	318-141-08
800 mm	318-141-05

30 Shelf without 19" extension "extractable"



- for mounting into cabinet rack without 19" level
- simple one-person assembly
- extraction length: 500 mm
- max. cabinet depth: 800 mm

Material:

sheet metal

Finish:

RAL 7035 light grey

Load capacity:

60 kg (distributed load)

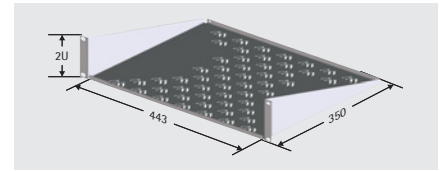
Dimensions (H x W x D):

1,5 U (66,5 mm) x 465 x 410 mm

1,5 U (66,5 mm) x 665 x 410 mm

Cabinet width	Order no.
600 mm	318-141-04
800 mm	318-141-06

30 19" shelf 2U "fixed"



- simple assembly on a 19" grid (only one 19" level required)
- ventilated
- Footprint: 443 x 350 mm

Material:

sheet metal

Finish:

RAL 7035 light grey

Load capacity:

15 kg (distributed load)

Dimensions (H x W x D):

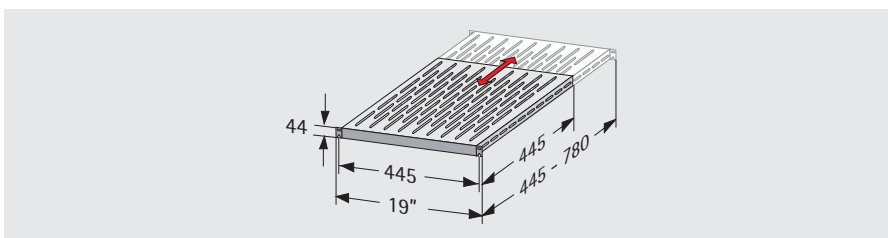
2 U (88 mm) x 19" (482,6 mm) x 350 mm

Floor space (w x d):

443 x 350 mm

Order no.
315-810-20

30 19" shelf 1 U "VARiplain" fixed installation with 19" grid



- depth variable due to VARiplain technology
- telescopic: 445 - 780 mm (see fig.)
- simple one-person assembly through open long hole in the 19" front (hook-in)
- mounting material included

Material:

sheet metal 2 mm

Finish:

RAL 7035 light grey

Load capacity:

150 kg (distributed load)

Dimensions (H x W x D):

1 U (44 mm) x 19" (482,6 mm) x

445 - 780 mm

Floor space (w x d):

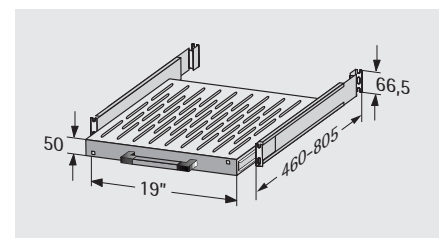
445 x (445 - 780) mm

Delivery:

mounting material included

Order no.
316-036-99

30 19"-shelf 1,5 U "extractable"



- variable-depth installation
- extraction 500 mm
- simple one-person assembly

Material:

sheet metal

Finish:

RAL 7035 light grey

Load capacity:

60 kg (distributed load)

Dimensions (H x W x D):

1,5 U (66,5 mm) x 19" (482,6 mm) x 465 - 665 mm

Floor space (w x d):

410 x (465 - 665) mm

D mm	Order no.
465	318-141-00
665	318-141-01



Cable duct

- structured, lateral cable routing over the entire cabinet height
- optionally breakable, large breakouts for side and rear cable entry or execution, retrofittable with plastic edge protection frame
- stable front plastic cable clamps each U for defined cabling in front of the 19" level
- lockable on the front side by pivoting hinged covers
- additional cable fixing in the rear maneuvering area by pluggable cascading
- no impairment of the air flow in the cabinet
- increased clarity
- symmetrical construction (can be mounted in the cabinet on the right and left side)

Material:

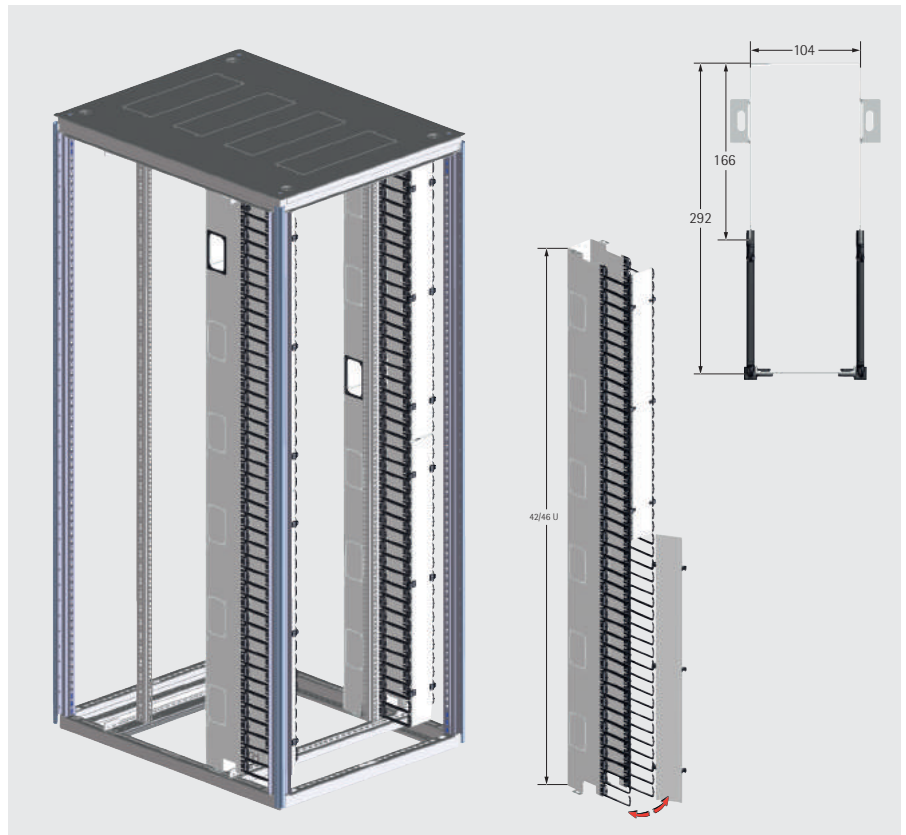
duct: sheet metal
 hinged cover: aluminum
 cable clamps and hinges:
 plastic UL94 V-0, black

Finish:

sheet panel: RAL 7035 light grey or
 RAL 9005 deep black

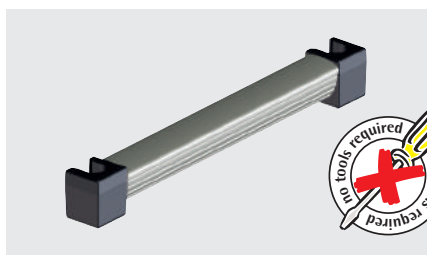
Delivery:

duct with cable clamps and drop shutter,
 mounting material included

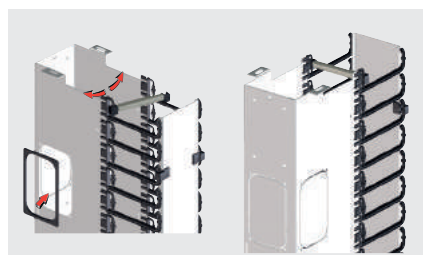


U	H mm	Colour	Order no.
42	2000	RAL 7035 light grey	318-123-50
42	2000	RAL 9005 jet black	318-123-55
46	2200	RAL 7035 light grey	318-123-60
46	2200	RAL 9005 jet black	318-123-65

Cascading for cable duct



- for partially locking the excess-length section of the cable duct
- can be quickly and easily installed on each of the cable clamps, no tools required
- pluggable, rotatable
- set = 5 pieces



Material:

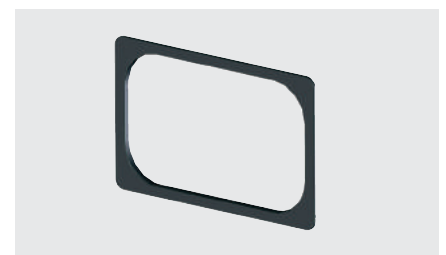
Aluminum profile,
 hinges: plastic UL94 V-0, black

Delivery:

5 pieces Al profile incl. hinge, right and left

Order no.
318-123-90

Edge protection frame "apra"



- can be clipped into the pre-perforated cut-outs (lateral or rear of cable duct)
- set = 10 pieces

Material:

plastic UL94 V-0, black

Order no.
583-001-10



Partition panel kit

- to partition the lateral movable space for 800 mm wide cabinet between 19" level and side panel
- 3 × 1 U field per panel
- with cable clamps [a] (max. 4 pieces per panel) extendable (see page 50)

Material:
sheet metal

H mm	Finish	Order no.
2000	RAL 7035	318-121-84
2000	RAL 9005	318-121-85
2200	RAL 7035	318-121-87
2200	RAL 9005	318-121-88

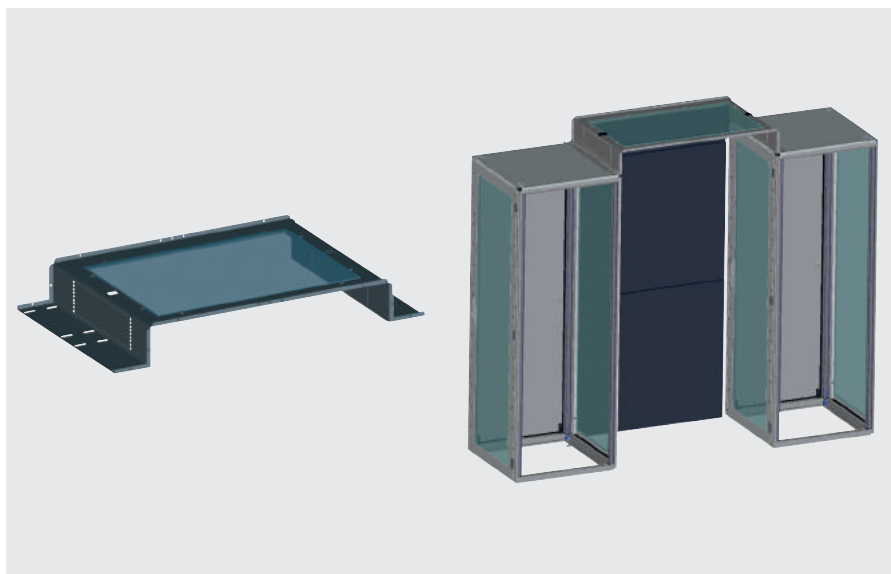


Corridor cover for cooling corridor

- for easy mounting on the cabinet system
- with 19" 3 U mounting section for power distributors, light systems etc.
- with toughened safety glass
- for aisle width 1.2 m

Material:
sheet metal, toughened safety glass

W mm	Finish	Order no.
800	RAL 7035	318-124-32
600	RAL 7035	318-124-66
600	RAL 9005	318-124-67
800	RAL 9005	318-124-75

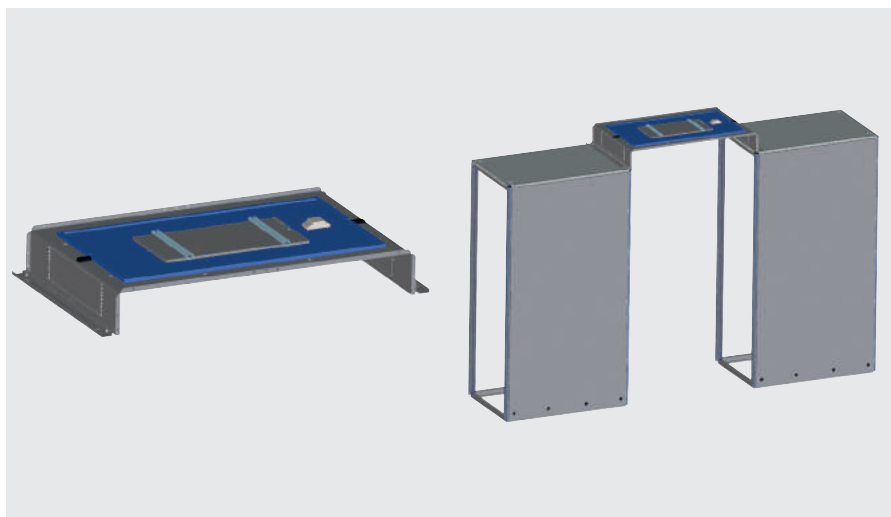


Corridor cover with LED panel

- easy installation on the TiRAX cabinet systems
- for optimum illumination of the cold / warm aisle
- LED panel with 24 W, 6000 K, 2400 lm
- incl. 19" panel 3 U for mounting power distributions etc.
- for aisle width 1.2 m

Material:
Corridor cover: steel sheet
LED-Panel: aluminium, acryl

W mm	Finish	Order no.
800	RAL 7035	318-125-60
800	RAL 9005	318-125-65



Technical changes and errors reserved. Pictures may be different from the product.



Swing door system

- to finish a TiRAX cold / warm aisle housing
- Opening possibility in both directions
- 180 ° opening angle for optimum access
- Ensuring pressure equalization in the cold aisle (for example, when the extinguishing system is triggered)
- High energy efficiency, as the cold aisle is always closed automatically
- Protection of persons in dangerous situations (escape door)
- for aisle width 1200 mm and cabinet height H = 2000 mm (42 U)

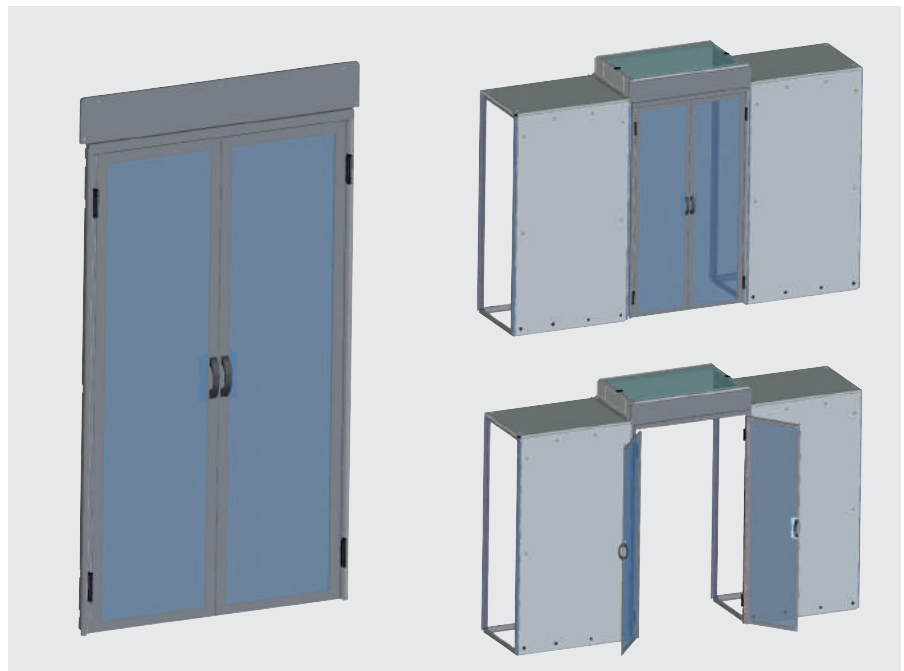
Material:

Mounting frame: sheet metal

Door profiles: aluminum, tempered glass

Delivery:

1 door pair, incl. mounting frame



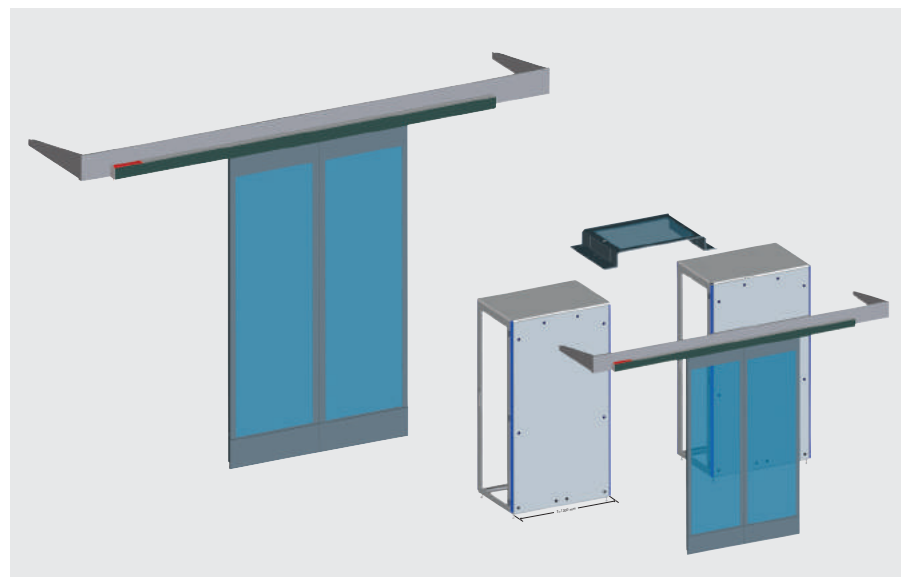
Finish	Order no.
RAL 7035 / aluminium look	318-004-70
RAL 9005 / aluminium look	318-004-50

Sliding door system

- for cabinet depth D = 1200 mm
- simple and quick installation
- for aislewidth 1.2 m
- height adjustment towards floor is possible

Material:

sheet metal, toughened safety glass



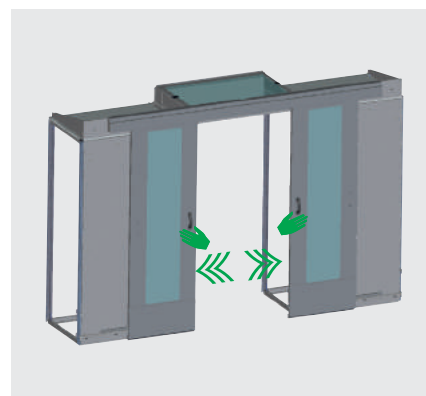
H mm	Description	Finish	Order no.
2000	manual	RAL 7037 dusty grey	318-124-70
		RAL 9005 jet black	318-124-80
	electric	RAL 7037 dusty grey	318-125-00
		RAL 9005 jet black	318-125-05
2200	manual	RAL 7037 dusty grey	318-124-55
		RAL 9005 jet black	318-124-65
	electric	RAL 7037 dusty grey	318-125-10
		RAL 9005 jet black	318-125-15



Extension set synchronous run for sliding door system

- for synchronous opening or closing of both door leaves
- to extend the manual sliding door system

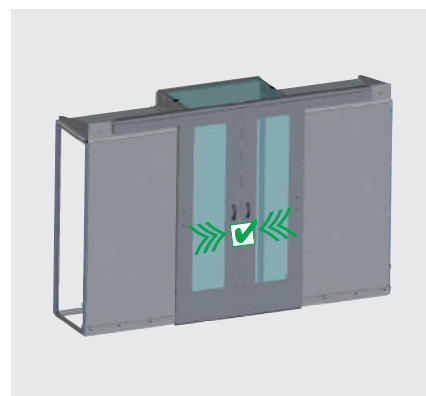
Order no.
583-003-36



Extension set synchronous operation with linear feedback

- synchronous opening of both door leaves with independent closing
- mechanical return system
- high energy efficiency, as the cold aisle is always closed automatically
- to extend the manual sliding door system

Order no.
583-003-62



Corridor Backboard Set

- Set = 2 pieces rear panels, incl. mounting brackets and completion of the corridor cover
- horizontally split mounting
- to complete a cold / warm aisle housing for aisle width 1200 mm

Material:

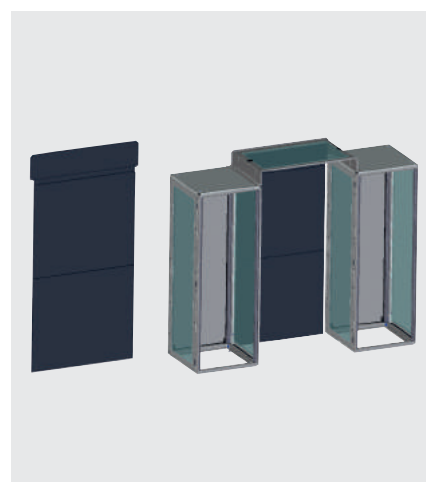
sheet steel

Finish:

RAL 7035 light grey

RAL 9005 jet black

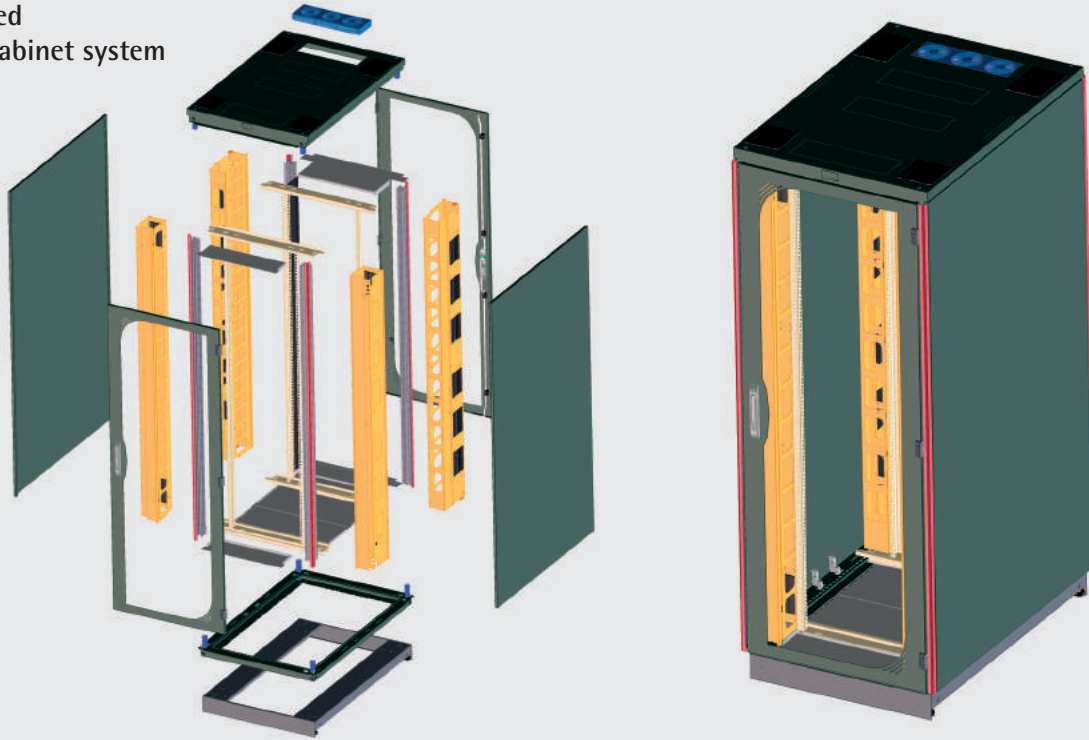
Finish	H = 2000	H = 2200
RAL 7035	318-125-80	318-125-70
RAL 9005	318-125-86	318-125-66





From conceptual planning to installation

Exploded
Tirax-cabinet system



Project:
Datacenter





in the data center – all from one source!





19" cabinet system TiRAX

page 11



19" cabinet system NETcell

page 65



Open 19" racks

page 83



Floor-standing / wall-mounted
19" enclosure system VARi IT

page 97



Wall-mounting systems

page 111



Air conditioning technology

page 129



Power distribution

page 137



Cabinet monitoring

page 155



Cable management

page 163



Distribution technology

page 169



Accessories

page 177



Read more about the apra-group's products at www.apra.de

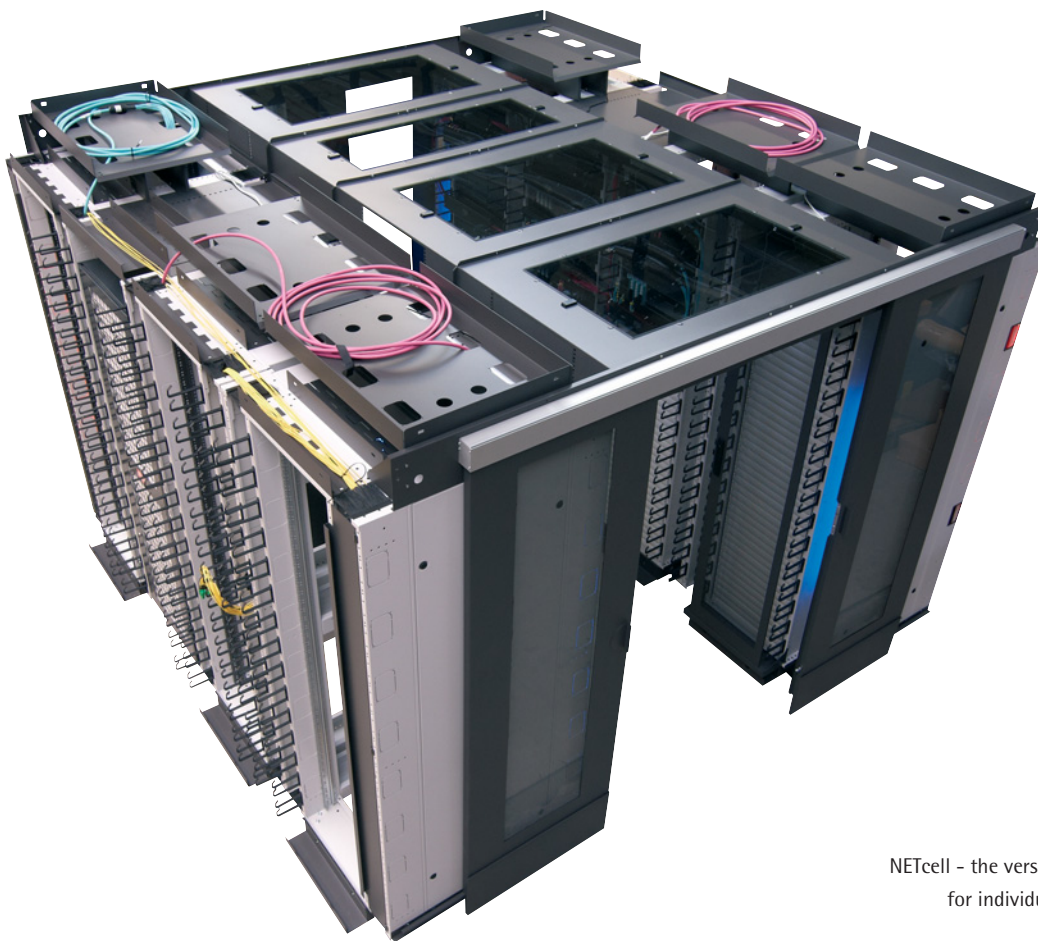


NETcell

OPTIMIZED FOR USE AS A DATA CENTER

NETcell is the tailor-made suit among apra's 19" cabinet systems. Individually configurable and easily expandable, it can be adapted to almost any requirement. For example, the combination of a basic and a bayed system enables an especially flexible, space-saving design. The system is particularly con-

vincing due to its unique, large-volume cable management system. Despite the design as an open rack, the NETcell system can be completely bulkheaded and enclosed in rows of cabinets, so that a highly efficient air conditioning is implemented.



NETcell - the versatile rack system
for individual requirements

NETcell Highlights

completely demountable

individually configurable

Basic system with integrated cable ducts over the entire cabinet height

Overlength trough (can be used as route system)

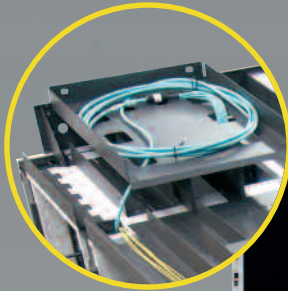
Modular cable trays for the separate routing of data and power cables

Cable ducts for large-volume guidance of Data and power cables

Energy efficient Air conditioning through the use of enclosure components

due to stable frame construction also suitable for high loads (1500 kg)

registered



Overlength tray
For on-top cabling



Cable trough for
horizontal guiding of cable material



Radius limiter for
cable management inside
the vertical cable ducts



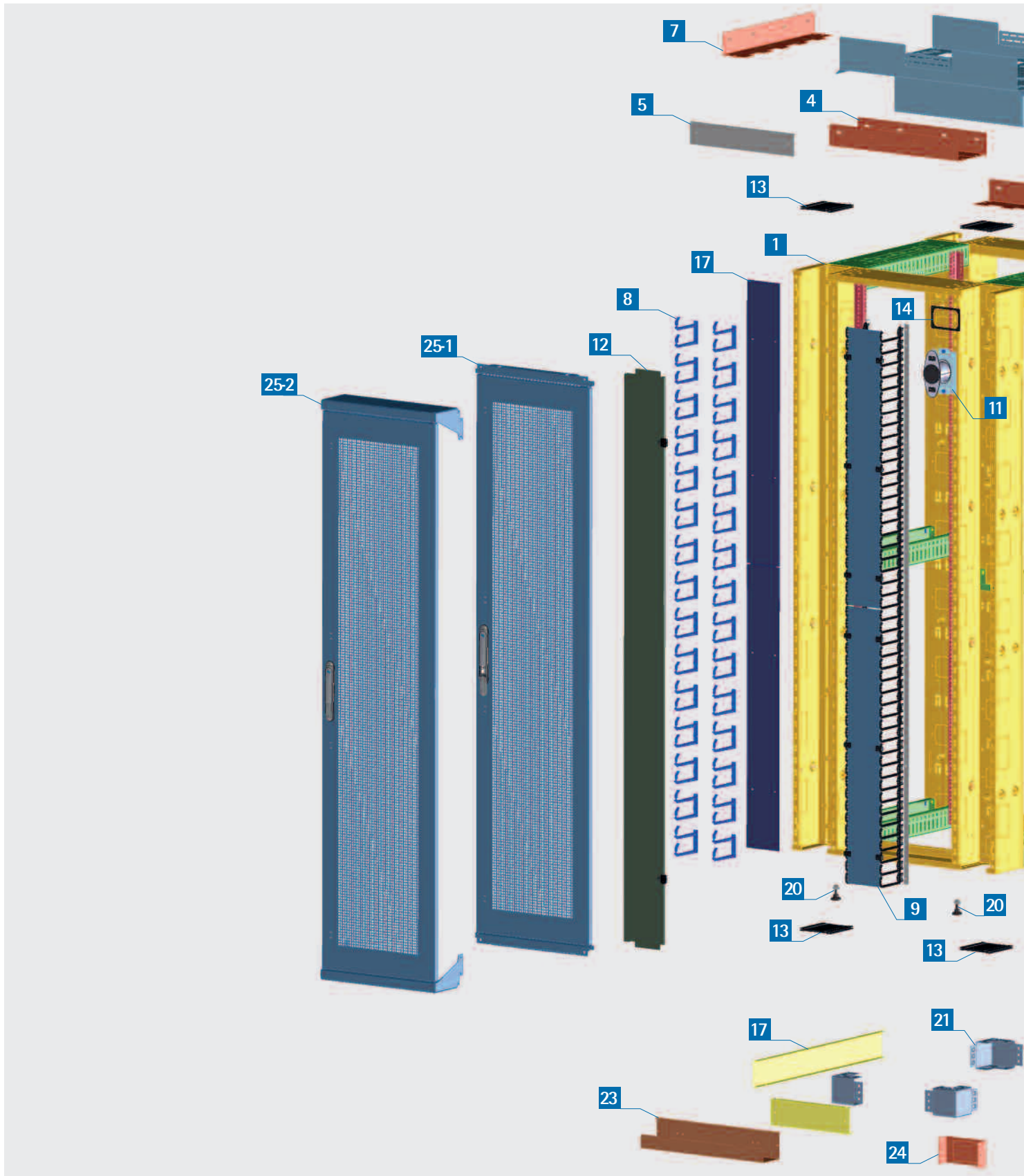
Flexible cable routing
Over cable trays

NETcell

completely dismountable,
flexible cable management,
payload up to 1500 kg,
utility model protected

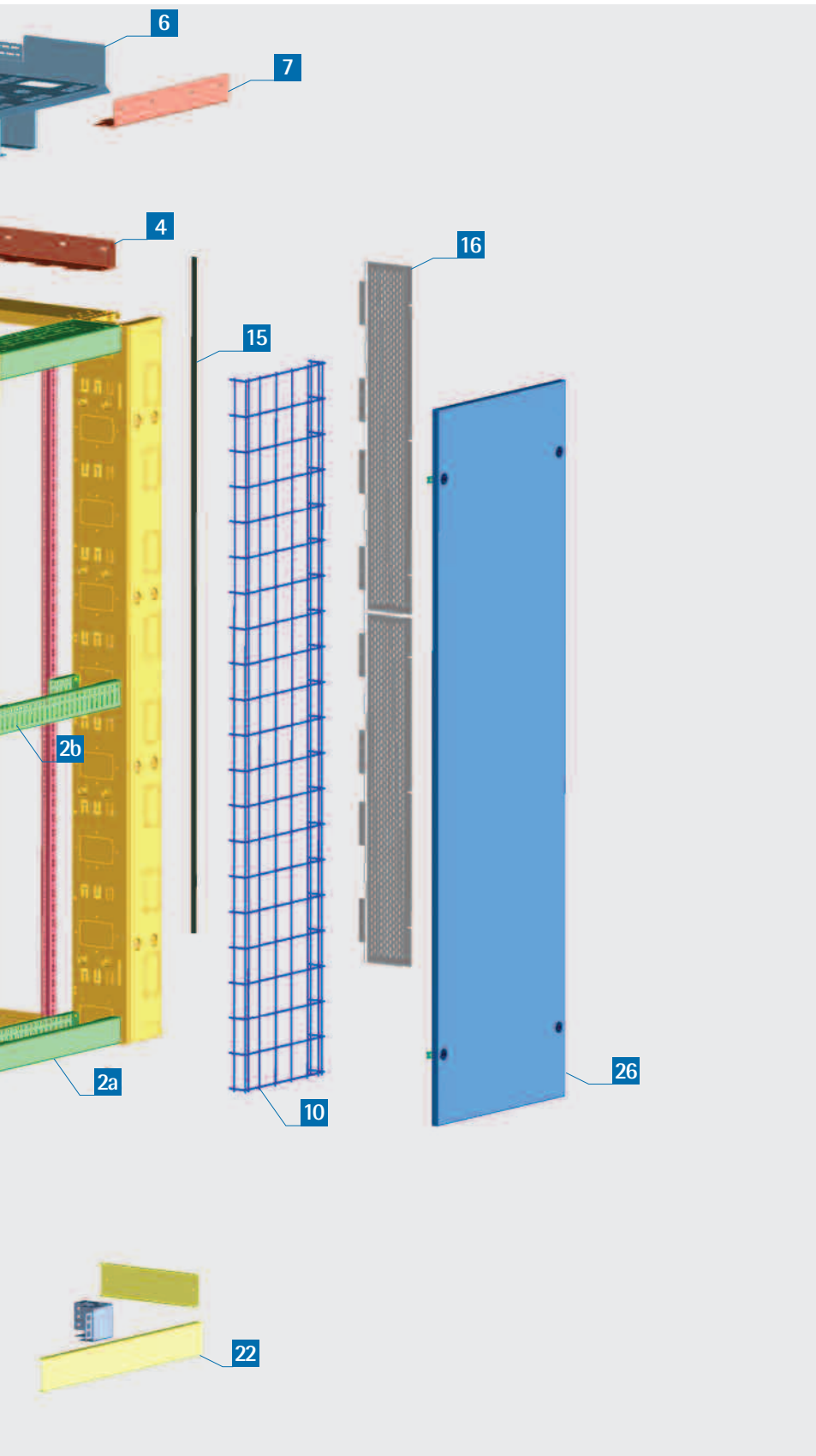


Configure your own cabinet system





Select the required cabinet components step by step:



Item	Description	page
1a	Basic system	70
1b	Connector system (without fig.)	70
2a	Cable tray	71
2b	Cable tray for grid gutter	71
3	Cable entry rail	71
4	Cable routing angle bracket	72
5	Connecting cover for cable routing angle bracket	72
6	Cable tray for excess length of cable	72
7	End cover for excess cable tray	72
8	Cable clamp set open	73
9	Cable manager vertical 46 U	73
10	Grid gutter	73
11	Radius limiter	74
12	Hinged panel	74
13	Brush set for cable duct	74
14	Edge protection frame	75
15	Universal guide rail for cable duct	75
16	Mounting plate	75
17	Locking panel for cable duct	76
18	Extending canal set (without fig.)	76
19	Connector set (without fig.)	76
20	Adjusting feet set	77
21	Base corner set	77
22	Base covers	77
23	Cable routing tray	77
24	Socket infill panel	78
25	Door ventilated (83% perforated)	78
26	Side panel	78
27	Locking system for doors and side panels (without fig.)	79
28a	Corridor covering for cooling corridor (without fig.)	79
28b	Corridor Cover with LED panel	79
29	Sliding door system (without fig.)	80
30	Extension set synchronous run for sliding door system	80
31	Extension set synchronous run with linear return (without fig.)	80
32	Swing door system (without fig.)	81
33	Corridor back wall set (without fig.)	81
34	Cable tray (without fig.)	82
35	19" blind panels (without fig.)	82



**1a Basic system "900",
dismountable**

The cabinet system consists of two identical frames with integrated cable ducts, cross bars and a 19" extension level with end covers at the front.

Basic system "900" consists of:

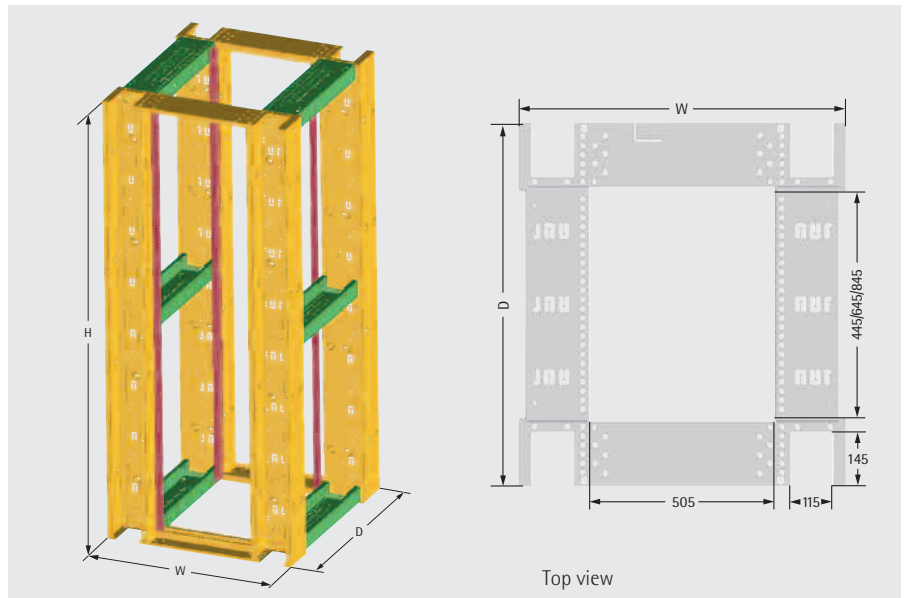
- frame with integrated cable ducts (2 x)
- cross bars (cable tray) (6 x)
- 19" extension (2 x)
- end cover for 19" grid (2 x)

Load capacity:

1500 kg (static)

Delivery:

mounted



Dimensions W x H mm	U	D mm	Finish	Order no.
900 x 2130	46	800	RAL 7035	583-908-12
900 x 2130	46	1000	RAL 7035	583-910-12
900 x 2130	46	1200	RAL 7035	583-912-12
900 x 2130	46	800	RAL 9005	583-908-82
900 x 2130	46	1000	RAL 9005	583-910-82
900 x 2130	46	1200	RAL 9005	583-912-82

**1b Connector system "600",
dismountable**

The connector system consists of two identical frames, crossbars and 19" extension with end covers at the front.

Connector System "600" consists of:

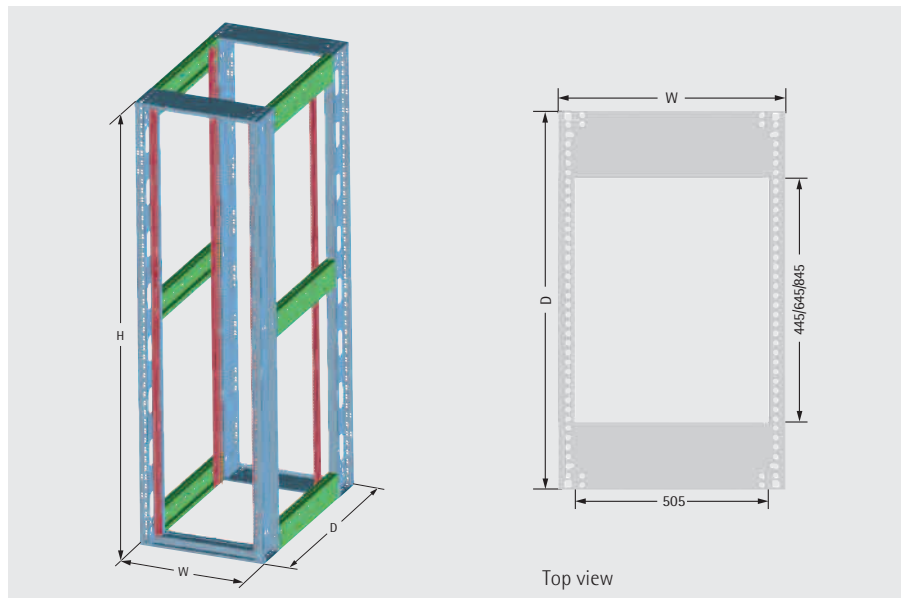
- frame (2 x)
- crossbars (6 x)
- 19" extension (2 x)
- end cover for 19" grid (2 x)

Load capacity:

1500 kg (static)

Delivery:

mounted



Dimensions W x H mm	U	D mm	Finish	Order no.
600 x 2130	46	800	RAL 7035	583-608-12
600 x 2130	46	1000	RAL 7035	583-610-12
600 x 2130	46	1200	RAL 7035	583-612-12
600 x 2130	46	800	RAL 9005	583-608-82
600 x 2130	46	1000	RAL 9005	583-610-82
600 x 2130	46	1200	RAL 9005	583-612-82

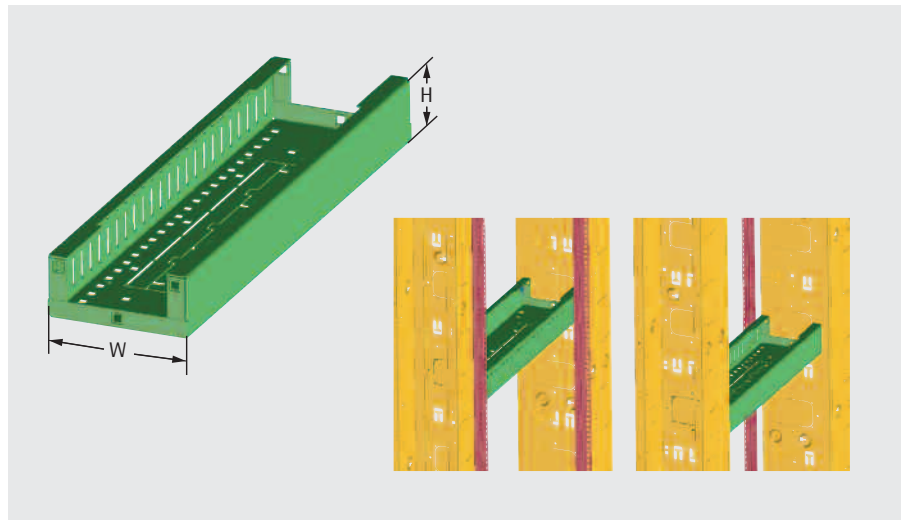


2a Cable tray

- for cable routing
- for mounting between front and rear frame of the basic system
- H x W: 80 x 175 mm

Material:
sheet metal

D mm	Finish	Order no.
800	RAL 7035	583-000-01
800	RAL 9005	583-005-01
1000	RAL 7035	583-000-69
1000	RAL 9005	583-005-69
1200	RAL 7035	583-000-02
1200	RAL 9005	583-005-02

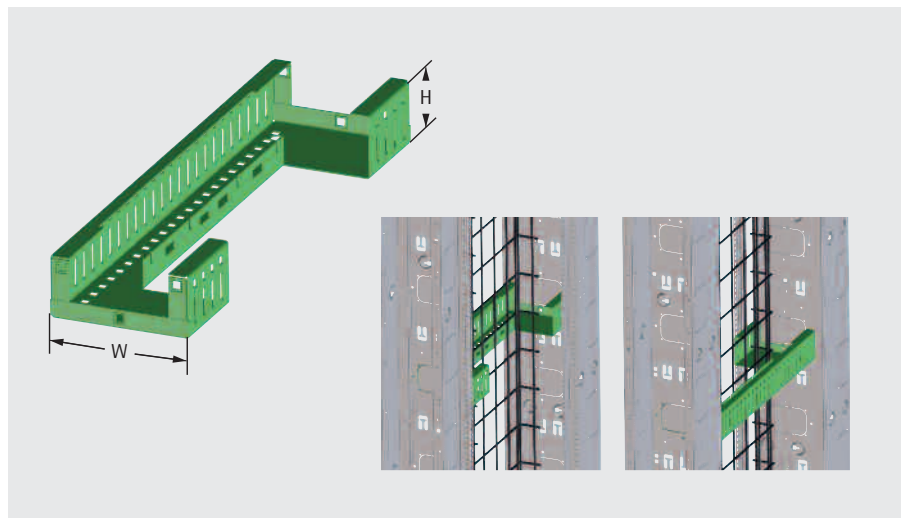


2b Cable tray for grid gutter

- for mounting in the middle area between the front and rear frame of the base system
- simple attachment of the grid gutter (Pos 10)
- allows fast and flexible cabling over the entire height of the system
- H x W: 80 x 175 mm

Material:
sheet metal

D mm	Finish	Order no.
800	RAL 7035	583-002-84
800	RAL 9005	583-005-99
1000	RAL 7035	583-002-81
1000	RAL 9005	583-005-97
1200	RAL 7035	583-002-83
1200	RAL 9005	583-005-93

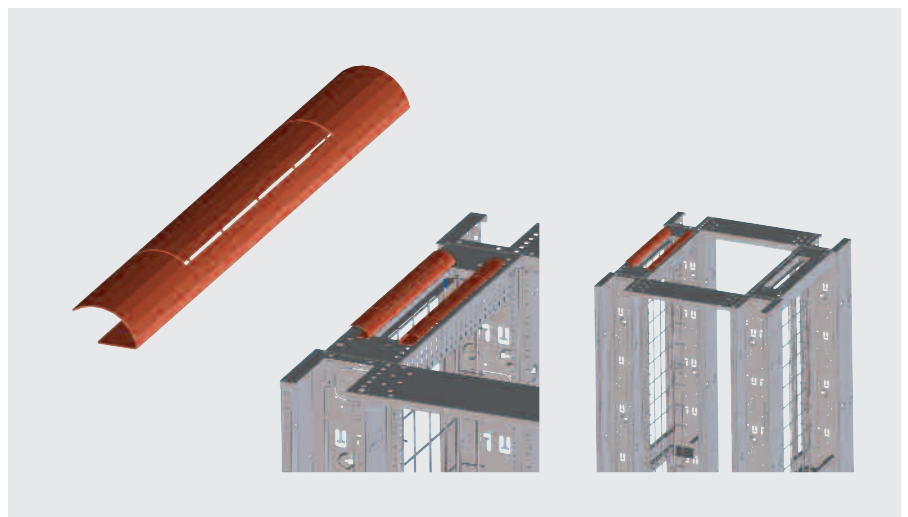


3 Cable entry rail

- for defined cable entry (bending radius) from above into the basic system
- deflection radius $r = 27$ mm

Material:
sheet metal

Finish	Order no.
RAL 7035	583-002-76
RAL 9005	583-002-77





4 Cable routing angle bracket

- for basic and connector system
- to set up a cable duct system on the cabinet system

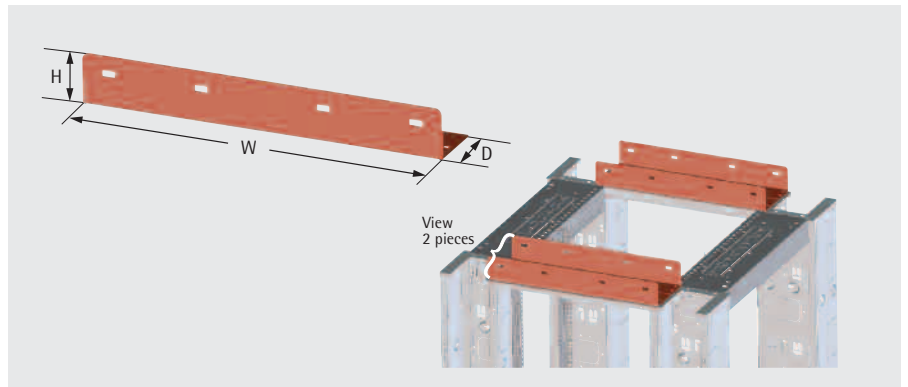
Material:

sheet metal

Dimensions (H x W x D):

80 x 570 x 100 mm

Finish	Order no.
RAL 7035	583-000-73
RAL 9005	583-005-73



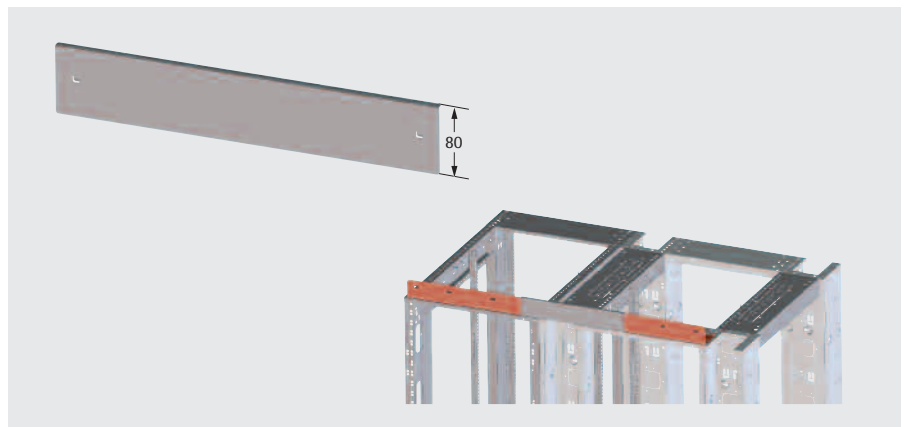
5 Connecting cover for cable routing angle bracket

- for basic and connector system
- for installation in cabinet rows
- conceals space between two cable routing angle brackets on the front end of the systems

Material:

sheet metal

Finish	Order no.
RAL 7035	583-000-74
RAL 9005	583-005-74



6 Cable tray for excess length of cable

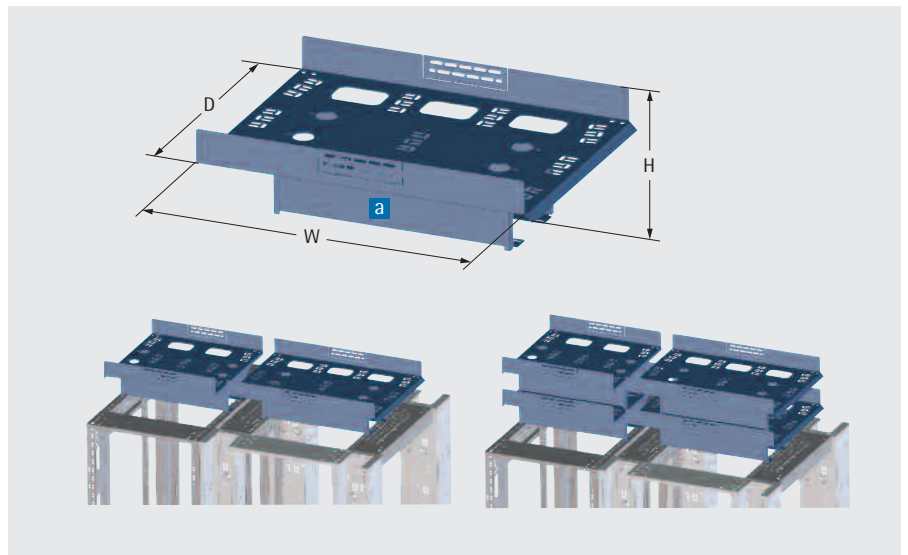
- for basic and connector system
- for storage of excess cable length or as trunking system for row install of cabinets
- suitable for accommodation of the cable tray [34] [a]

Material: sheet metal

Dimensions (H x W x D):

250 x 600 / 900 x 580 mm

W mm	Finish	Order no.
900	RAL 7035	583-000-72
600	RAL 7035	583-000-94
900	RAL 9005	583-005-72
600	RAL 9005	583-005-94



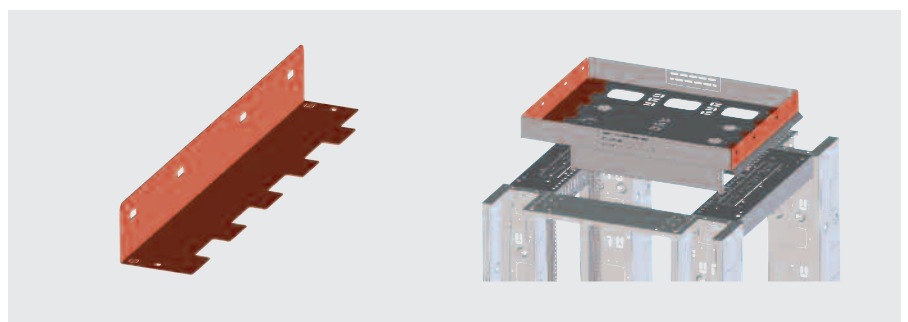
7 End cover for excess cable tray

- for covering the excess cable tray on the front ends

Material:

sheet metal

Finish	Order no.
RAL 7035	583-000-73
RAL 9005	583-005-73



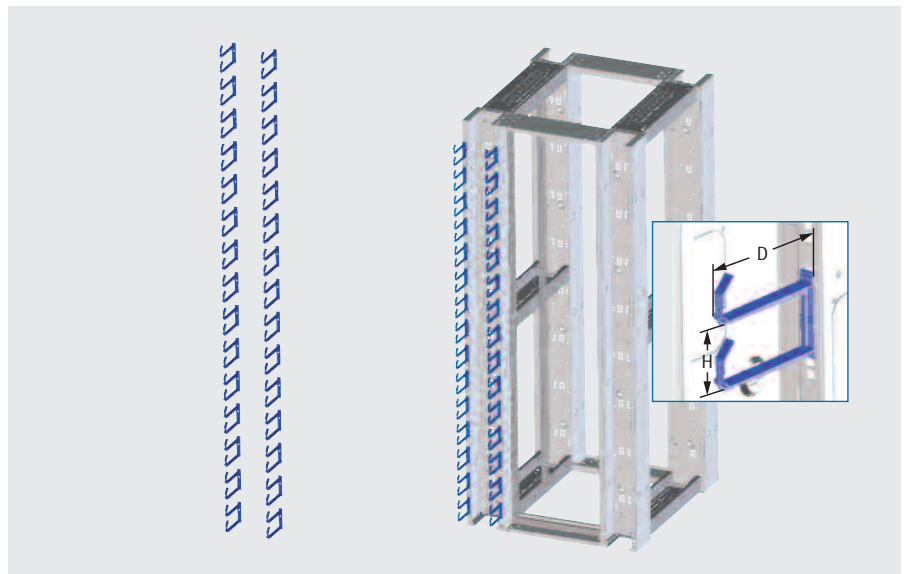


8 Cable clamp set

- for basic system
- to be clipped onto the front of the cable duct
- H x D: 55 x 115 mm
- set = 30 pieces (1 cable duct)

Material:
plastic, black

Order no.
583-001-12

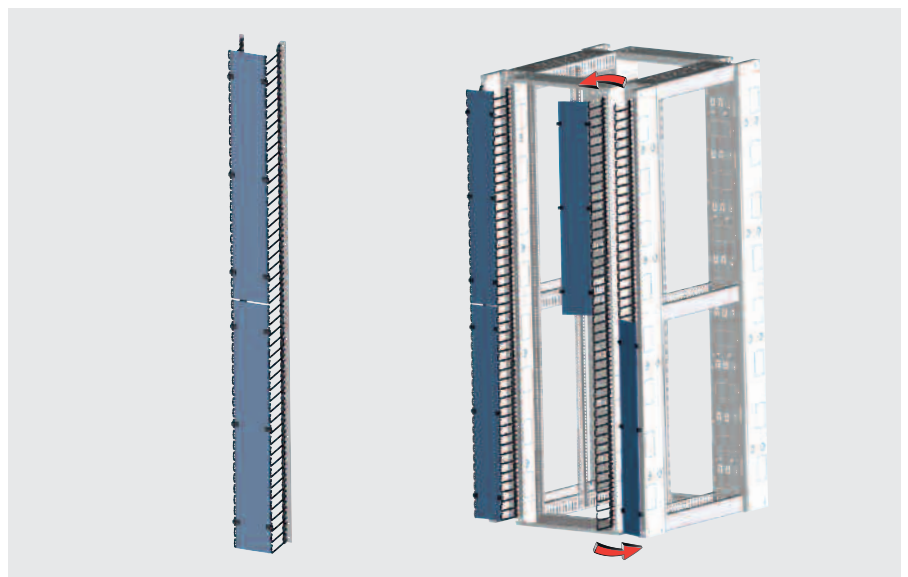


9 Cable manager vertical 46 U

- for basic system
- with adapter rails for front mounting on cable duct
- temple height H = 44 mm (1 U), temple depth T = 138 mm
- Set contains 92 pieces of cable clamps, incl. adapter rails and cable duct flaps (corresponds to 1 cable duct)

Material:
adapter rails: steel sheet, cable ties: plastic (black)

Finish	Order no.
RAL 7035	583-004-47
RAL 9005	583-005-47



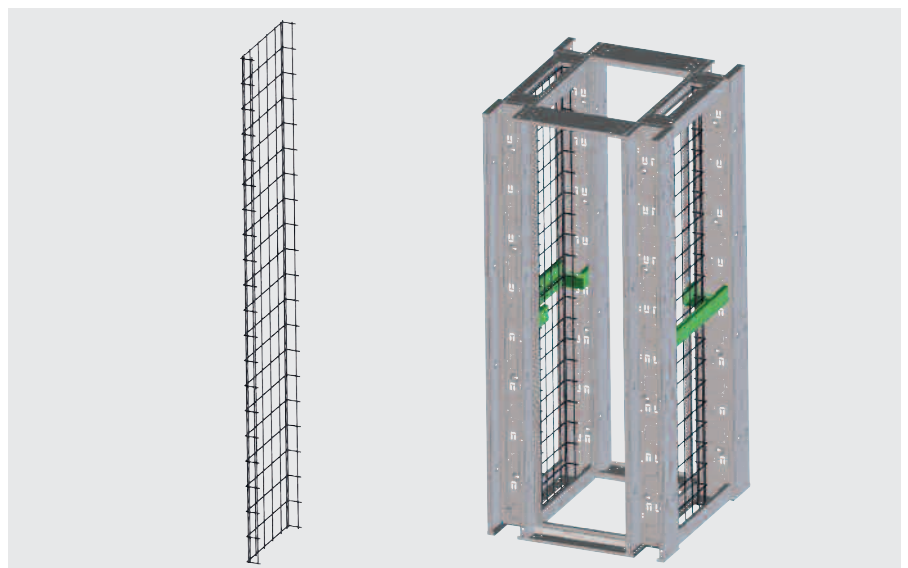
10 Grid gutter

- serves the structured and flexible cable routing in the rack
- Mounting laterally in the base system over the entire cabinet height
- H = 2100 mm

Material:
metal, galvanised

Dimensions (H x W x D):
2100 x (200 / 300 / 400) x 60 mm

Description	Order no.
W = 200 mm	640-037-61
W = 300 mm	640-037-63
W = 400 mm	640-037-64
mounting set	640-037-80





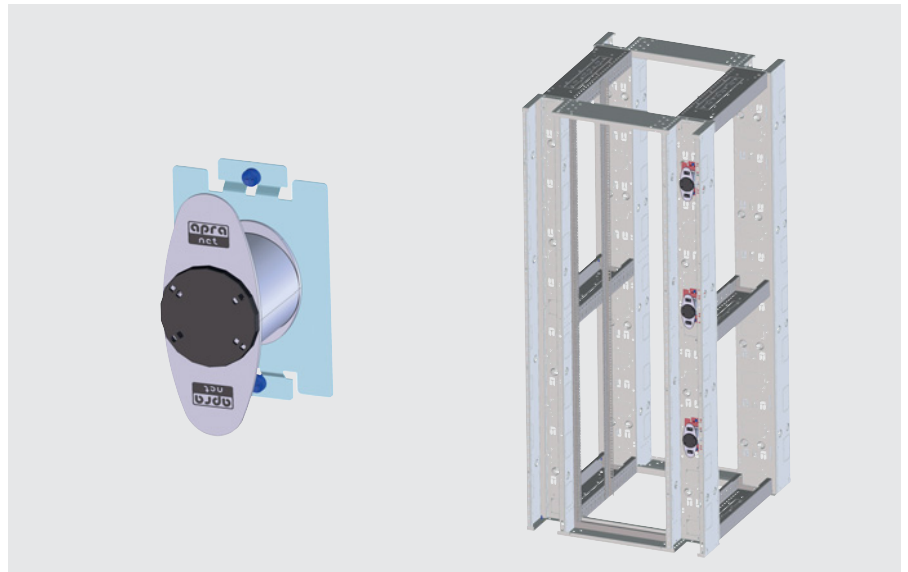
11 Radius limiter

- for the structured and protected routing of fiber optic and copper cables in the cable ducts
- deflection radius $r = 35\text{mm}$

Material:

mounting plate: steel sheet, radius limiter: plastic (black)

Order no.
583-002-66



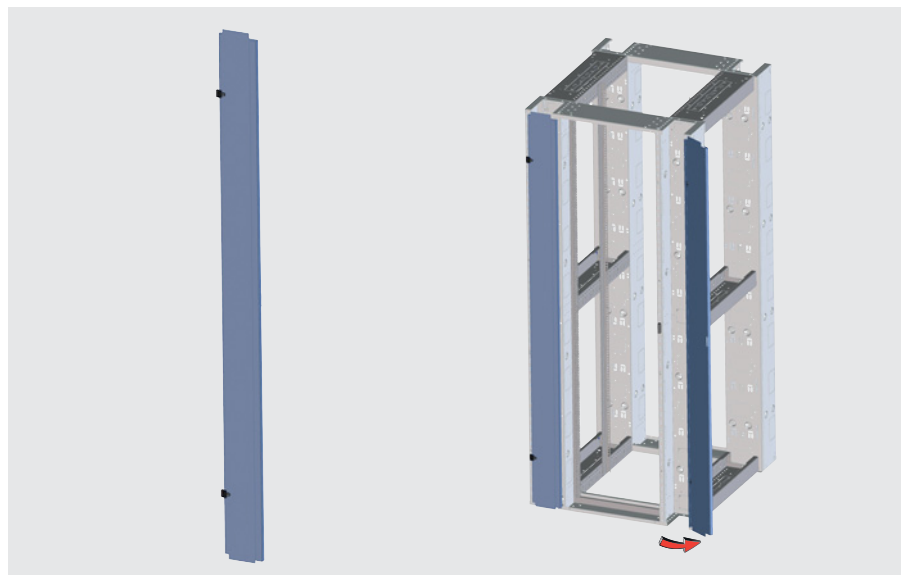
12 Hinged panel

- for basic system, $W = 900\text{ mm}$
- for covering the cable duct
- with hinges for quick opening and closing (180°)

Material:

sheet metal

Finish	Order no.
RAL 7035	583-000-83
RAL 9005	583-005-83



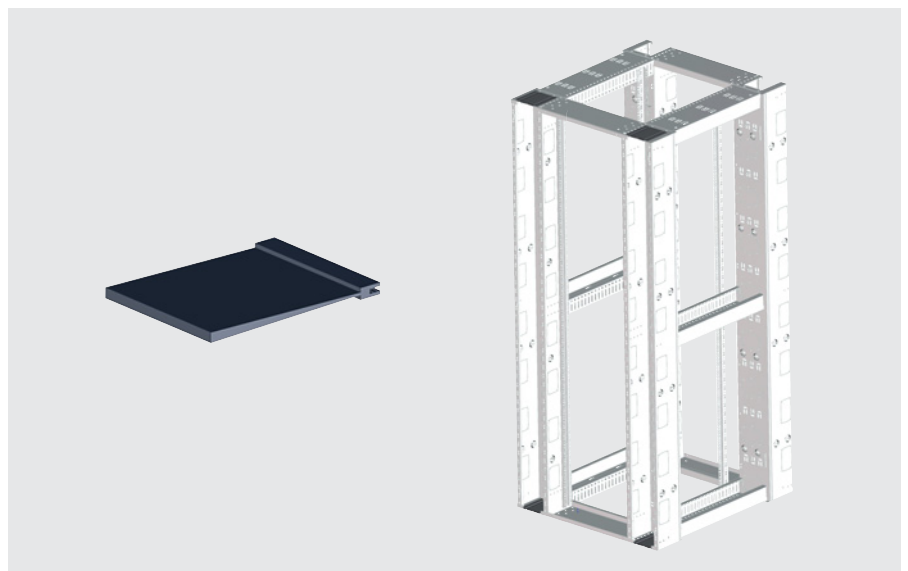
13 Brush set for cable duct

- for basic system
- to be used on the top and bottom on the cable duct
- set = 4 pieces

Material:

plastic, black

Order no.
583-001-15





14 Edge protection frame

- for basic and connector system
- for circumferential mounting to the frame
- set = 10 pieces

Material:
black plastic, UL94 V-0

Order no.
583-001-10

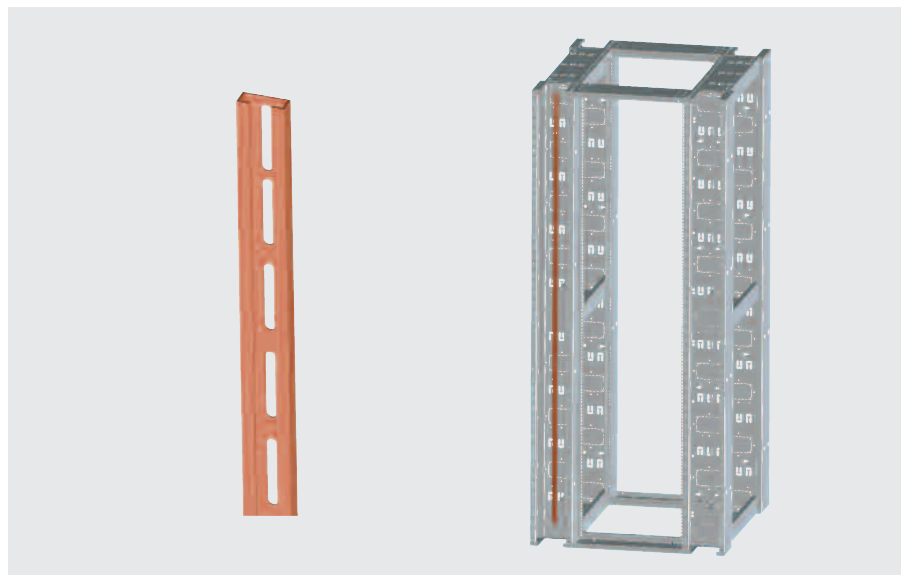


15 Universal guide rail for cable duct

- for basic system
- mounting possible on all sides of the cable duct (max. 2 per side)
- for individual mounting of PDU, cable clamps etc.
- attachment of components with sliding nuts (4 pcs. included in scope of delivery)
- Length: 2 m

Material:
metal, galvanised

Description	Order no.
Universal guide rail	583-001-11
Sliding nuts M5 (set = 10 pieces)	630-015-11

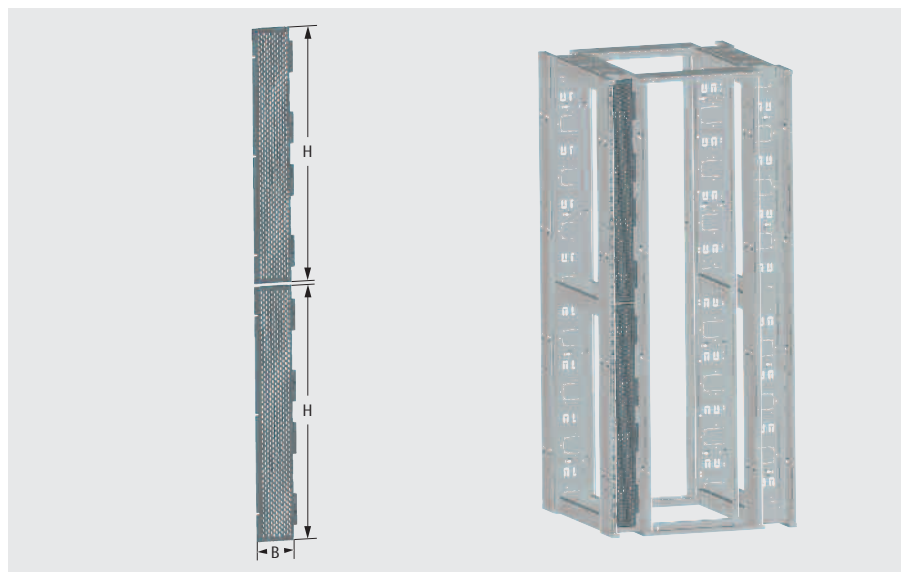


16 Mounting plate

- for basic system
- for the mounting of PDU, radii delimiter, etc.
- mounting in cable duct (front)
- W = 160 mm, H = 880 mm
- up to two mounting plates per cable duct can be mounted

Material:
sheet metal

Finish	Order no.
RAL 7035	583-000-98
RAL 9005	583-005-98



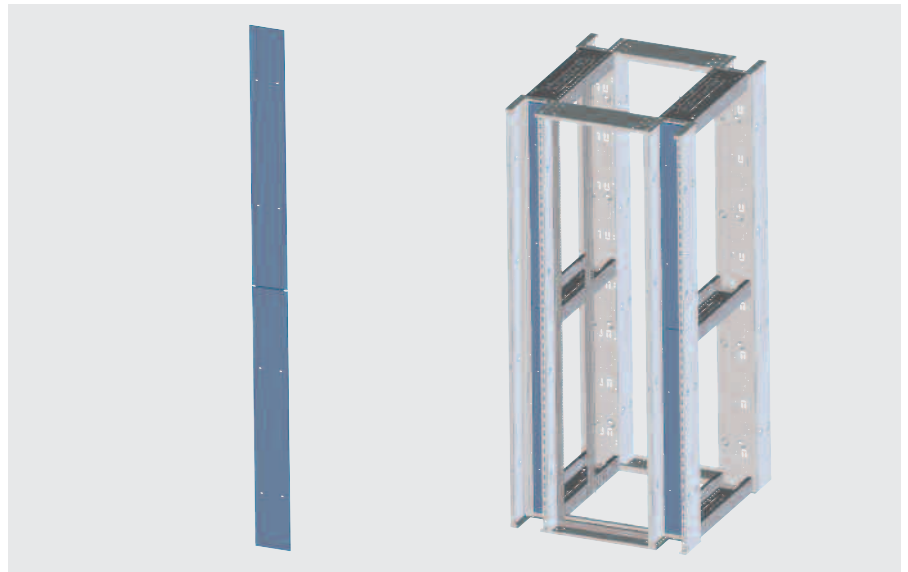


17 Locking panel for cable duct

- to partition cooling corridor of cable duct
- mounted on the rear of cable ducts (can only be used for standard assembly of crossbars)
- set = 2 pieces (1 duct)

Material:
sheet metal

Finish	Order no.
RAL 7035	583-000-96
RAL 9005	583-005-96



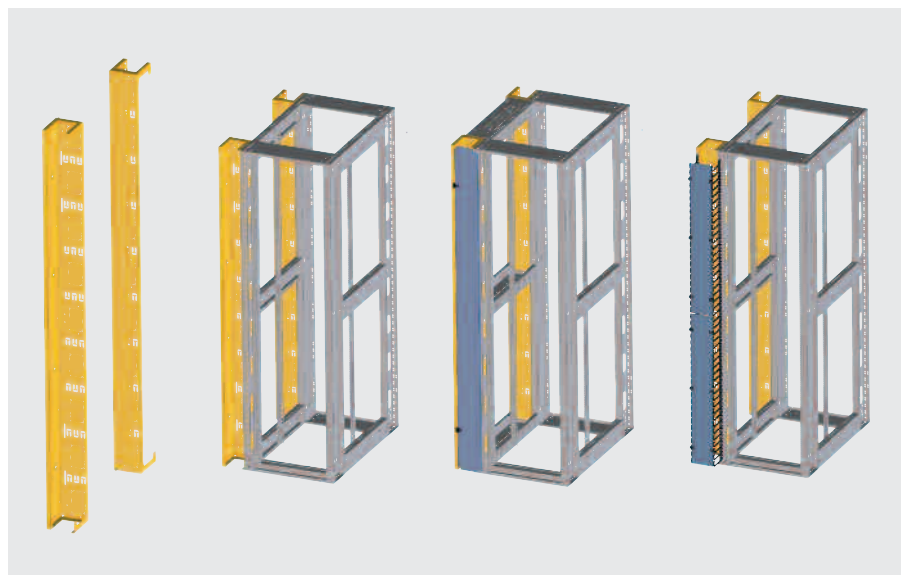
18 Extending canal set

- for extending the baying system "600"
- structured cable routing over the entire cabinet height
- expandable with hinged cover (item 12) or cable manager (item 9)
- Set = 2 mounting channels 46 U, incl. mounting material

Material:
sheet metal

Dimensions (H x W x D):
2130 x 150 x 175 mm

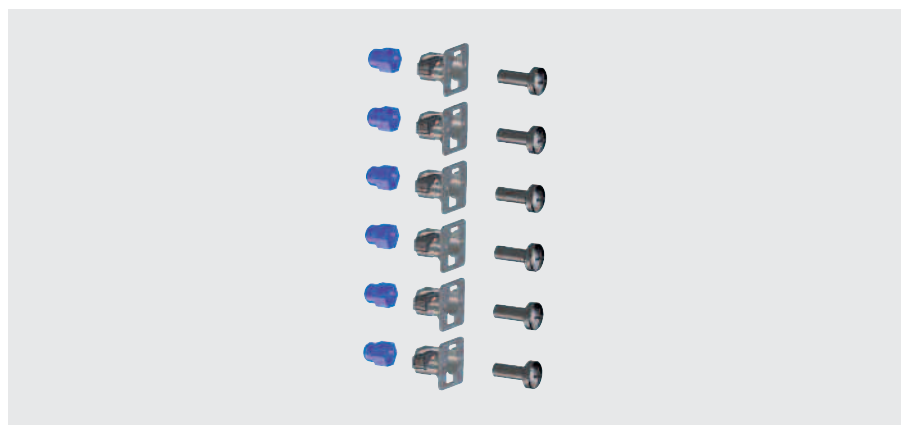
Finish	Order no.
RAL 7035	583-001-82
RAL 9005	583-005-65



19 Cabinet connector set

- to connect basic or connector cabinets

Order no.
583-000-97



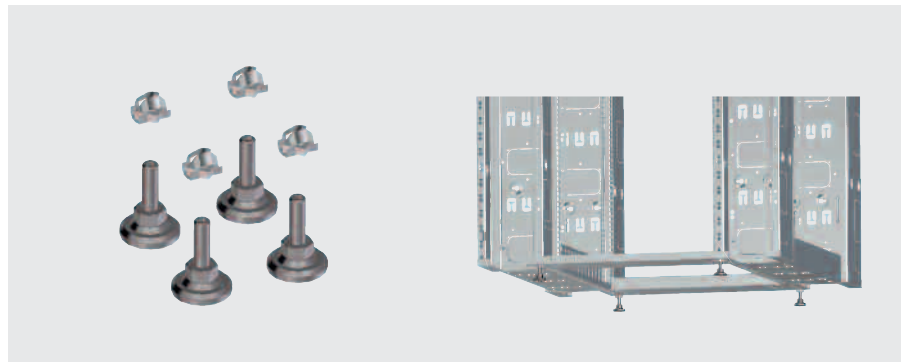


20 Adjusting feet set

- for basic and connector system
- to be screwed onto the cabinet frame or to the base corners
- set = 4 pieces

Material:
steel, plastic

Description	Order no.
Mounting on rack	500-001-28
Mounting on base	318-026-02

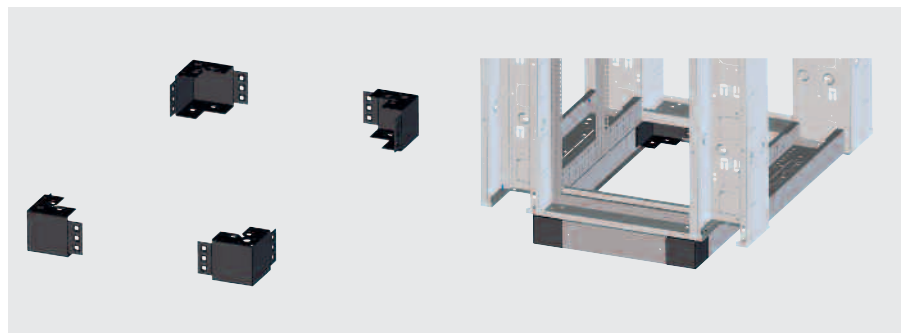


21 Base corner set

- for basic and connector system
- H = 100 mm
- set = 4 pieces

Material:
sheet metal

Colour	Order no.
RAL 7035	318-100-00
RAL 9005	318-200-00



22 Base covers, solid

- for basic and connector system
- 4 covers (and four base corners, item 21) complete one base

Material:
sheet metal

Type	W/D	Finish	Order no.
1	900	RAL 7035	318-100-10
	900	RAL 9005	318-100-18
	600	RAL 7035	316-100-10
	600	RAL 9005	316-200-10
2	800	RAL 7035	318-100-20
	800	RAL 9005	318-100-23
	1000	RAL 7035	318-100-30
	1000	RAL 9005	318-100-61
	1200	RAL 7035	318-100-50
	1200	RAL 9005	318-100-51

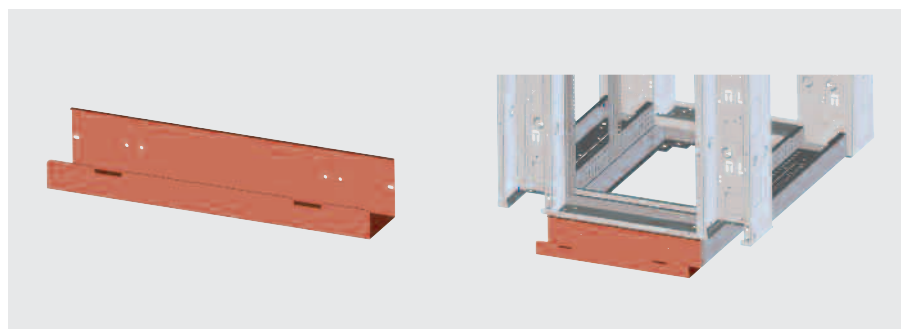


23 Cable routing tray

- for basic and connector system
- to be used with base corner set
- for cable entry

Material:
sheet metal

Finish	Order no.
RAL 7035	583-000-70
RAL 9005	583-005-70



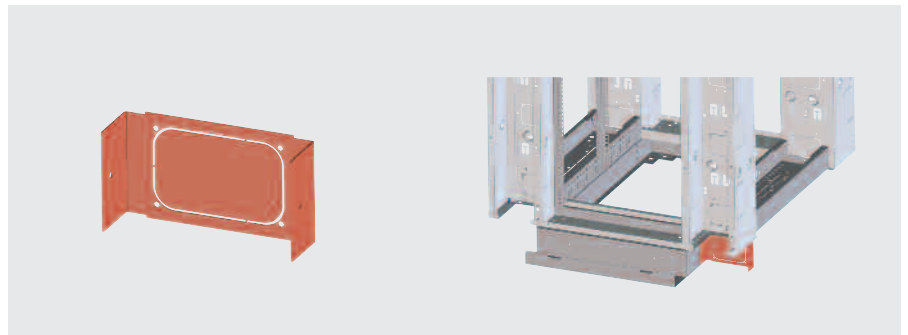


24 Socket infill panel

- for basic system
- conceals space between two cabinet frames when mounting on cabinet base

Material:
sheet metal

Finish	Order no.
RAL 7035	583-000-71
RAL 9005	583-005-71

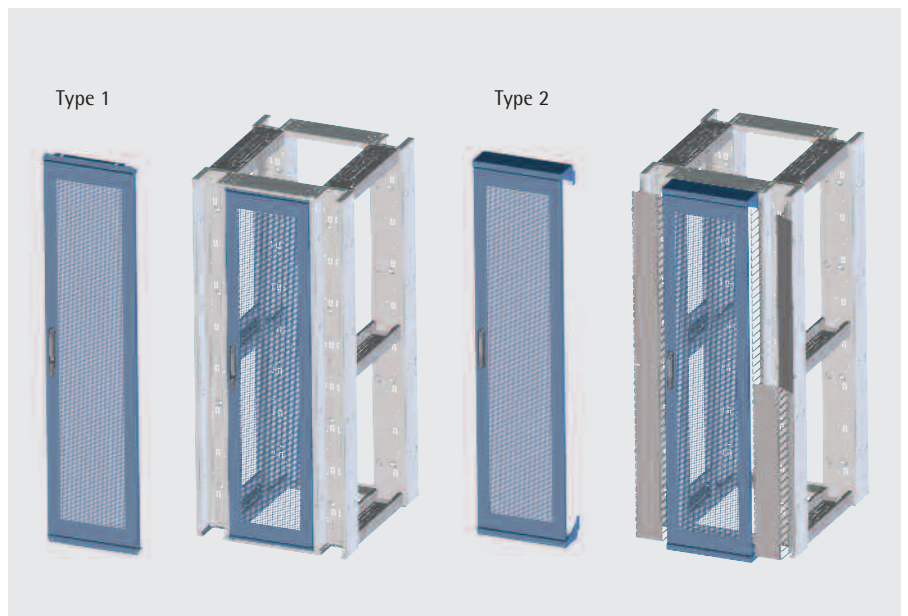


25 Door ventilated (83 % perforated)

- type 1: flush-mounted with frame
- type 2: flush-mounted with the cable clamp
- with turning lever lock and push button opening (profile half cylinder possible)

Material: sheet metal

W/D mm	Finish	Type	Order no.
900	RAL 7035	1	583-000-76
900	RAL 9005	1	583-005-76
600	RAL 7035	1	583-000-76
600	RAL 9005	1	583-005-76
600	RAL 7035	2	583-000-54
600	RAL 9005	2	583-005-54
900	RAL 7035	2	583-000-80
900	RAL 9005	2	583-005-80

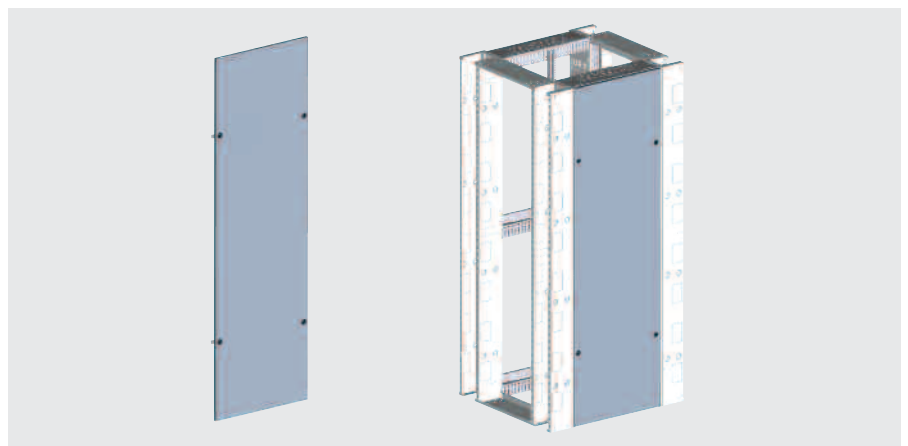


26 Side panel

- with 4 sash fasteners ("double-bit" 5 mm mechanism)

Material:
sheet metal

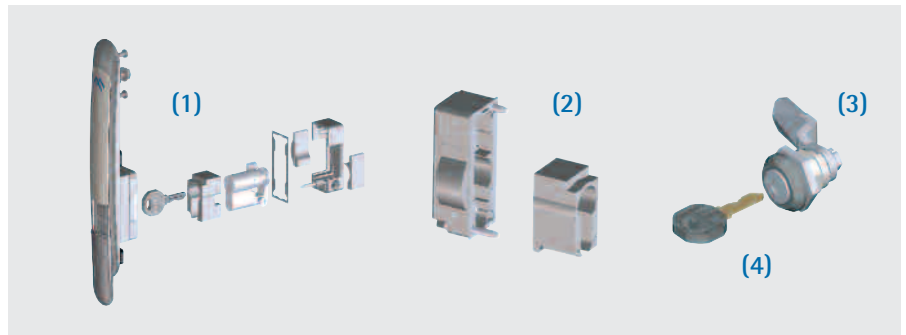
D mm	Finish	Order no.
800	RAL 7035	583-000-04
800	RAL 9005	583-005-14
1000	RAL 7035	583-000-84
1000	RAL 9005	583-005-84
1200	RAL 7035	583-000-07
1200	RAL 9005	583-005-07





27 Locking systems for doors and side panel

- **profile semi-cylinder** L = 40 mm with EK 333 closing for turning lever lock on door (item 25)
- **adapter** for installing a profile semi-cylinder with L = 40 mm acc. to DIN 18252 (item 25)
- **sash fastener** with EK 333 closing for locking the side panel (item 26)



Description	Order no.
profile semi-cylinder with EK 333 closing (1)	676-316-00
Adapter for profile semi-cylinder (2)	676-316-10
Sash fastener (3)	676-181
Spare key EK 333 (4)	676-200

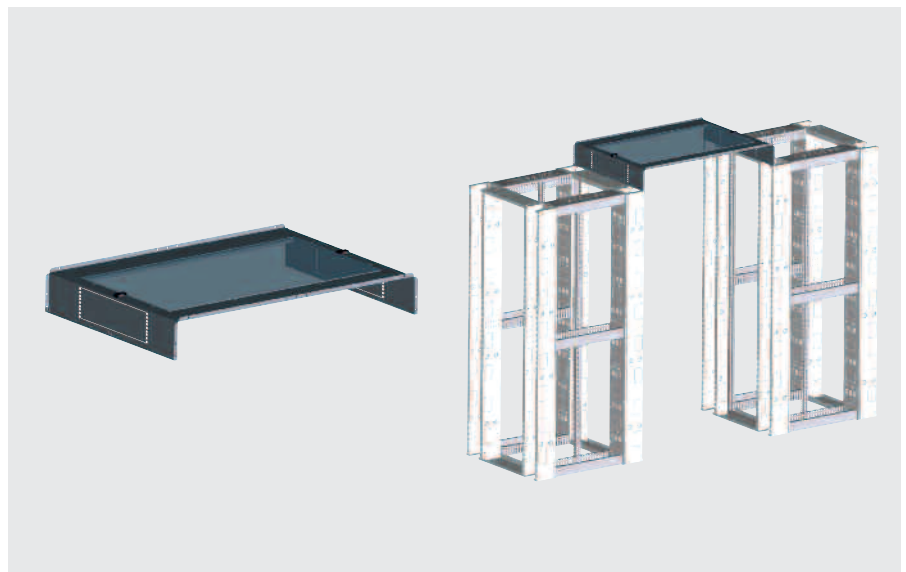
28a Corridor cover with toughened safety glass

- for easy mounting on the cabinet system
- with 19" 3 U mounting section for power supplies, light systems etc. (item 28b)
- with toughened safety glass
- for cooling corridor with width 1.2 m

Material:

sheet metal, toughened safety glass

W mm	Finish	Order no.
900	RAL 7035	583-000-75
900	RAL 9005	583-005-75
600	RAL 7035	583-000-63
600	RAL 9005	583-005-63



28b Corridor Cover with LED panel

- easy installation on the cabinet systems
- for optimal illumination of the cold aisle
- LED panel with 24 W, 6000 K, 2400 lm
- incl. 19" mounting panel (3 U) for mounting power distributions etc.
- for aisle width 1200 mm

Material:

corridor cover: sheet metal, LED panel: aluminium / acryl

W mm	Finish	Order no.
900	RAL 7035	583-002-52
900	RAL 9005	583-005-52



Technical changes and errors reserved. Pictures may be different from the product



29 Sliding door system

- to complete a NETcell cold / warm aisle containment
- for cooling corridor with width 1.2m
- height adjustment towards floor is possible

Material:

sheet metal, toughened safety glass

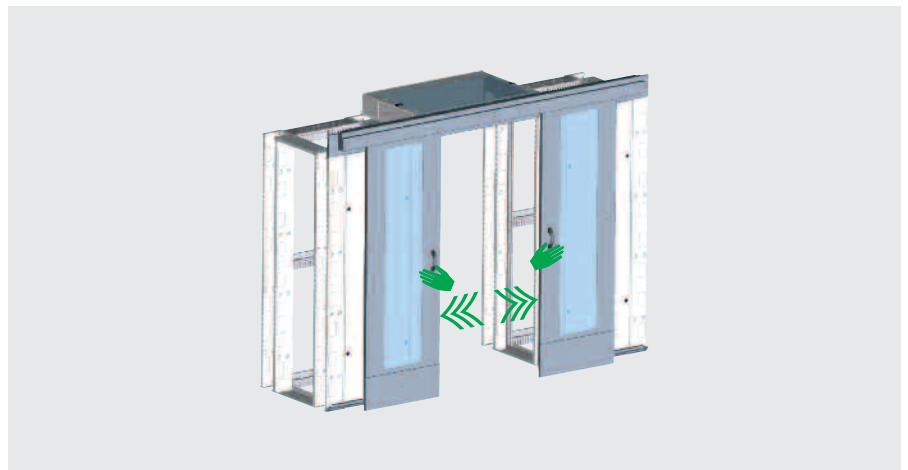
Model	Finish	Order no.
manuell	RAL 7037	583-000-59
manuell	RAL 9005	583-005-59
elektrisch	RAL 7037	583-001-13
elektrisch	RAL 9005	583-001-16



30 Extension set synchronous run for sliding door system

- synchronous opening or closing of both door leaves
- to extend the manual sliding door system

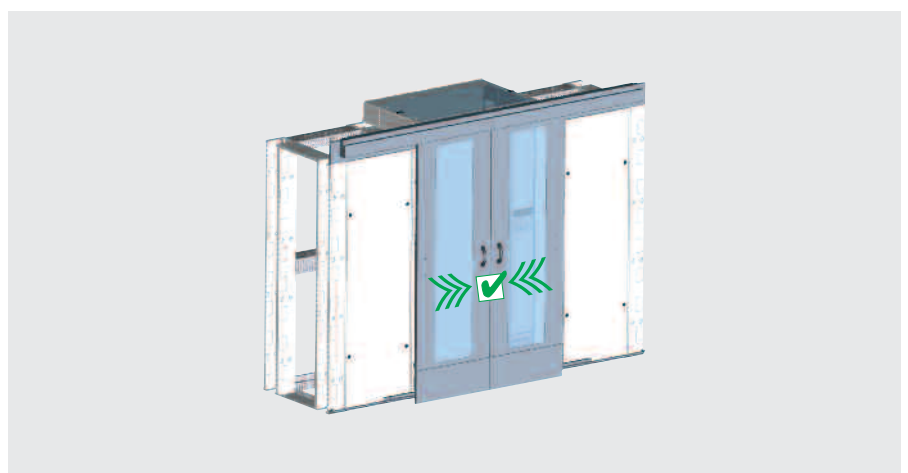
Order no.
583-003-36



31 Extension set synchronous run with linear return

- synchronous opening of both door leaves with independent closing
- mechanical return system
- high energy efficiency, since the cold / hot aisle is always closed automatically
- to extend the manual sliding door system

Order no.
583-003-62



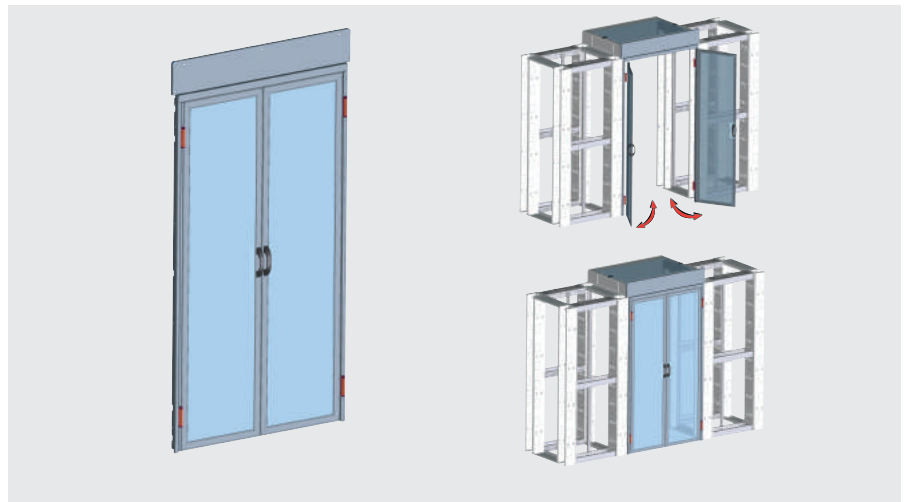


32 Swing door system

- to complete a NETcell cold / warm aisle containment
- opening possibility in both directions
- 180 ° opening angle, optimal access
- ensuring pressure equalization in the cold aisle (for example, when the extinguishing system is triggered)
- high energy efficiency, as the cold aisle is always closed automatically
- protection of persons in dangerous situations (escape door)
- for aisle width 1200 mm

Material:

Mounting frame: sheet steel, door profiles: aluminium, tempered glass



Finish	Order no.
RAL 7037 / aluminium look	583-004-15
RAL 9005 / aluminium look	583-004-50

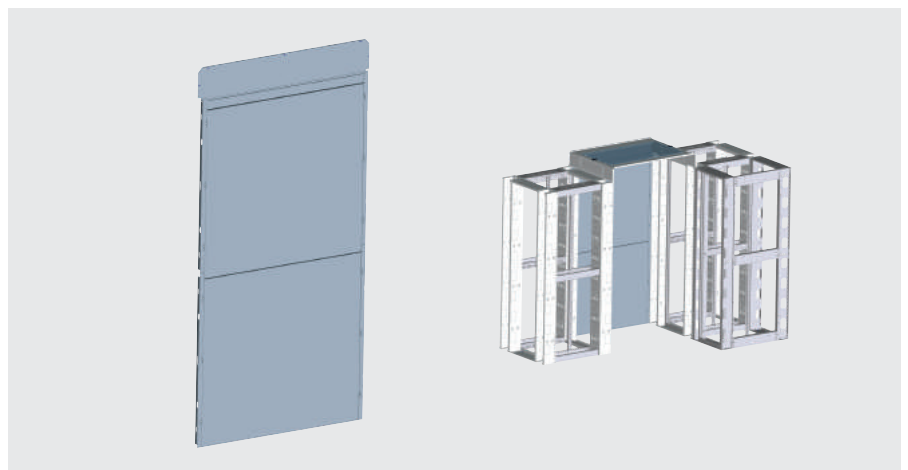
33 Corridor back wall set

- to finish a NETcell cold / warm aisle with a passage width of 1200 mm
- horizontally split mounting
- Set = 2 rear panels, incl. mounting brackets and completion of the corridor cover

Material:

sheet metal

Finish	Order no.
RAL 7035	583-003-90
RAL 9005	583-005-26





34 Cable tray

- to guide cables above cooling or heating corridor
- may also be used together with corridor cover (cooling corridor)

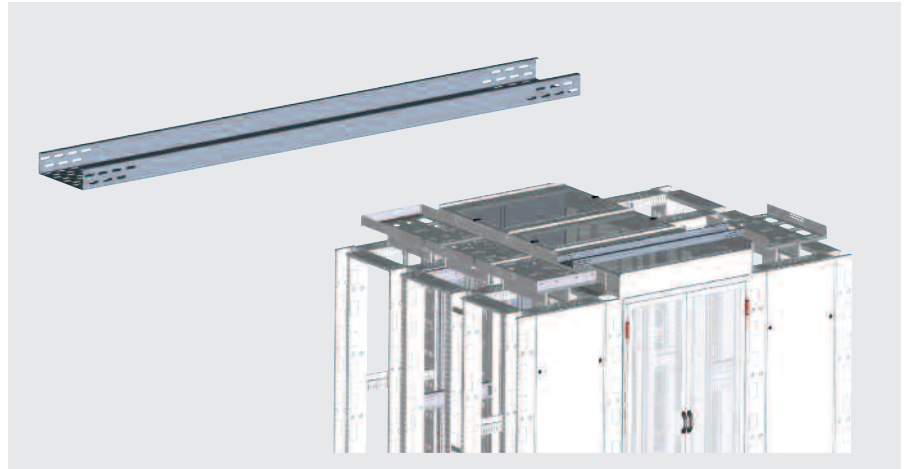
Material:

sheet metal, hot dip galvanised

Dimensions (W x H x D):

200 x 60 x 1500 mm

Order no.
583-000-91



35 19" blind panel, plastic, 1 U

- air separation function: cost-saving and very effective option for reducing energy costs in data centres
- visual upgrade of the rack by concealing free 19" surfaces
- stylish design due to rounded front surface of the panel
- short assembly time: the blind panel is easily and without tools clipped into the 19" grid.
- can be removed and reinserted at any time without wear and tear and without tools
- protection against dust entry
- fire protection classification to UL94 V-0
- weight-saving in comparison to traditional metal panels

Material:

Lexan 920, fire class to UL 94 V-0, ROHS-compliant

Finish:

RAL 7016 anthracite grey, RAL 7035 light grey or RAL 9005 jet black

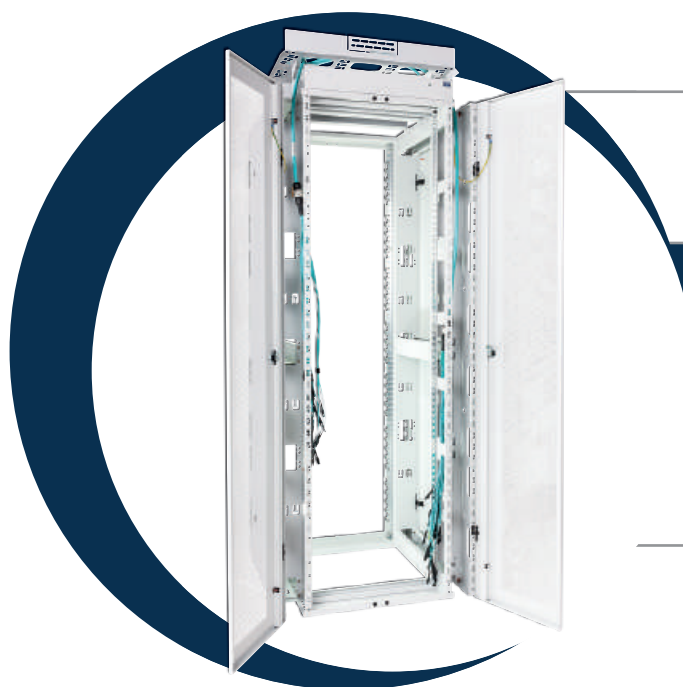
Delivery:

Set = 10 pieces

Set = 136 pieces



Colour	Lieferform	Order no.
RAL 7016 anthracite grey	Set = 10 pc.	213-156-25
	Set = 136 pc.	213-156-40
RAL 7035 light grey	Set = 10 pc.	213-156-30
	Set = 136 pc.	213-156-45
RAL 9005 jet black	Set = 10 pc.	213-156-78
	Set = 136 pc.	213-156-79



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



Air conditioning technology

from page 129



Power distribution system

from page 137



Cabinet monitoring

from page 155



Cable management

from page 163



Distribution technology

from page 169



General accessories /
distribution technology

from page 177



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



Open distribution rack easyVARI

- can be completely dismantled
- easy transport to installation site
- simple assembly and installation of passive and active network components without interfering with cabinet mounts
- easy ventilation and installation, since no trim parts interfere
- 10 metal clamps are attached to every rack for cable entry (included in delivery).
- Cross-connection between individual racks is realised through the base
- 19" frame, variable depth 450-900 mm in 50 mm jumps

Material:

sheet metal

Finish:

RAL 7035 light grey

Delivery:

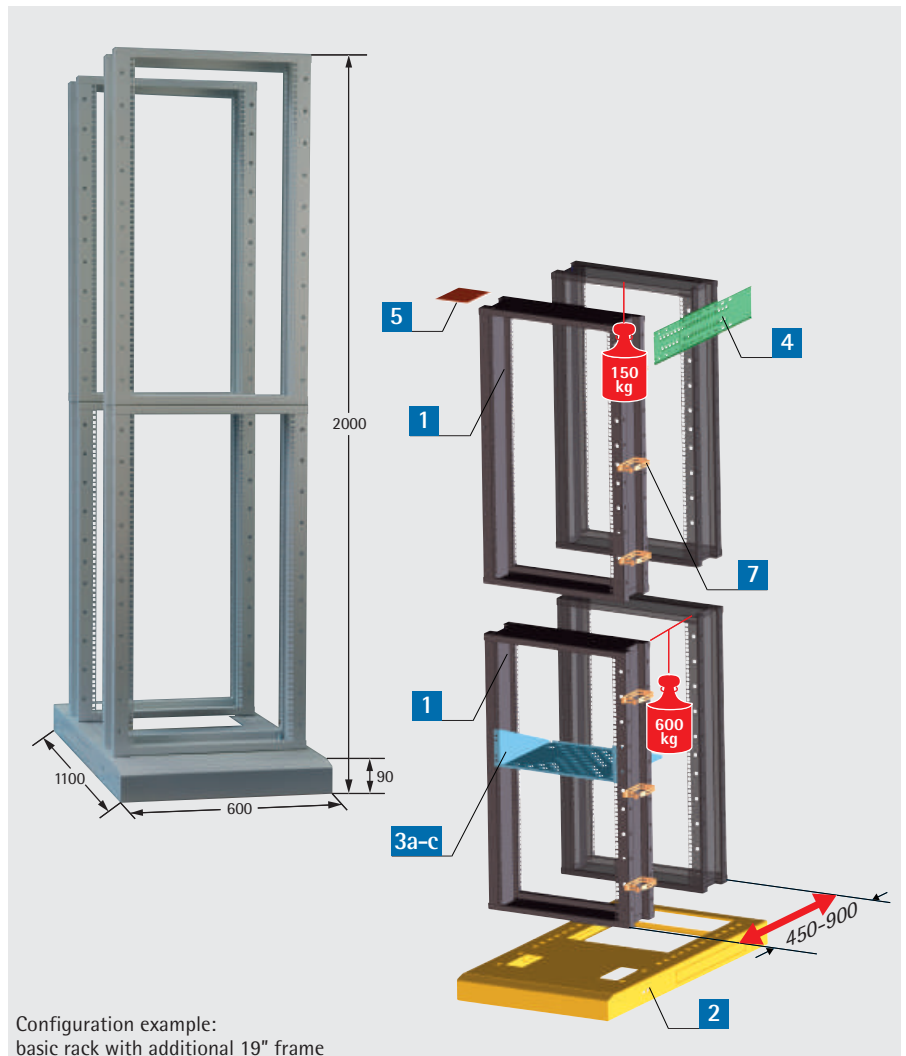
unmounted

Components

Item	Description
1	19" frame 21 U
2	Base, H0100 mm
3a-c	19" shelves
4	Depth struts, variable depth
5	Cabinet connector set
6a-c	Slide rails (without fig.)
7	Cable clamps

Delivery

Basic rack		
Item	pc.	Description
1	2	19" frame 21 U
2	1	Anti-tip base H = 100 mm, D = 1100 mm, cable inputs/outputs back and side
7	10	Cable clamps 125 x 66 mm
Connector rack		
Item	pc.	Description
1	2	19" frame 21 U
2	1	Anti-tip base H = 100 mm, D = 1100 mm, cable inputs/outputs back and side
5	1	Cabinet connector set
7	10	Cable clamps 125 x 66 mm
Extension frame		
Item	pc.	Description
1	2	19" frame 21 U

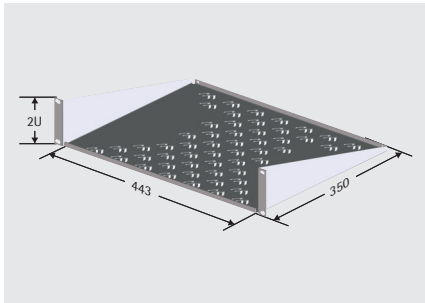


Configuration example:
basic rack with additional 19" frame

Description	Dimensions (H x W x D) mm	Order no.
Basic rack	2100 x 600 x 1100	582-101-00
Connector rack	2100 x 600 x 1100	582-101-10
Extension frame	1970 x 600 x 190	582-101-15



3a 19" shelf 2 U, fixed installation



- simple assembly on a 19" grid (only one 19" level required)
- ventilated

Material:

sheet metal

Finish:

RAL 7035 light grey

Load capacity:

15 kg (distributed load/static)

Dimensions (H x W x D):

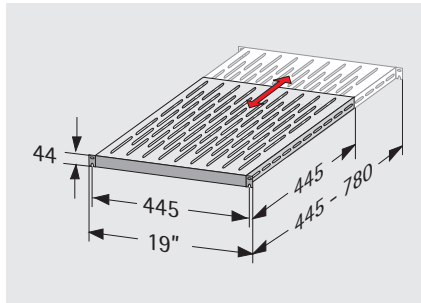
2 U (88 mm) x 19" (482,6 mm) x 350 mm

Floor space (w x d):

443 x 350 mm

Order no.
315-810-20

3b 19" shelf 1 U "VARiplain" fixed installation



- depth variable due to VARiplain technology
- telescopic: 445 - 780 mm (see fig.)
- simple one-person assembly through open long hole in the 19" front (hook-in)

Material:

sheet metal

Finish:

RAL 7035 light grey

Load capacity:

150 kg (distributed load/static)

Dimensions (H x W x D):

1 U (44 mm) x 19" (482,6 mm) x 445 - 780 mm

Floor space (w x d):

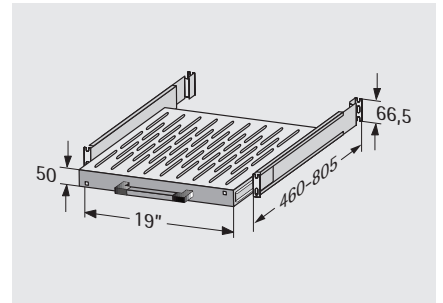
445 mm x (445 - 780) mm

Delivery

mounting material included

Order no.
316-036-99

3c 19" shelf 1.5 U extractable



- variable-depth installation
- extraction length 500 mm
- simple one-person assembly

Material:

sheet metal

Finish:

RAL 7035 light grey

Load capacity:

60 kg (distributed load)

Dimensions (H x W x D):

1,5 U (66,5 mm) x 19" (482,6 mm) x 465 - 665 mm

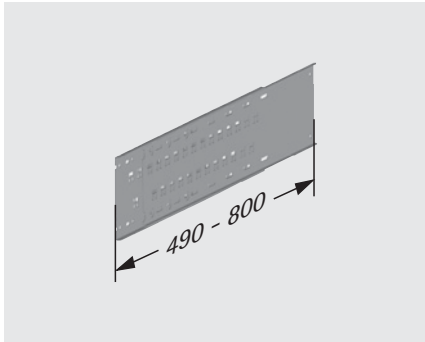
Floor space (w x d):

410 x (465 - 665) mm

Depth D mm	Order no.
465	318-141-00
665	318-141-01



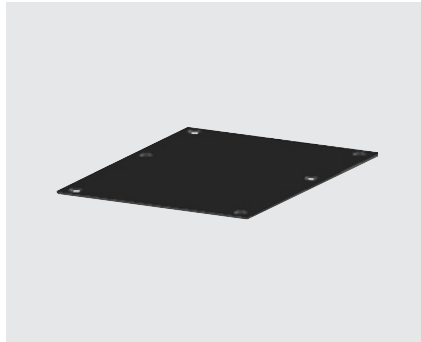
4 Depth struts, variable depth



- to connect two 19" frames installed one behind the other

Order no.
582-101-32

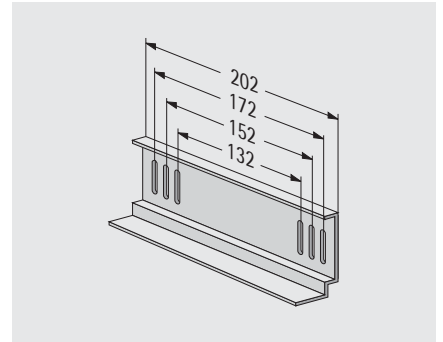
5 Cabinet connector set



- for the lateral connection of other distribution racks

Order no.
582-101-34

6a Slide rail



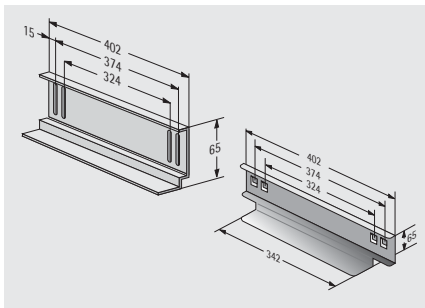
- for the installation on one 19" level
- Delivery: 1 pair

Load capacity:

50 kg

Order no.
312-543

6b Slide rail, hook-in/screwed on



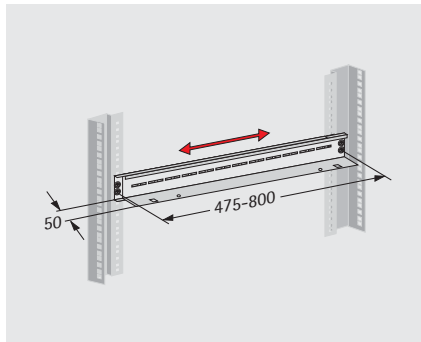
- to support heavy 19" plug-in units
- two 19" levels are required for mounting
- Delivery: 1 pair

Load capacity:

50 kg

Description	Order no.
hook-in	316-544-00
screwed on	312-544

6c Slide rail, variable depth



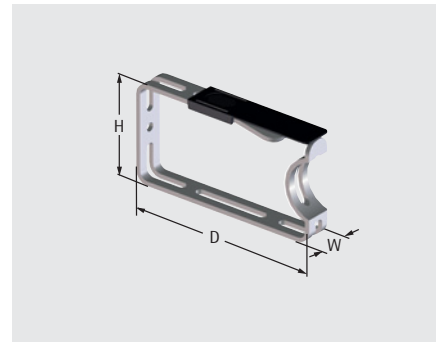
- for 19" plug-in units irrespective of the clearance to the 19" levels
- depth-adjustable
- for use as of a cabinet depth of 800 mm
- Delivery: 1 pair

Load capacity:

50 kg

Order no.
316-544-20

7 Cable clamp set



- for positioning cables vertically on the 19" frame
- set = 10 pieces

Material:

steel

Dimensions (H x W x D) mm	Order no.
66 x 23 x 125	640-036-12
88 x 23 x 125	640-036-13



19" laboratory rack 21 U

- for frequent access to 19" equipment, for example in laboratories, and development departments

Material:

sheet metal / die cast

Finish:

RAL 7035 light grey

Pedestal: RAL 7037 dusty grey

Load capacity:

120 kg

Delivery:

unmounted

The following can be used as accessories: Shelves 2 U (page 85) and cable clamp set (page 86).

Delivery

Laboratory rack

pc.	Description
1	19" sheet metal frame 21 U with grid in front and rear
2	Pedestal with integrated adjusting feet
1	Mounting material

Extension module

pc.	Description
1	19" sheet steel frame 21 U with front and rear grid
1	Mounting material



Dimensions (H x W x D) mm	Description	Order no.
1044 x 561 x 770	Laboratory rack 21 U	585-010-20
984 x 561 x 190	Extension module 21 U	585-010-22

Castor set for laboratory rack

- for installation on the pedestal set
- H = 100 mm
- two castors with brake

Load capacity:

225 kg



Order no.
582-101-30



582 • 19" wall rack

19" wall rack

The 19" wall rack represents a flexible, effective and cost-effective 19" alternative in the wall distribution sector.

The 19" level can be depth adjusted from 300 mm up to a maximum of 500 mm providing enough space for cable routing even for deep plug-in units.

A second 19" level at the rear of the rack allows the assembly of sliding rails to accept heavy plug-in units. The cable feed above and below is fitted with an integrated strain-relief strip.

The 19" wall rack is simple to mount since the fixing holes can be marked to the wall by using the mounted 19" rack and subsequently be drilled and screwed.

Construction:

The 19" wall rack comprises two wall brackets (1), upper and lower extraction rails (2) and a front and/or rear 19" level (3).

Finish:

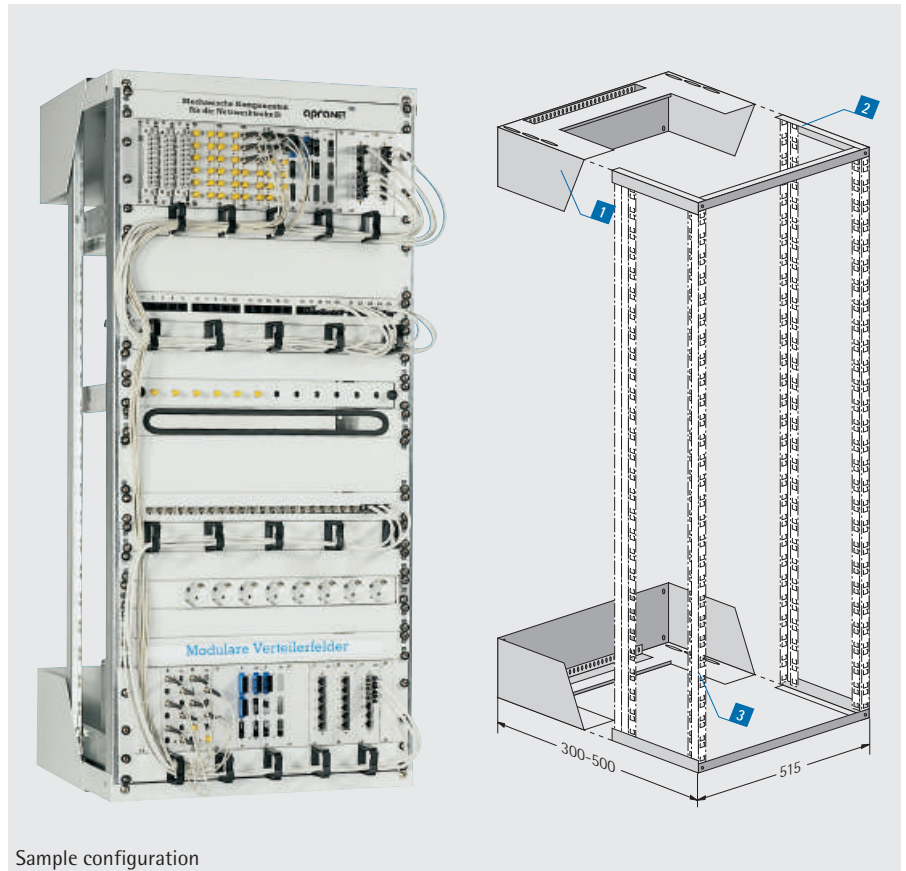
Wall bracket: RAL 7035 light grey
Extraction rails / 19" level: galvanised

Load capacity:

19" level front: 60 kg
19" level front and rear: 100 kg

Delivery:

unmounted



Sample configuration

A maximum of 4 vertical mountings can be integrated into the open wall rack. 19" vertical mountings (3) please order separately based on your U re-quirements (see page 89).

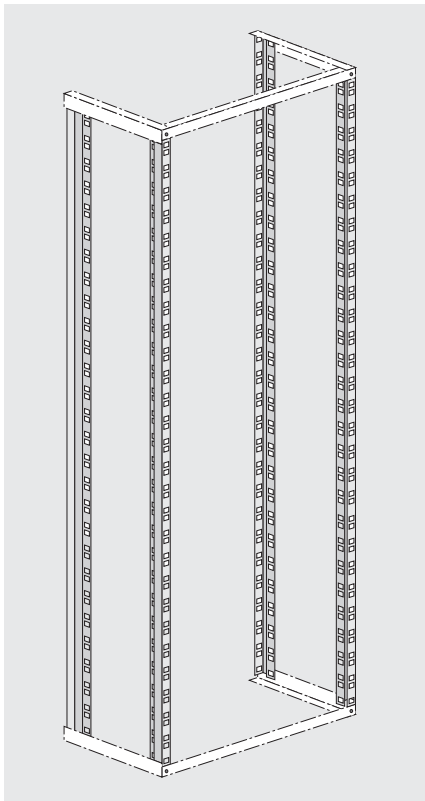
Delivery

Item	pc.	Description
1	2	Wall bracket
2	2	Extraction rails

Order no.
582-010-00



3 19" vertical mountings

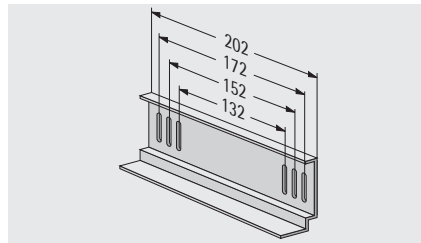


Finish:
galvanised

A maximum of 4 vertical mountings can be incorporated into the open wall rack.

U	Order no.
9	500-309
12	500-312
15	500-315
18	500-318
24	500-324

Slide rail for 19" vertical mounting



- to support heavy plug-in units
- includes mounting material

Material:
sheet metal
Finish:
galvanised
Delivery:
1 pair

Four 19" vertical mountings are required for mounting.

Order no.
312-543

19" cable entry panel 1 U / 2 U with metal clips



- for controlled and clearly arranged horizontal cable guiding at the 19" level
- including 4 cable hoops and lockings

Finish:
painted/chrome-plated
RAL 7035 light grey
RAL 9005 jet black
Dimensions (H x W x D):
1 U: 44 x 482,6 x 90 mm
2 U: 88 x 482,6 x 130 mm

U	Colour	Order no.
1	RAL 7035	213-145-41
1	RAL 9005	213-145-42
2	RAL 7035	213-145-43
2	RAL 9005	213-145-44

19" cable entry panel 1 U with plastic clips

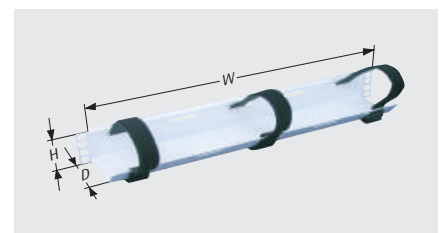


- for clear, neat horizontal cable entry in the 19" level
- including 5 cable clamps and mounting material

Finish:
RAL 7035 light grey
RAL 9005 jet black
Dimensions (H x W x D):
44 x 482,6 x 60 mm
Delivery:
mounting material included

Colour	Order no.
RAL 7035	213-145-00
RAL 9005	213-145-30

19" cable entry panel 1 U with Velcro fasteners



- for clear and neat horizontal cable entry at the 19" level with Velcro fastener
- including 3 Velcro strips and mounting material

Finish:
RAL 7035 light grey
RAL 9005 jet black
Dimensions (H x W x D):
44 x 482,6 x 90 mm

Colour	Order no.
RAL 7035	213-161-00
RAL 9005	213-161-10



582 • 19" desk rack 4 U

19" desk rack 4 U

- the small 19" frame is ideal for space-saving yet secure mounting of 19" components
- can be mounted both horizontally and vertically
- with two extra drill holes in the bottom panel, it can also be mounted under a desktop or as simple wall rack
- includes raised floor shelf to accommodate excess cable lengths
- fast time-saving assembly
- cost-saving solution for small networks
- designed as simple assembly stands for 19" components in laboratories or test rooms

Material:

sheet metal

Finish:

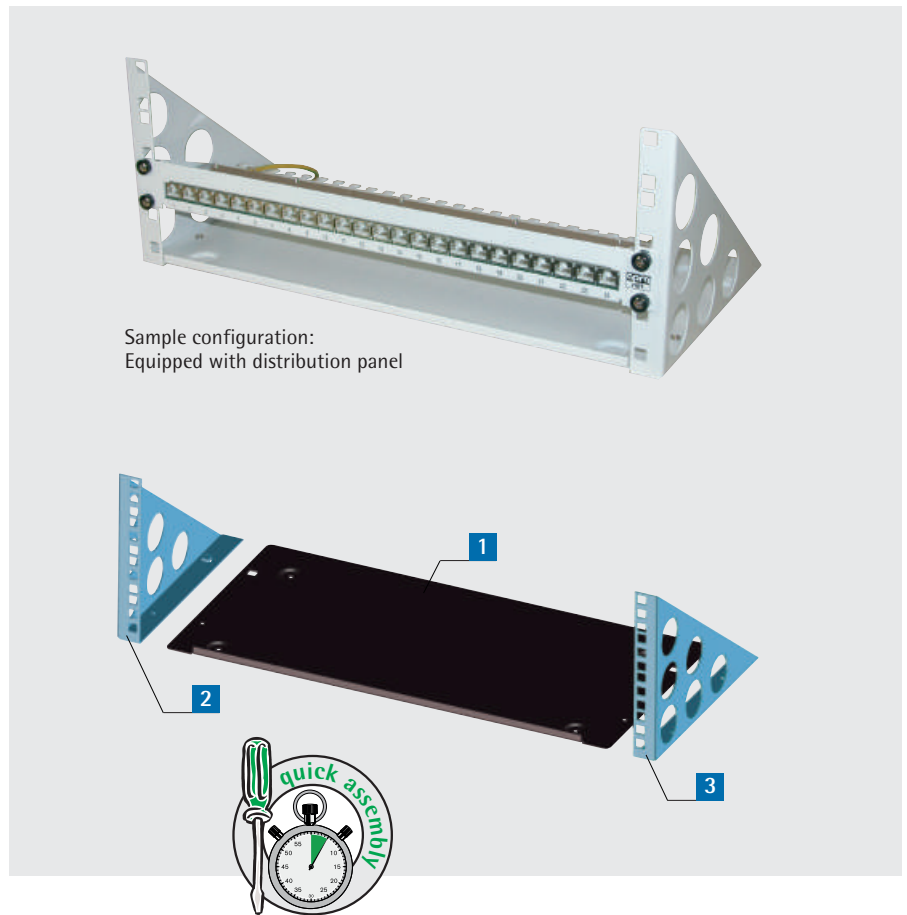
RAL 7035 light grey

Dimensions (H x W x D):

190 x 502 x 250 mm

Delivery:

unmounted



Delivery

Item	pc.	Description
1	1	Basic plate
2	1	Side part left
3	1	Side part right
	16	Screws M 5 x 12
	16	Decorative washers M5
	16	with collar
	16	Cage nuts M5-8
	1	Mounting material

Order no.

582-004-00



1 19" / 21" rack system "NETcell 800"

- open 19" / 21" cabinet system with large volume integrated cable ducts across the entire rack height, as well as in the depth of the system.
- The vertical 19" spars (42 U) can be adjusted to the ETSI (21") track by 90°, if required, by simply repositioning them.
- With further options for cable routing "on top" via optional cable guide brackets (item 6) as well as an excess length tray (item 5) / integrated cable tray expandable.
- The cabinet system can be used as a closed rack using trim components (items 2, 3 and 4).
- Installation as a single cabinet and cabinet row possible.
- Cabinet system completely dismantled.

Installation height:
19" = 42 U / 21" = 75 U

Material:
sheet metal

Finish:
RAL 7035 light grey

Load capacity:
1500 kg (distributed load)



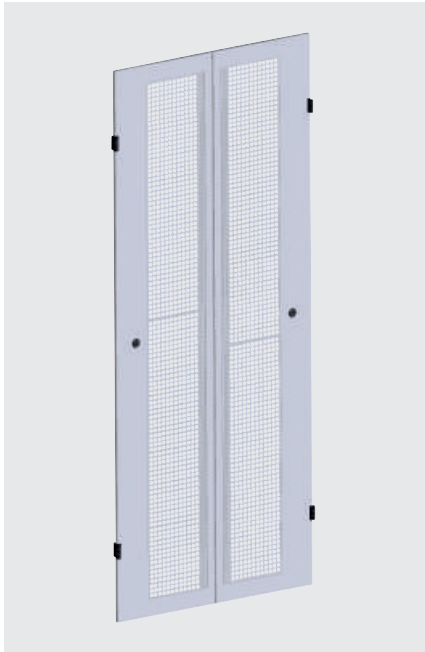
Table of components

Item	Description
1	Basic system
2	Door divided, perforated
3	Side wall / bulkhead
4	Roof plate
5	Oversize tub
6	Cable management angle / final panel
7	Adjustable feet

Dimensions (H x W x D) mm	Order no.
2000 x 800 x 1000	583-901-90
2000 x 800 x 800	583-902-00



2 Door divided, perforated



The door is divided and 82% perforated. This is for passive ventilation of the NET-cell system. The doors can each be closed individually via cam locks. The two doors cover the entire cabinet front including the channels.

- including two cam locks with double bit closure
- Profile closure possible (see right)

Material:

sheet metal

Finish:

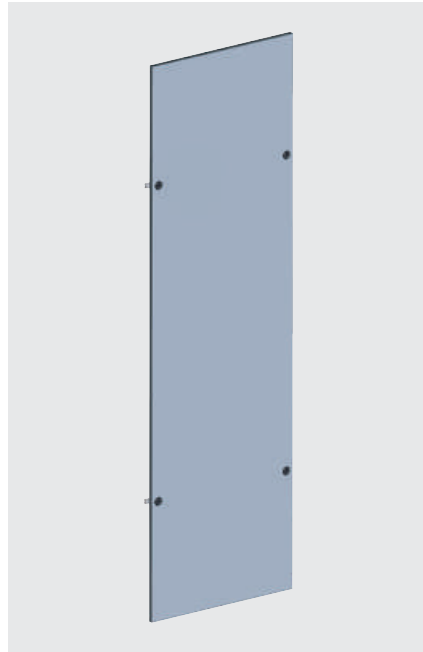
RAL 7035 light grey

Dimensions (H x W x D):

2000 x 800 x 35 mm

Order no.
583-902-02

3 Side wall / bulkhead



The side walls are provided with four cam locks. This is for easy and quick installation of the side walls.

- including four sash closures with double-bit closure
- Profile closure possible (see closure system)

Material:

sheet metal

Finish:

RAL 7035 light grey

Dimension (H x W) mm	Order no.
2000 x 1000	583-002-25
2000 x 800	583-002-72

Locking systems for doors and side panel



- sash fastener with EK 333 closing for locking the shared door (Item 2) and the side panel (Item 3)

Description	Order no.
Sash fastener	676-181
Spare key EK 333	676-200



4 Roof



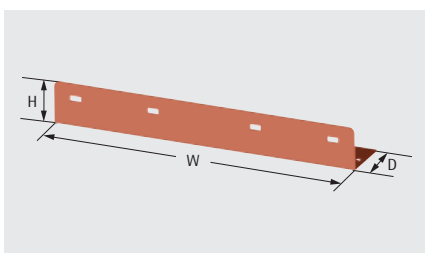
- The roof contains two pre-stamped plates that can be broken out for cable entry.

Material:
sheet metal

Finish:
RAL 7035 light grey

Depth D mm	Order no.
1000	583-902-04
800	583-902-03

6 cable management bracket / cover



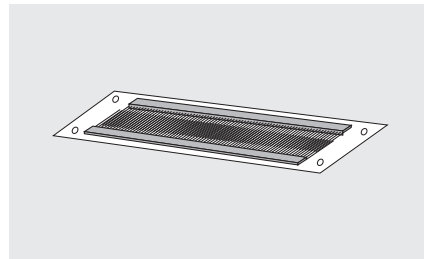
- serve for cable routing on the cabinet system
- are mounted on the roof without tools
- can be placed individually in the depth
- can also serve as the end panel of the excess length tub

Material:
sheet metal

Finish:
RAL 7035 light grey
Dimensions (H x W x D):
80 x 580 x 100 mm

Order no.
583-901-99

Brush set



- After removing the pre-stamped panels of the roof panel, this brush set is used to close the openings or for cable entry through the roof.

Order no.
316-111-10

Adjusting feet

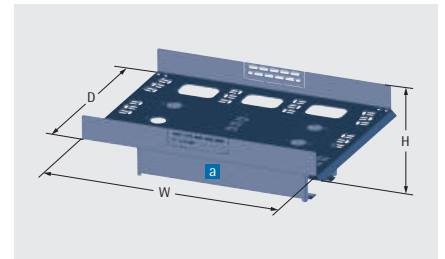


- are bolted to the frame
- serve to align the cabinet, e.g. on uneven ground
- 1 set = 4 pieces

Material:
sheet metal, plastic
Finish:
RAL 7035 light grey

Order no.
500-001-28

5 Oversize tub



- is screwed onto the cabinet system
- serves as a cable tray system for cabinet rows and can replace hinged cable trays
- can be closed by the tool-free installation of a cover on the front side

Material:
sheet metal

Finish:
RAL 7035 light grey
Dimensions (H x W x D):
250 x 800 x 580 mm

Order no.
583-009-78



582 • 19"- / 21" Rack

1 19"- / 21" Rack

The frame is an open 19" / 21" frame with side bar outcrops for optimal cable routing. With further options for cable routing "on top" via cable guide bracket (item 5). The special feature of the grid bars is that the mounting frame can be used as a 19" (45 U) version or as a 21" (41 U) version, depending on the installation method.

Installation as a single cabinet and cabinet row possible. Rack system welded.

Material:

sheet metal

Finish:

RAL 7035 light grey

Load capacity:

600 kg (distributed load)

Dimensions (H x W x D):

2200 x 600 x 300 mm

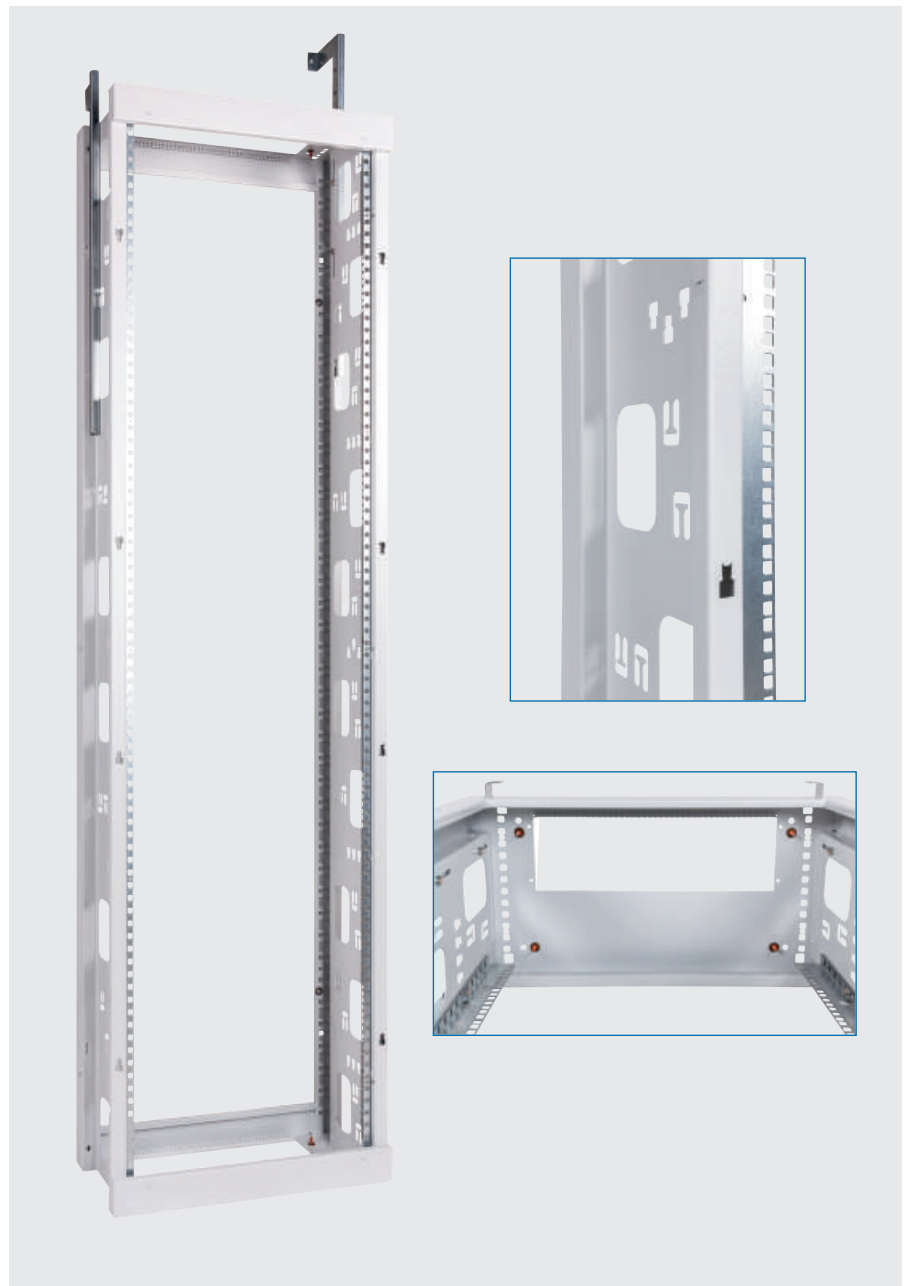
Einbauhöhe:

19"= 45 U, 21"= 81 U

Table of components

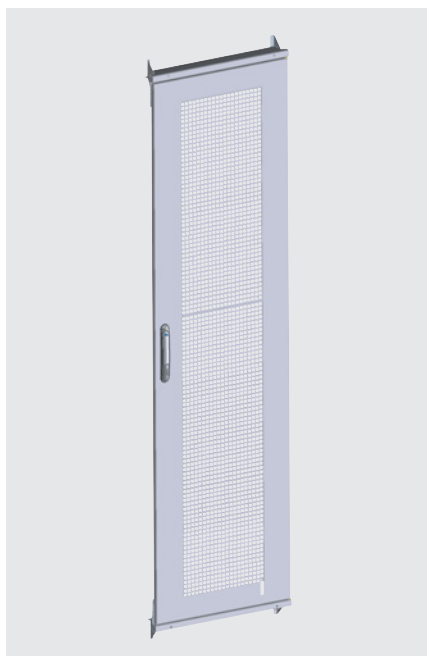
Item	Description
1	ETSI rack
2	door, ventilated
3	side wall
4	rear panel
5	cable management bracket
6	cable channel

Order no.
582-030-00





2 Door, ventilated



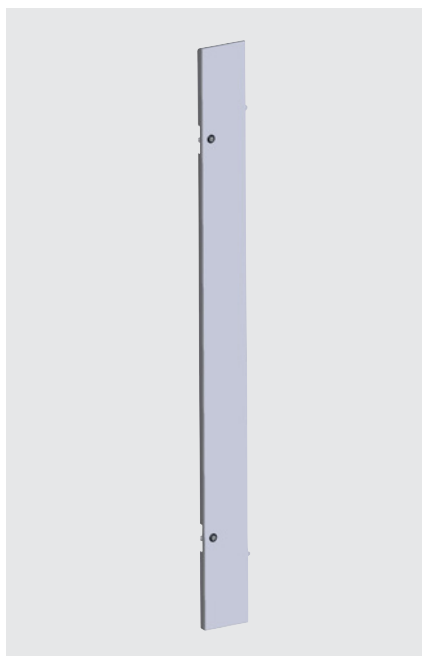
- 83% perforated for passive ventilation of the frame
- through the door, the entire cabinet front is covered
- Dimensions for H x W: 2200 x 600 mm
- the door can be closed with a two-point lock, profile half cylinder possible (see locking systems)

Material:
sheet metal

Finish:
RAL 7035 light grey

Order no.
582-030-24

3 Side wall



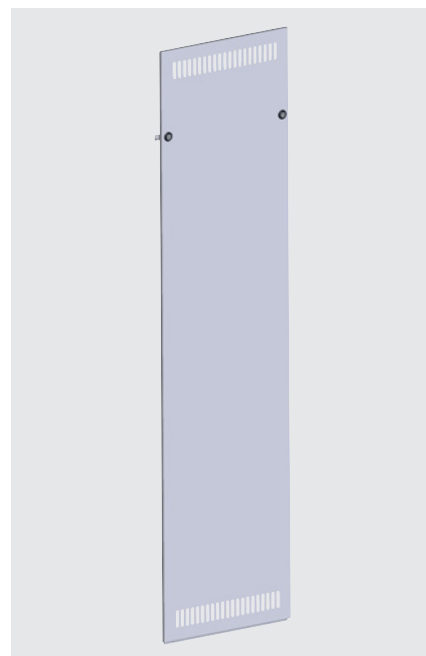
- equipped with two cam locks for easy and quick installation of the side walls
- Dimensions for H x W: 2200 x 300 mm
- Profile closure possible (see closure systems)

Material:
sheet metal

Finish:
RAL 7035 light grey

Order no.
582-030-28

4 Rear panel



- equipped with two cam locks for easy and quick installation of the rear wall
- Dimensions for H x W: 2200 x 600 mm
- Profile closure possible (see closure systems)

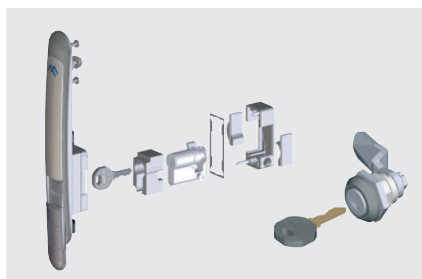
Material:
sheet metal

Finish:
RAL 7035 light grey

Order no.
582-030-25

Locking systems for doors and side panel

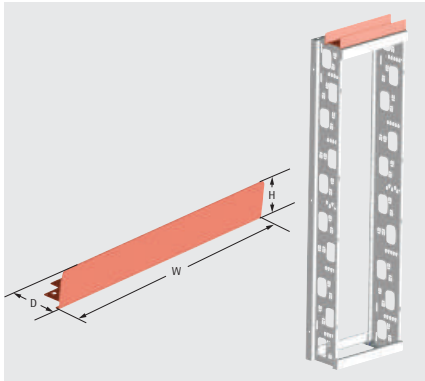
- **profile semi-cylinder** L = 40 mm with EK 333 closing for turning lever lock on door Item 2
- **adapter** for installing a profile semi-cylinder with L = 40 mm acc. to DIN 18252 Item 2
- **sash fastener** with EK 333 closing for locking the side panel Item 4



Description	Order no.
Profile half cylinder	676-316-00
Sash fastener	676-181
Adapter	676-316-10
Spare key EK 333	676-200



5 Cable management brackets

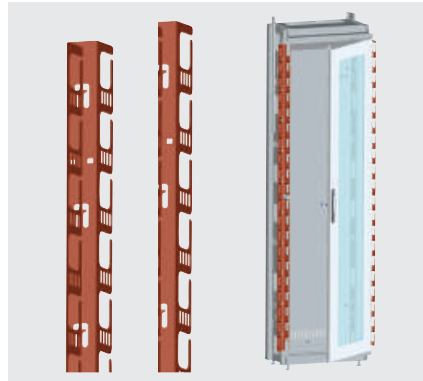


- for maneuvering cables on the rack

Material: sheet metal
Finish: RAL 7035 light grey
Dimensions (H x W x D):
 80 x 570 x 100 mm

Order no.
582-030-22

6 Cable channel set

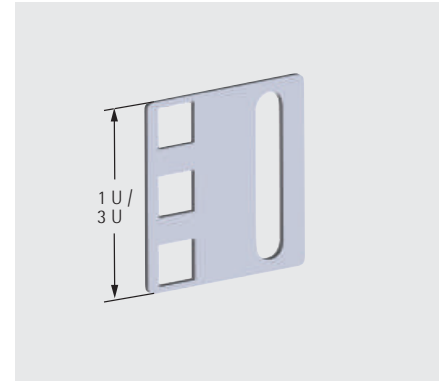


- for vertical cable routing in front of the 19" / 21" level
- is mounted on the frame
- Set = 2 pieces

Material: sheet metal
Finish: RAL 7035 light grey

Order no.
582-030-26

ETSI on 19" adapter plate



- Adapter bracket for mounting 19" components in a 21" mounting frame
- The adapter brackets are simply mounted in the 21" plane using a screw and cage nut.
- Set = 5 pairs

Material: sheet metal
Finish: galvanised

Description	Order no.
1 U	213-900-93
3 U	213-900-94

LED cabinet light



- cost-optimised LED technology with a power consumption of 5 W (light intensity equivalent to a 75 W light bulb)
- internal power supply unit with wide range voltage 100 - 230 V / AC
- long-life and no maintenance (service life at 20 °C = 60,000 h)
- available with switch or motion detector
- magnetic attachment for individual mounting in the cabinet
- pressure clamp connection

Connections must be ordered separately!

Description	Order no.
LED cabinet light with switch	640-143-05
LED cabinet light with motion detector	640-143-06
Connection with Euro plug, L = 2.5 m	640-143-08

Document pocket

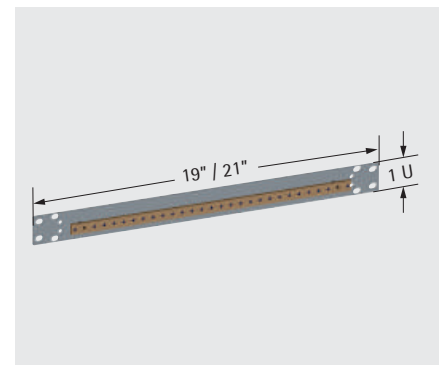


- self-adhesive
- heat-resistant up to 60 °C
- load capacity of up to 3 kg
- your company's logo can be affixed

Material: plastic, black
Dimensions (H x W x D):
 235 x 260 x 27 mm

Order no.
640-100

Potential equalization rail 19" / 21"



- can be installed in a 19" and 21" plane
- Connection possibility: 27 x M 5
- Rail cross-section: 50 mm²

Material: sheet metal / copper
Finish: galvanised
Dimensions (H x W x D):
 44 x 535 x 19 mm

Order no.
582-030-27



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



Air conditioning technology

from page 129



Power distribution system

from page 137



Cabinet monitoring

from page 155



Cable management

from page 163



Distribution technology

from page 169



General accessories /
distribution technology

from page 177



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

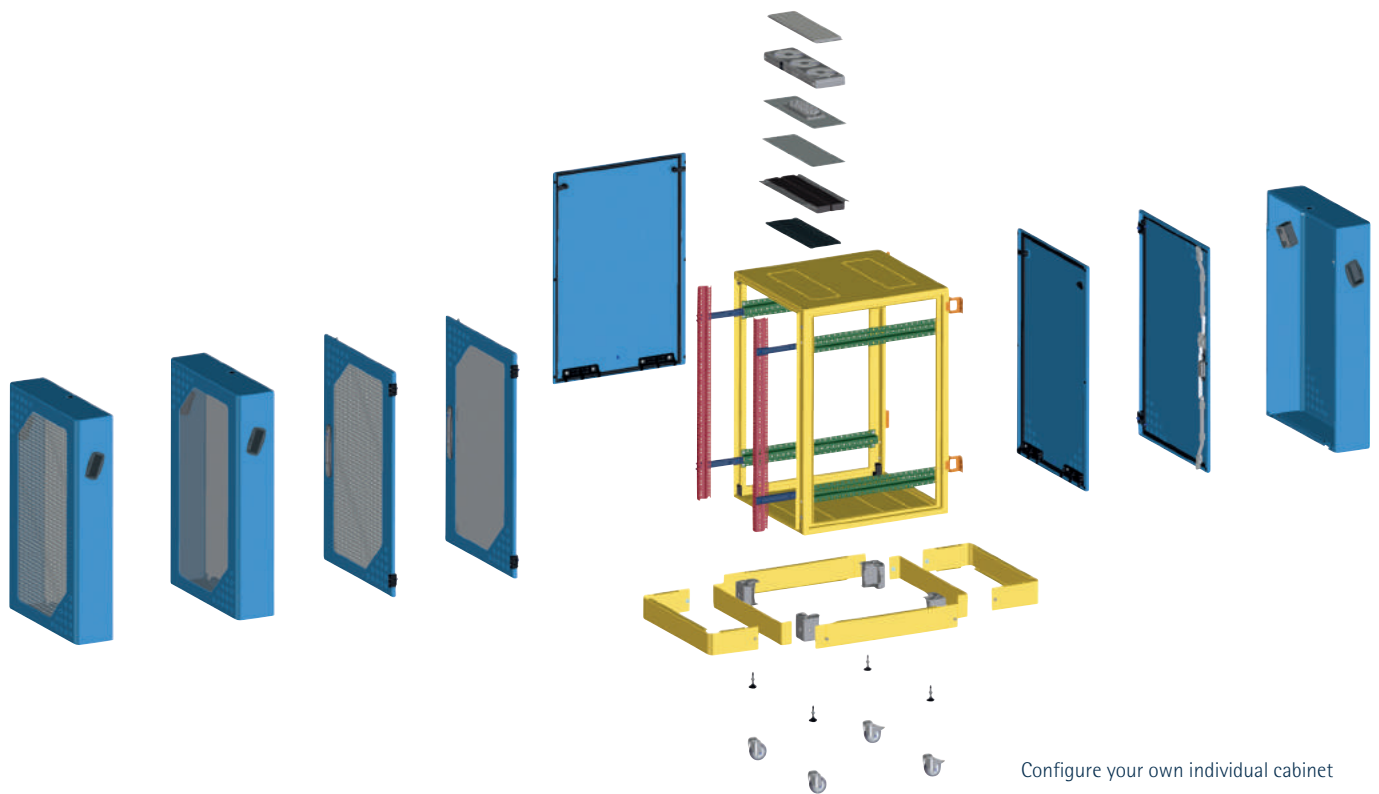


VARi IT 501

The expert for industrial and office solutions

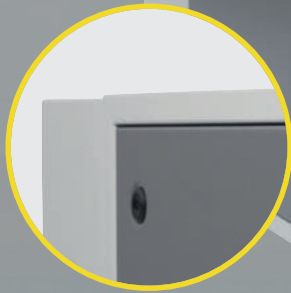
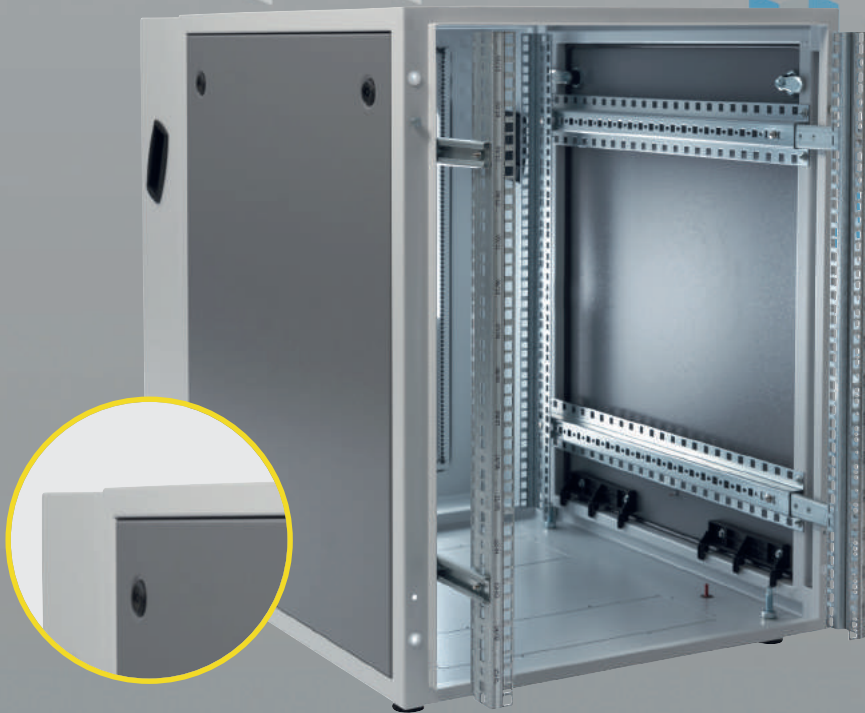
VARi IT is the flexible and visually appealing housing solution for your network applications. Removable cover parts ensure all-round accessibility and quick access to the installed 19" components. The unique option of mounting the front 19" level in combination with the use of a front cover in front of

the basic housing ensures optimum handling. The extensive portfolio of accessories and the variety of different, individually configurable housing dimensions make the VARi IT the housing for your customer-specific requirements.



VARi IT Highlights

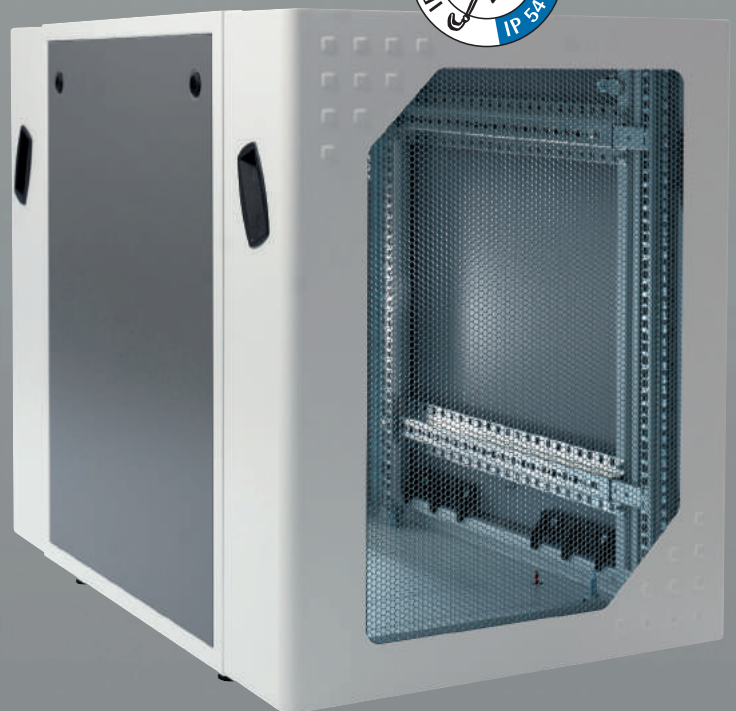
- developed for flexible Networking solutions in industrial and office applications
- available as floor-standing or wall-mounting rack
- fast and easy access due to dismantlable frame covers
- solid frame construction (welded frame)
- 19" mounting level moved to front for better access (for version with covers)
- available depths: D = 400 mm to D= 1000 mm
- pre-perforated cut-outs for easy cable entry in top & bottom
- possibility to mount fan-units in top & bottom
- door hinges interchangeable (upon request)
- doors with lever lock (profile semi cylinder optional)
- wide range of possibilities for configuration
- Protection to IP54



Two-color design



Usable as wall-mounted and free-standing distributor



flexible depth of 400 - 1000

VARi IT 501

accessible from all sides
high protection due to IP 54
flexible depth
of 400 - 1000



Wall distributor housing "400"

- Load capacity = 150 kg
- Basic housing welded, D = 400 mm
- 19 "level 9 U - 19 U, front mounted
- Glazed door with swivel lever lock
- Side walls closed
- Back wall closed
- wall mounting kit
- Cable entry in the roof and floor area possible
- Brush set for cable entry in the roof sheet / breakouts
- equipotential bonding set
- 19 "screw set M 5 (50x)

Material:

sheet metal

Finish:

Basic housing: RAL 7035 light gray

Side panels: RAL 7037 dusty gray

Delivery:

fully assembled



Dimensions H x W x D mm	U	Order no.
530 x 600 x 400	9	501-409-02
750 x 600 x 400	15	501-415-02
950 x 600 x 400	19	501-419-02

Wall distributor housing "700"

- Load capacity = 150 kg
- Basic housing welded, D = 700 mm
- 2x 19 "level 9 U - 19 U, mounted at the back and front
- Glazed door with swivel lever lock
- Side walls closed
- Back wall closed
- wall mounting kit
- Cable entry in the roof and floor area possible
- Brush set for cable entry in the roof sheet / breakouts
- equipotential bonding set
- 19 "screw set M 5 (50x)

Material:

sheet metal

Finish:

Basic housing: RAL 7035 light gray

Side panels: RAL 7037 dusty gray

Delivery:

fully assembled



Dimensions H x W x D mm	U	Order no.
530 x 600 x 700	9	501-709-15
750 x 600 x 700	15	501-715-15
950 x 600 x 700	19	501-719-15



Stand distributor "700"

- Load capacity = 500 kg
- Basic housing welded, D = 700 mm
- 2x 19" level 9 U - 19 U, mounted at the back and front
- Glazed door with swivel lever lock
- Side walls closed
- Back wall closed
- adjusting foot set
- Cable entry in the roof and floor area possible
- Brush set for cable entry in the roof sheet / breakouts
- potential equalisation set
- 19" screw set M 5 (50x)

Material:

sheet metal

Finish:

Basic housing: RAL 7035 light gray

Side panels: RAL 7037 dusty gray

Delivery:

fully assembled



Dimensions H x W x D mm	U	Order no.
530 x 600 x 700	9	501-709-02
750 x 600 x 700	15	501-715-02
950 x 600 x 700	19	501-719-02

Server cabinet "1000"

- Basic housing welded, D = 1000 mm
- 2x 19" level 9 U - 19 U, rear and front mounted, adjustable
- perforated hood front and back (T = 150 mm) with cam lock
- Side walls closed
- Adjusting foot set
- Cable entry in the roof and floor area possible
- Brush set for cable entry in the roof sheet / breakouts
- equipotential bonding set
- 19" screw set M 5 (50x)

Material:

sheet metal

Finish:

Basic housing: RAL 7035 light gray

Side panels: RAL 7037 dusty gray

Delivery:

fully assembled

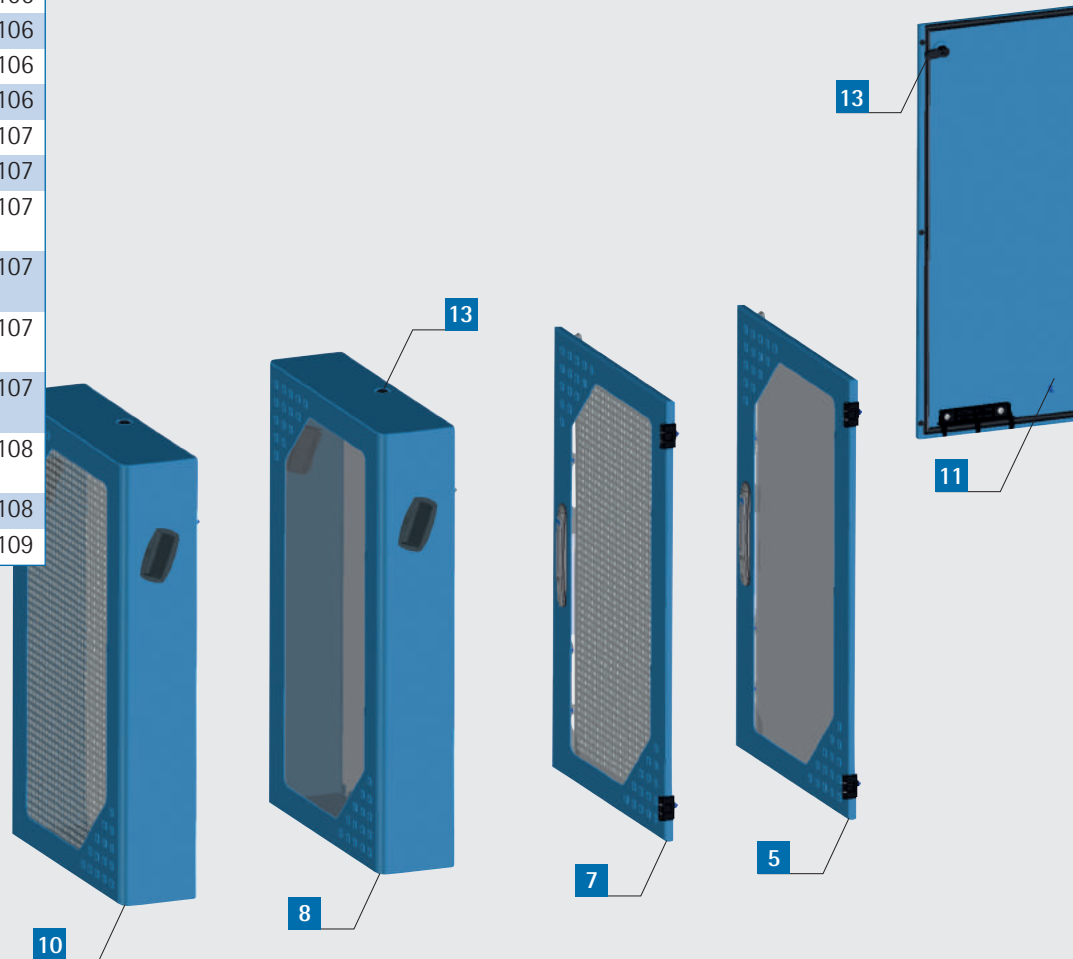


Dimensions H x W x D mm	U	Order no.
530 x 600 x 1000	9	501-709-10
750 x 600 x 1000	15	501-715-10
950 x 600 x 1000	19	501-719-10



Configure your own individual cabinet.

Item	Description	Seite
1	Base enclosure	104
2	19" vertical mounting	104
3	Reducing traverse	104
4	Reducing traverse extension	104
5	Door with safety class	105
6	Door closed	105
7	Door, perforated (83 %)	105
8	Cover with safety glass	105
9	Cover, closed	105
10	Cover, perforated (83 %)	105
11	Side wall	106
12	Rear panel	106
13	Closing systems for doors	106
14	Base	106
15	Adjusting feet (pieces)	106
16	Castor set	107
17	Wall mounting set	107
18	Brush set for flange plate opening	107
19	Cable plate with rubber insert	107
20	Cable flange plate, solid (IP 54)	107
21	Cable flange plate, ventilated	107
22	Cover panel with multi gland plate (IP 54)	108
23	Ventilation unit	108
24	Filter set	109

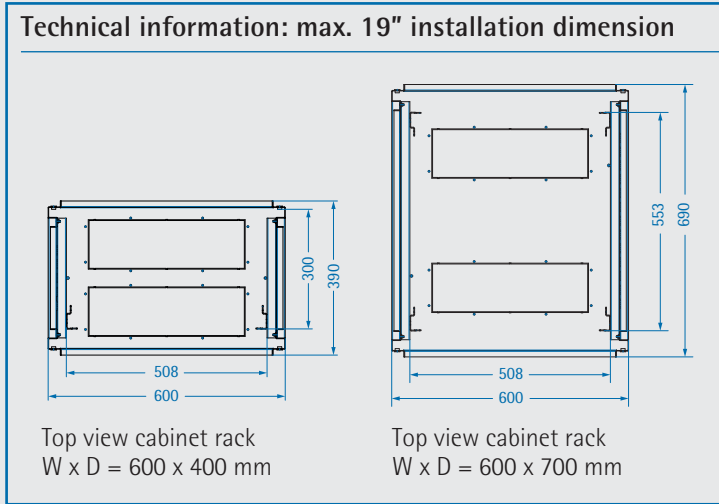




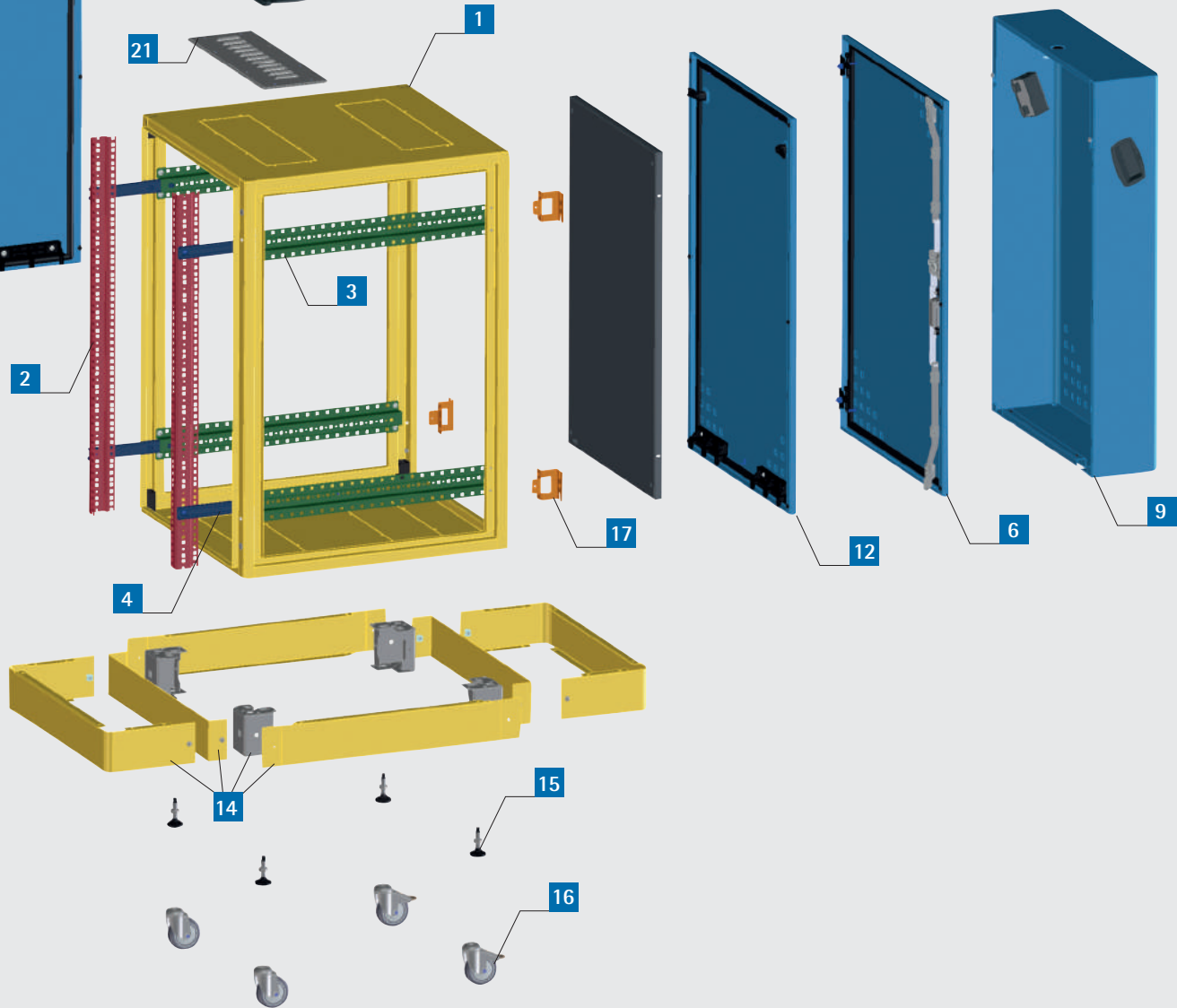
19" floor-standing / wall-mounted enclosure VARi IT • 501



Select step by step the cabinet components you need.



- 24
- 23
- 22
- 20
- 19
- 18
- 21

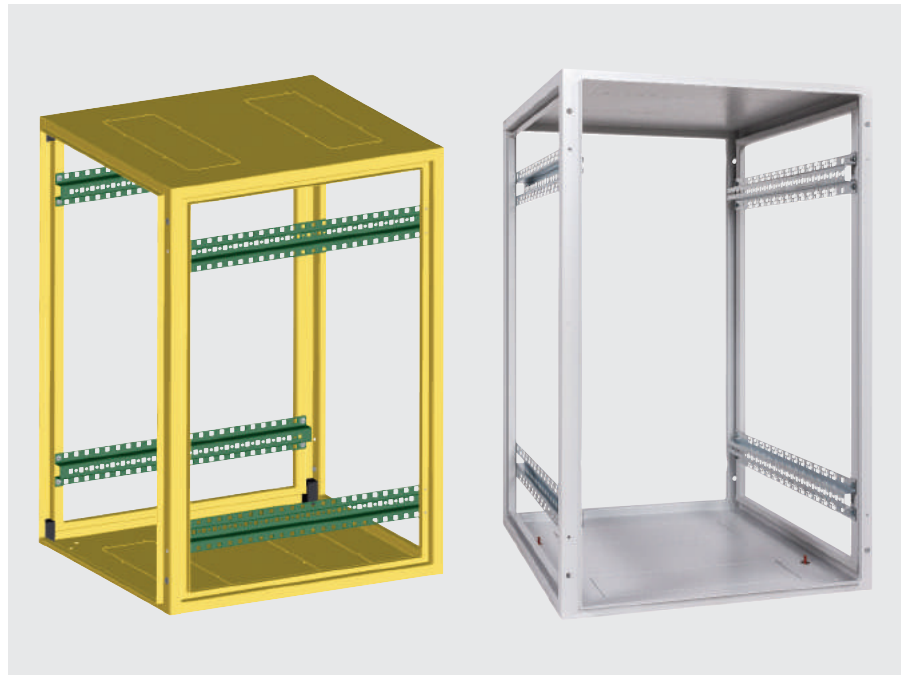




1 Base enclosure

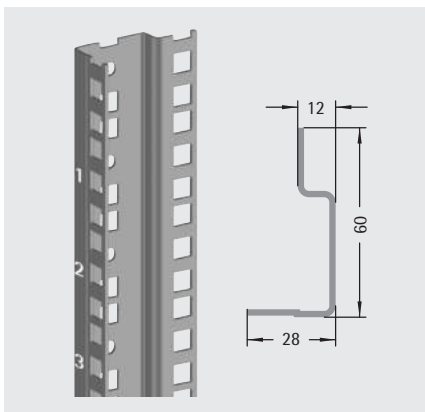
The solid base enclosure consists of a welded frame with pre-perforated cut-outs for cable entry and ventilation units in top & bottom. Four pre-installed reducing traverses for the installation of the 19" vertical mounting frames.

Material: sheet metal
Finish: RAL 7035 light grey
Delivery: assembled



Dimensions (H x W x D) mm	U	Order no.
530 x 600 x 400	9	501-409-00
530 x 600 x 700	9	501-709-00
750 x 600 x 400	15	501-415-00
750 x 600 x 700	15	501-715-00
950 x 600 x 400	19	501-419-00
950 x 600 x 700	19	501-719-00

2 19" vertical mounting

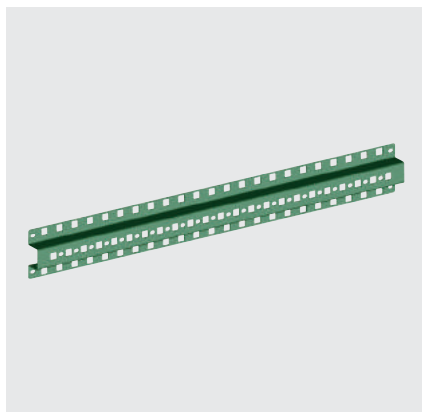


- ASA perforation
- printed U steps

Material: sheet metal
Finish: galvanised

U	Order no.
9	316-120-09
15	316-120-15
19	316-120-19

3 Reducing traverse

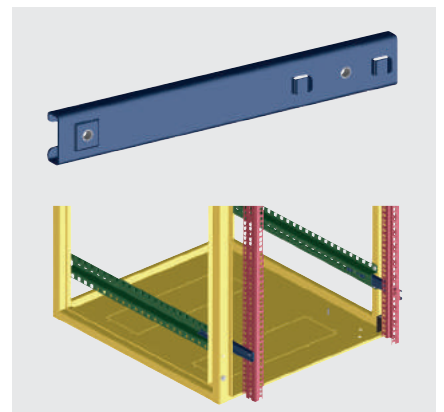


- for mounting on the base enclosure
- for variable depth installation of 19" vertical mountings

Material: sheet metal
Finish: galvanised

D mm	Order no.
400	501-002-20
700	501-002-25

4 Reducing traverse extension



- for mounting on the reducing traverse
- for variable depth installation of 19" vertical mountings

Material: sheet metal
Finish: galvanised

Order no.
501-002-30



5 Door with safety glass



- with lever lock
- optional with profile semi-cylinder (40 mm)

Material: sheet metal
Finish: RAL 7035 light grey

Dimensions (HxB) mm	U	Order no.
530 x 600	9	501-609-01
750 x 600	15	501-615-01
950 x 600	19	501-619-01

6 Door, closed



- with lever lock
- optional with profile semi-cylinder (40 mm)

Material: sheet metal
Finish: RAL 7035 light grey

Dimensions (HxB) mm	U	Order no.
530 x 600	9	501-609-02
750 x 600	15	501-615-02
950 x 600	19	501-619-02

7 Door, perforated (83%)



- with lever lock
- optional with profile semi-cylinder (40 mm)

Material: sheet metal
Finish: RAL 7035 light grey

Dimensions (HxB) mm	U	Order no.
530 x 600	9	501-609-16
750 x 600	15	501-615-16
950 x 600	19	501-619-16

8 Cover with safety glass



- with sash fastener on top (standard 5 mm double-bit)
- optional with profile lock

Material: Aluminium
Finish: RAL 7035 light grey

Dimensions (H x W x D) mm	U	Order no.
530 x 600 x 150	9	501-609-21
750 x 600 x 150	15	501-615-21
950 x 600 x 150	19	501-619-21

9 Cover, closed



- with sash fastener on top (standard 5 mm double-bit)
- optional with profile lock

Material: Aluminium
Finish: RAL 7035 light grey

Dimensions (H x W x D) mm	U	Order no.
530 x 600 x 150	9	501-609-22
750 x 600 x 150	15	501-615-22
950 x 600 x 150	19	501-619-22

10 Cover, perforated (83%)



- with sash fastener on top (standard 5 mm double-bit)
- optional with profile lock

Material: Aluminium
Finish: RAL 7035 light grey

Dimensions (H x W x D) mm	U	Order no.
530 x 600 x 150	9	501-609-26
750 x 600 x 150	15	501-615-26
950 x 600 x 150	19	501-619-26



11 Side wall



- with 2 sash fasteners (standard 5 mm double-bit)

Material:
sheet metal
Finish:
RAL 7037 dusty grey

Dimensions (HxB) mm	U	Order no.
530 x 400	9	501-409-03
530 x 700	9	501-709-03
750 x 400	15	501-415-03
750 x 700	15	501-715-03
950 x 400	19	501-419-03
950 x 700	19	501-719-03

12 Rear panel

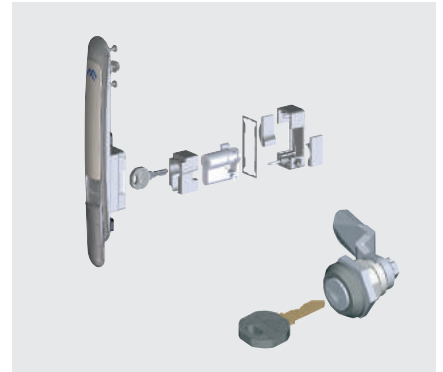


- with 2 sash fasteners (standard 5 mm double-bit)

Material:
sheet metal
Finish:
RAL 7037 dusty grey

Dimensions (HxB) mm	U	Order no.
530 x 600	9	501-609-03
750 x 600	15	501-615-03
950 x 600	19	501-619-03

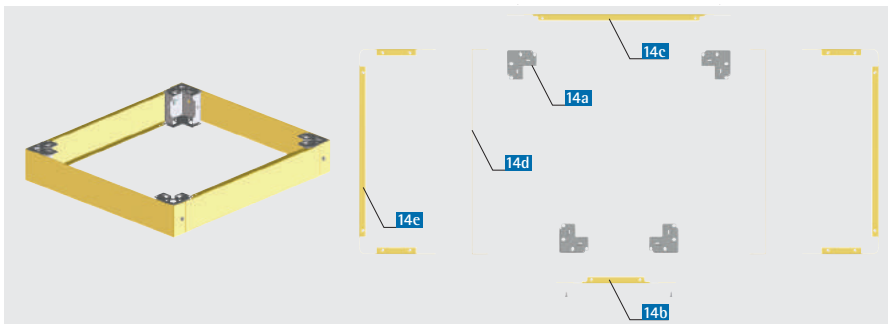
13 Closing systems for doors



- **profile semi-cylinder** L=40mm with EK 333 closing for turning lever lock on doors
- **adapter** for installing a profile semi-cylinder with L=40 mm acc. to DIN 18252
- **cylinder sash fastener** with EK333 closing for locking side walls, rear walls or covers

Description	Order no.
Profile half cylinder	676-316-00
Adapter	676-316-10
cylinder sash fastener	676-181

14 Base

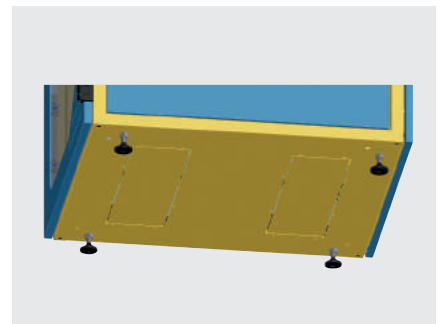


- for mounting on base enclosure
- incl. mounting material

Material:
sheet metal
Finish:
Base panels: RAL 7035 light grey
base corners: galvanised

Item	Dimensions	Size	Number of	Order no.
14a	Base corners	H = 100 mm	4 Pc.	501-100-00
14b	Base panel lateral	D = 400 mm	1 Pc.	501-100-10
14c	Base panel lateral	D = 700 mm	1 Pc.	501-100-20
14d	Base panel for door	W = 600 mm	1 Pc.	501-100-30
14e	Base panel for cover	W = 600 mm	1 Pc.	501-100-40

15 Adjusting feet (pieces)

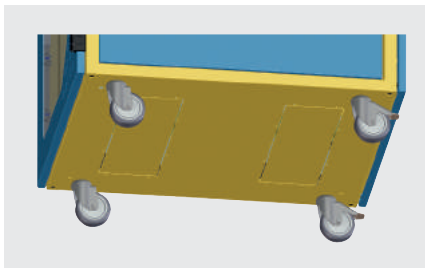


- for mounting on enclosure or base
- height 25 mm
- adjusting range approx. 20 mm
- incl. mounting material

Dimensions	Order no.
Mounting on enclosure	500-550-00
Mounting on base	318-026-02



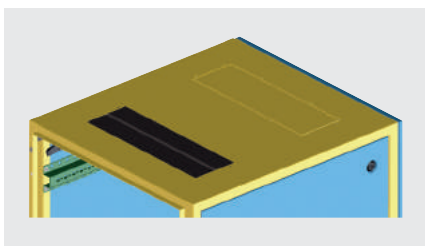
16 Castor set



- for mounting on enclosure
- packing unit: 4 pieces (2 with brakes)
- height 105 mm
- max. load: 250 kg
- incl. mounting material

Order no.
500-330-10

19 Cable plate with rubber insert



- for mounting in cut-outs from inside of enclosure
- consisting of 2 clamping brackets and 2 foam profiles
- incl. mounting material

Material:

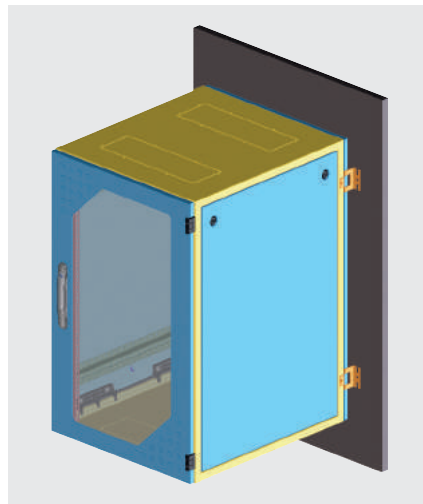
brackets: sheet metal
foam profiles: polyurethane foam
UL94 HF1

Finish:

brackets: galvanised
foam profiles: anthracite

Order no.
501-002-80

17 Wall mounting set



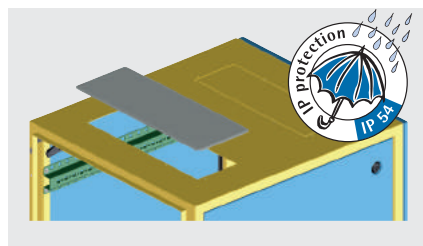
- for mounting on enclosure
- packing unit: 4 holders
- incl. mounting material

Material: sheet metal

Finish: galvanised

Order no.
501-099-00

20 Cable flange plate, solid



- to cover break-outs for cable entry
- completely closed incl. sealing (IP54)
- incl. mounting material

Material:

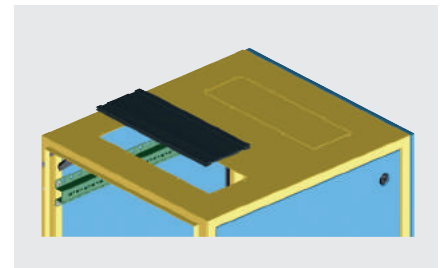
sheet metal

Finish:

RAL 7035 light grey

Order no.
501-002-50

18 Brush set for flange plate opening



- for mounting in the break-outs (top & bottom) of the enclosure
- consisting of 2 brush strips to be fixed in the break-out

Material:

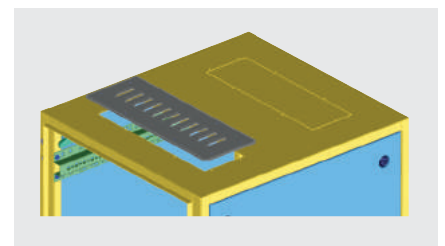
TPE, PA6 UL94 HB

Colour

black

Order no.
316-111-10

21 Cable flange plate, ventilated



- to cover break-outs for cable entry
- with slots for passive ventilation
- incl. mounting material

Material:

sheet metal

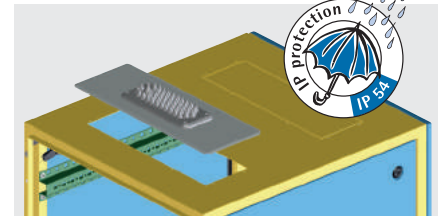
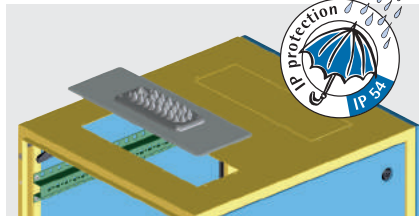
Finish:

RAL 7035 light grey

Order no.
501-002-55



22a/22b Cover panel with multi gland plate



- for mounting in break-outs
- incl. multi cable gland plate for installation of different cable diameters (IP54 / see table)
- mounting material included

Material:

cover plate: sheet metal
 cable gland: reinforced plastic compound, UL94 V0

Finish:

cover: RAL 7035 light grey

Number	cablе-Ø
2	3,5 - 11 mm
5	10 - 14 mm
12	14 - 18 mm
5	14 - 22 mm
1	14 - 35 mm

Number	cablе-Ø
50	7 - 13 mm
1	15 - 25 mm

Description	Order no.
Cover Plate Type 1	501-002-70

Description	Order no.
Cover Plate Type 2	501-002-75

23 Ventilation unit



- pre-configured ventilation unit (plug & play)
- for mounting in break-outs in top & bottom
- different versions available (see table below)

Material:

Polycarbonate, UL94 V-0

Dimensions (H x W x D):

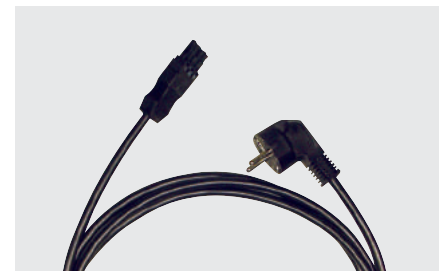
44 x 450 x 140 mm

The fan characteristics and noise levels can be found in the diagrams on page 133.

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

Description	Unimpeded air flow	Basic module	Extension module
Fan module 1-way	115 m³/h	230-500-01	230-500-11
Fan module 2-way	120 m³/h	230-500-02	230-500-12
Fan module 3-way	345 m³/h	230-500-03	230-500-13
Fan module "silent"	240 m³/h	230-500-43	-

Power cord standard, L= 3 m



Type of connection	Order no.
Earthing-pin	640-044-05
IEC connector	230-500-15
Without plug for fixed connection	230-500-16

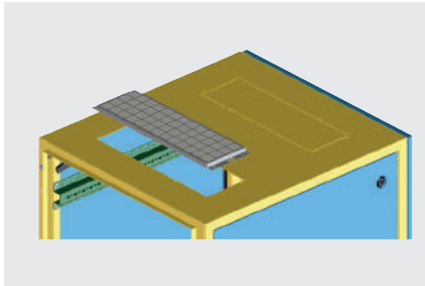
Power cord with thermostat 0-60 °C, L= 3 m



Type of connection	Order no.
Earthing-pin	230-500-04
IEC connector	230-500-05
Without plug for fixed connection	230-500-06



24 Filter set



- for mounting on the break-outs or ventilation unit
- consisting of: holder and filter fleece, incl. mounting material

Material:

frame: sheet metal

filter: polyester, fire class F1

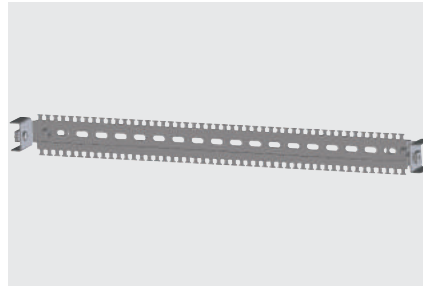
Finish:

Frame: galvanised

filter: untreated

Description	Order no.
Filter set	501-002-85
spare filters, 5x	671-200-05

Cable clamp rail set VARI IT



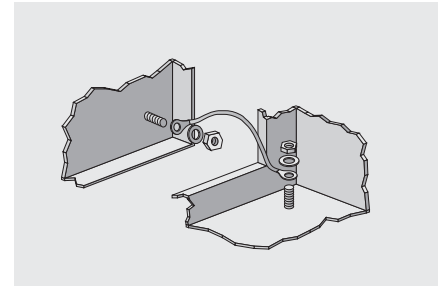
- for direct mounting on the 19" level or depth-variable (via adapter brackets) between the depth struts of the VARI IT
- for inserting clamp clips
- including mounting material

Finish:

galvanised

Order no.
501-002-35

equipotential bonding set VARI IT



- earthing in compliance to VDE
- for conductive connection of cabinet parts (cable dia. 2,5mm²)
- plug-connector on side covers, screwed connection on rack frame

Order no.
501-150-00

Document pocket



- self-adhesive
- heat-resistant up to 60 °C
- load capacity of up to 3 kg
- your company's logo can be affixed

Dimensions H x W x D:

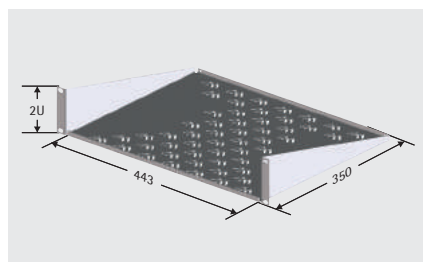
235 x 260 x 27 mm

Material:

plastic, black

Order no.
640-100

19" shelf 2U



- simple assembly on a 19" grid (only one 19" level required)
- ventilated
- Footprint: 443 x 350 mm

Material:

sheet metal

Finish:

RAL 7035 light grey

Load capacity:

15 kg (distributed load)

Dimensions (H x W x D):

2 U (88 mm) x 19" (482,6 mm) x 350 mm

Floor space (w x d):

443 x 350 mm

Order no.
315-810-20

19" Cable management panel



- for horizontal cable guiding
- incl. 4 cable hoops

Material:

sheet metal / metal

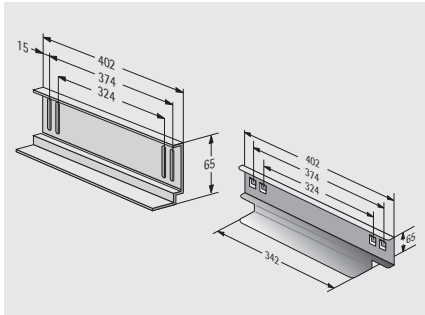
Finish:

powder coated, RAL 7035 (light grey) / chrome-plated

U	Colour	Order no.
1	RAL 7035	213-145-41
1	RAL 9005	213-145-42
2	RAL 7035	213-145-43
2	RAL 9005	213-145-44



Sliding rails (screwable / hook-in)



- for screwing/hinging into vertical mountings
- for placing heavy 19" plug-ins
- 2 vertical mountings are required for fixing
- Delivery: 1 pair

Material:

sheet metal, galvanized

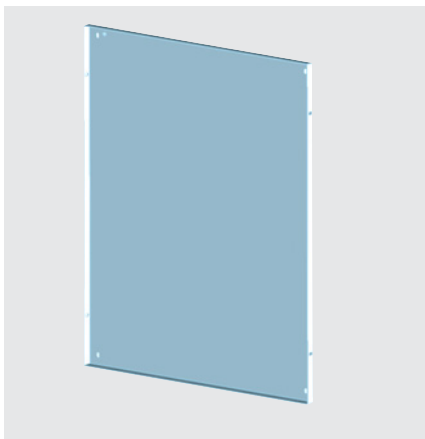
Load capacity:

50 kg

Not suitable for hoods **8 9 10**

Description	Order no.
screwable	312-544
hook-in	316-544-00

Mounting plate



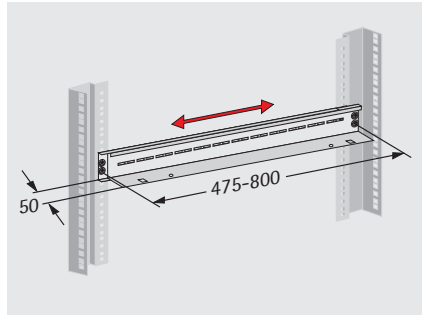
- for attaching e.g. DIN rail
- can be mounted between the depth traverses or on a 19" level

Material:

sheet metal, galvanized

U	H mm	Order no.
9	530	501-100-69
15	750	501-100-70
19	950	501-100-71

Slide rail, variable depth



- for 19" plug-in units irrespective of the clearance to the 19" levels
- depth-adjustable
- for use as of a cabinet depth of 800 mm
- Delivery: 1 pair

Material:

sheet metal 1,5 mm, galvanized

Load capacity:

50 kg

Order no.
316-544-20

Door switch kit



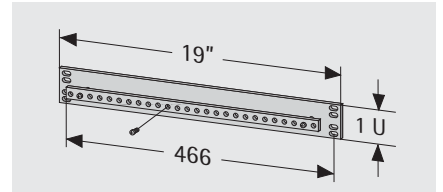
- for direct mounting at the deep trusses
- for switching on or off, e.g. cabinet lights

Delivery:

mounting material included

Order no.
501-002-37

19" potential equalisation



- for 19" or cabinet frame mounting
- connection: 27 x M 5
- cross-section: 50 mm²

Material: sheet metal, copper

Order no.
640-028-00

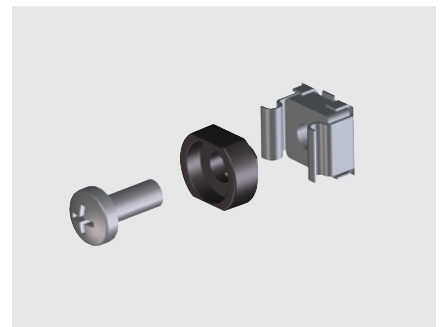
19" multiple socket 1 U



- sturdy aluminium case
- 9 sockets
- length: 440 mm
- connection line: 3 x 1,5 mm / L = 2 m
- 230 V, 50 Hz

Order no.
591-400-00

Screw set M 5 / 6 (50x)



- necessary for mounting of 19" components into racks or enclosures
- included in delivery:
 - 50 oval head screws M 5 x 12
 - 50 cage nuts M 5 - 8
 - 50 decorative washers M 5

Material:

steel, polyamide

Description	Order no.
Screw set M 5	630-991
Screw set M 6	630-994
Torx M6	350-001-20



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



Air conditioning technology

from page 129



Power distribution system

from page 137



Cabinet monitoring

from page 155



Cable management

from page 163



Distribution technology

from page 169



General accessories / distribution technology

from page 177



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

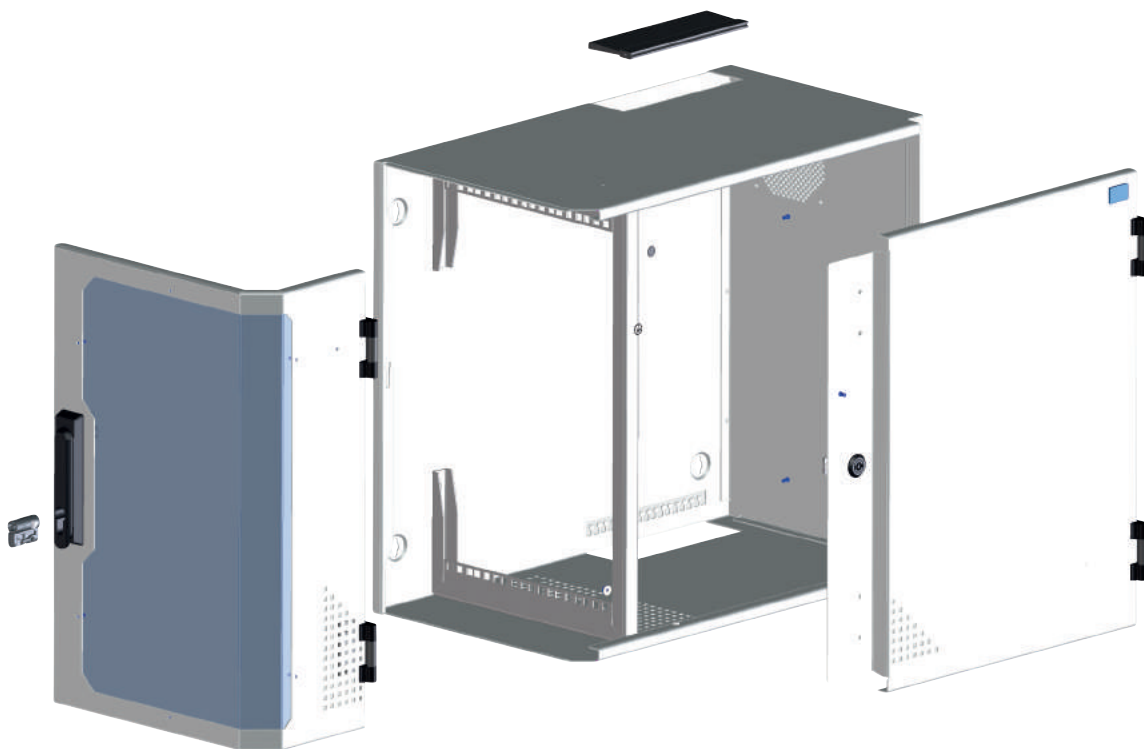


VARi 2000

THE REVOLUTION IN WALL ENCLOSURE TECHNOLOGY

The patent-protected wall-mounted enclosure provides you with a visually appealing and space-saving enclosure solution for your network cabling.

The conciseness of these housings lies in the construction, the 19" plane perpendicular to the wall to lay, so that the device installation depth does not project into the room



VARi 2000 Highlights

elegantes Design

Vertical 19"-plane

space-saving due to the small construction of the wall compared to standard wall housings

Installation also in a corner of a room or wall niche with full accessibility to the inside of the housing

With the 180° hinge, the VARi 2000 can also be installed in room corners with a full 19" opening.

Combined folding of the front and side door (profile half cylinder locking possible)

separate access authorisations for front and side door for 6 U and 12 U versions

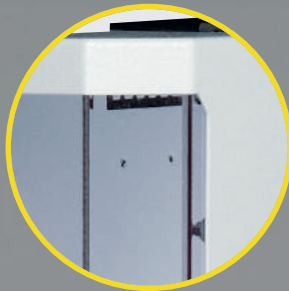
Simple climate solutions

Cable entry with integrated strain relief possible from above and below

Installation dimensions to IEC 60297-3-100



Swing lever lock from 6 U



Tinted inspection door

VARI 2000

elegant design
vertical 19"- plane
low wall construction



VARI 2000 4 U



VARI 2000 with split front and side door



180° opening angle



space-saving with single-leaf door (4 U / 6 U)



19" wall-mounting enclosure VARI 2000

The patented wall-mounted enclosure allows you the visually appealing and space-saving enclosure solution for your network cabling.

The conciseness of these housings lies in the design of laying the 19" plane vertically against the wall so that the device installation depth does not protrude into the room.

Application:

space-saving, wall-mounting enclosure for network cabling

Construction:

Robust spot-welded and powder-coated sheet steel construction

Material:

sheet metal / plastic

Finish:

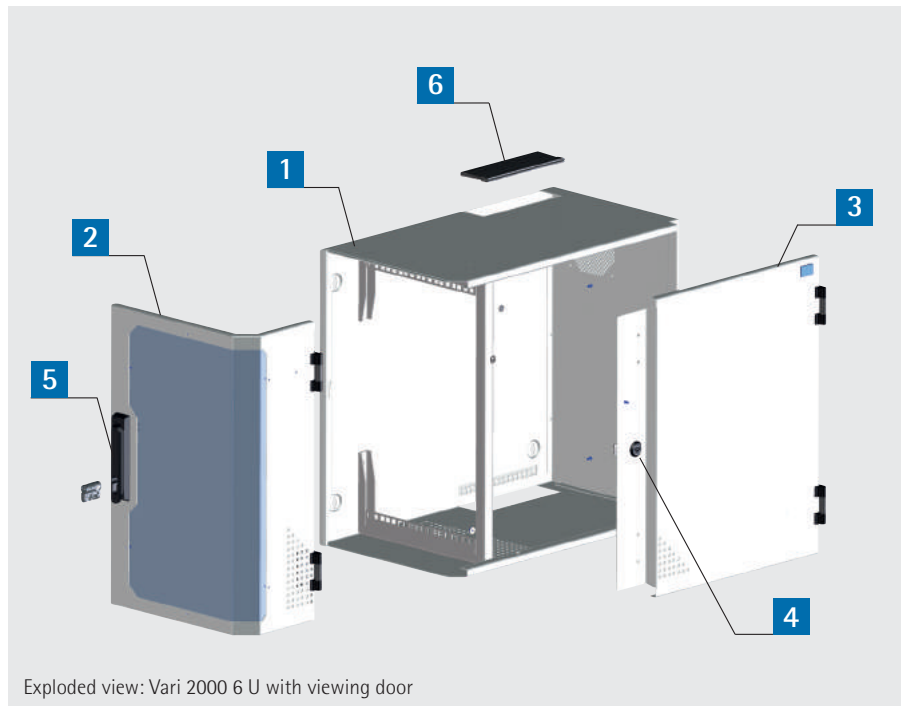
RAL 7035 light grey

Delivery:

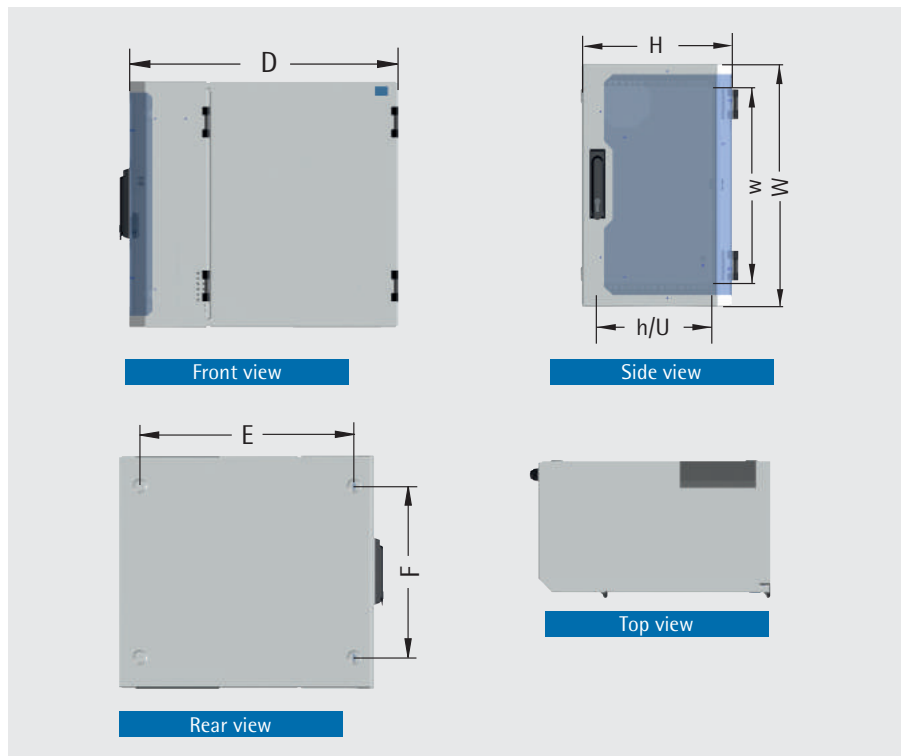
assembled (complete with earthing)

Standard

Installation dimensions to IEC 60297-3-100



Exploded view: Vari 2000 6 U with viewing door



Delivery

Item	4 U	6 U	12 U	Description
1	1	1	1	Enclosure chassis
2	1	1	1	Door with acrylic glass pane / steel metal door
3	-	1	1	Door, solid
4	-	1	1	Turning lever lock
5	2	2	4	Sealing brush, W=210 mm
6	1	1	1	Mounting material

The 12 U wall mounting enclosure is based on two 6 U 19" fastening levels which are stacked under each other. The enclosure height H therefore remains low.

Description	Property	Dimensions (H x W x D) mm	Usable installation dimensions (hxwx d) mm	Fixing Material (E x F) mm	Order no.
VARI 2000 4 U	Enclosure with single-leaf door	230 x 506 x 536	177 x 450 x 383	410 x 360	213-031-00
VARI 2000 6 U		360 x 557 x 636	267 x 450 x 475	510,5 x 408,5	213-032-60
VARI 2000 6 U	Housing with two-part door	360 x 557 x 636	267 x 450 x 475	510,5 x 408,5	213-032-00
VARI 2000 12 U		360 x 1103 x 636	267 x 2x450 x 475	510,5 x 954,5	213-034-00



Mounting plate



- mounting plate for rear wall
- for mounting outlets/terminal boxes or other accessories

Finish:
galvanised

Order no.
213-030-20

Power strip (3-way)



- with overvoltage protection
- power cord (2.0 m) with earthing-pin plug
- attach to the rear wall of the enclosure
- length 335 mm

Order no.
591-200-00

Module "plug and play"



- temperature-controlled fan
- power strip, 3 sockets with overvoltage protection
- junction box
- power cord (2.0m) with earthing-pin plug
- protective equipotential bonding set

Order no.
213-030-41

Shelf 1 U, vertical



- for installation of **non-19"-compatible** components
- depth: 250 mm

Finish:
RAL 7035 light grey

Order no.
213-030-22

19" cable routing panel 1 U

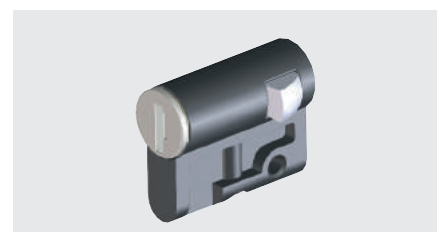


- with 4 cable entry clamps made of metal
- for clear, neat and horizontal cable entry at the 19" level
- includes mounting material

Finish:
RAL 7035 light grey

Order no.
213-145-41

Profile half cylinder

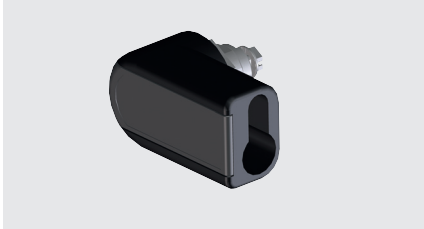


- for 6 U and 12 U enclosures **(double-leaf door)**
- for retrofitting to lockable doors
- 2 keys included
- cylinder according to DIN 18252 (EN 1303)

Order no.
676-062



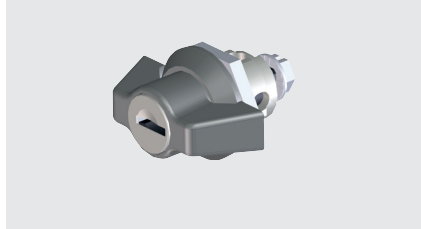
Slider for profile half cylinders



- for holding semi-cylinders according to DIN 18252 (EN 1303)
- for retrofitting to semi-cylinder locking in the version with single-leaf door (4/6 U)
- L = 40 mm

Order no.
676-110-01

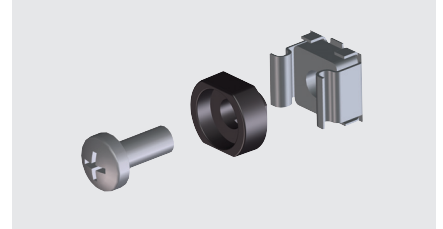
Pivoting lever lock



- for profile key locking for **single-leaf** door design 4 U /6 U variants

Order no.
676-197

19" Screw set M5 (50x)



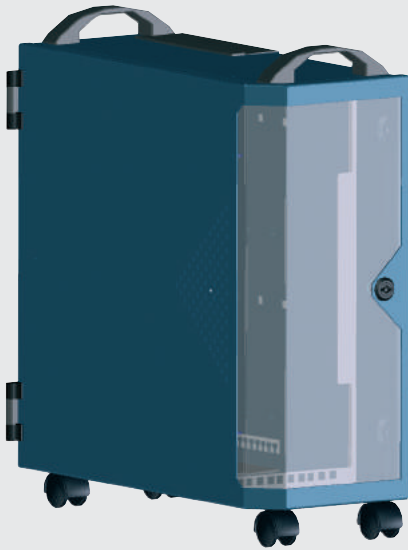
- necessary for mounting of 19" components into racks or enclosures
- included in delivery:
 - 50 oval head screws M 5 x 12
 - 50 cage nuts M 5 - 8
 - 50 decorative washers M 5

Order no.
630-991

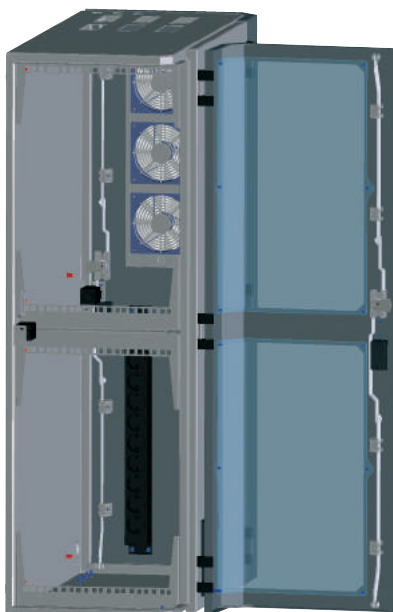


Housing for Small Office / Home Office

- applicable as wall-/ standing- and roll housing
- Basis VARI 2000, 4 U
- expandable with active ventilation - plug & play



Wall enclosure for industrial environments (IP 54)



- Basis VARI Industry 12 U (2 x 6 U)
- modified for the inclusion of active and passive network technology
- Delivery as plug & play solution

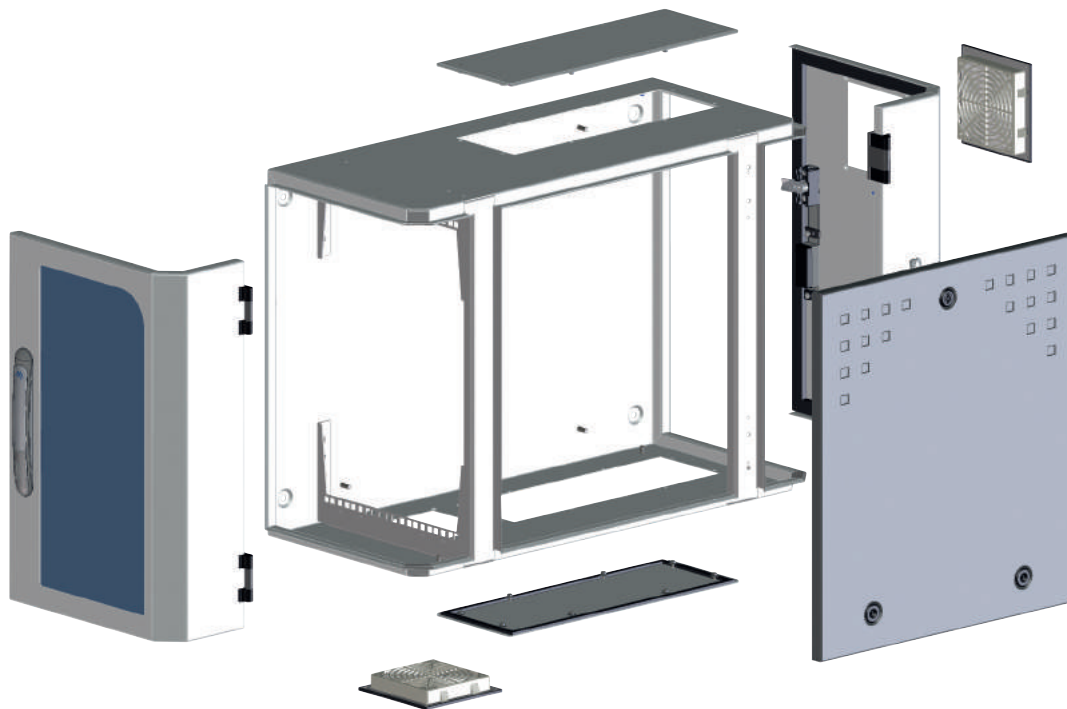


VARI Industry 2.0

WALL HOUSING TECHNOLOGY FOR EXTREME CONDITIONS

The visually striking and stylish enclosure is ideal for use as a compact switch cabinet solution or for network cabling in tougher environments. The high degree of protection (IP 54) and the stable structure of the enclosure protect your installations to optimum effect against dust, moisture and mechanical influences.

Enclosure height remains low due to vertical layout of 19" attachment level. The front and rear doors plus detachable front cover ensure optimum accessibility. Upper and lower cable flange plates enable the cable entry into the enclosure.



VARI Industry Highlights

Two-Color Design

Vertical 19"-plane

Space-saving compared to standard wall housings due to the low construction of the wall

Front and rear door with 180° hinge:
can also be used in room corners at full 19" opening
be installed

Semi-cylinder lock possible

Protection class IP 54

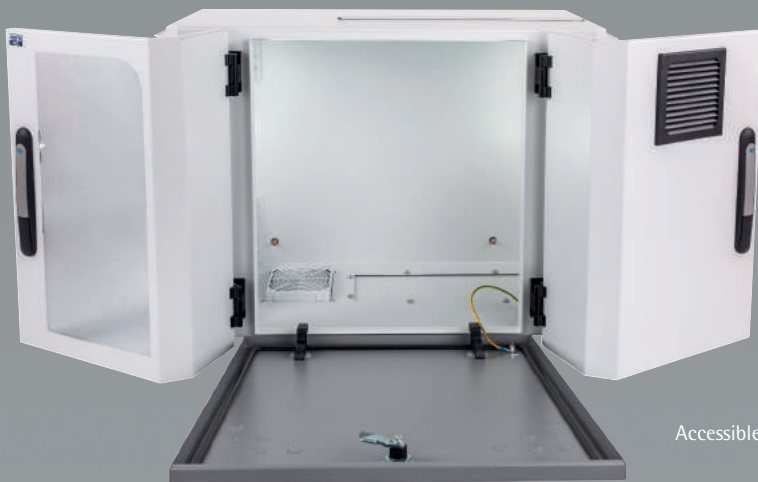
Air conditioning options via fan or air conditioner

Cable entry from above and below possible

Installation dimensions to IEC 60297-3-100



Two-color Design



Accessible from all sides



VARiindustry

Two-Color Design, accessible from all sides, vertical 19"-plane



Swing lever lock





VARI Industry

Application:

Use as wall-mounting enclosure for tight spaces and unfavourable environmental conditions such as high humidity and dust

Construction:

sturdy spot-welded and powder-coated sheet metal construction

Finish:

RAL 7035 light grey / RAL 7037 dusty grey

Protection class:

IP 54

Load capacity:

70 kg (static)

Standards:

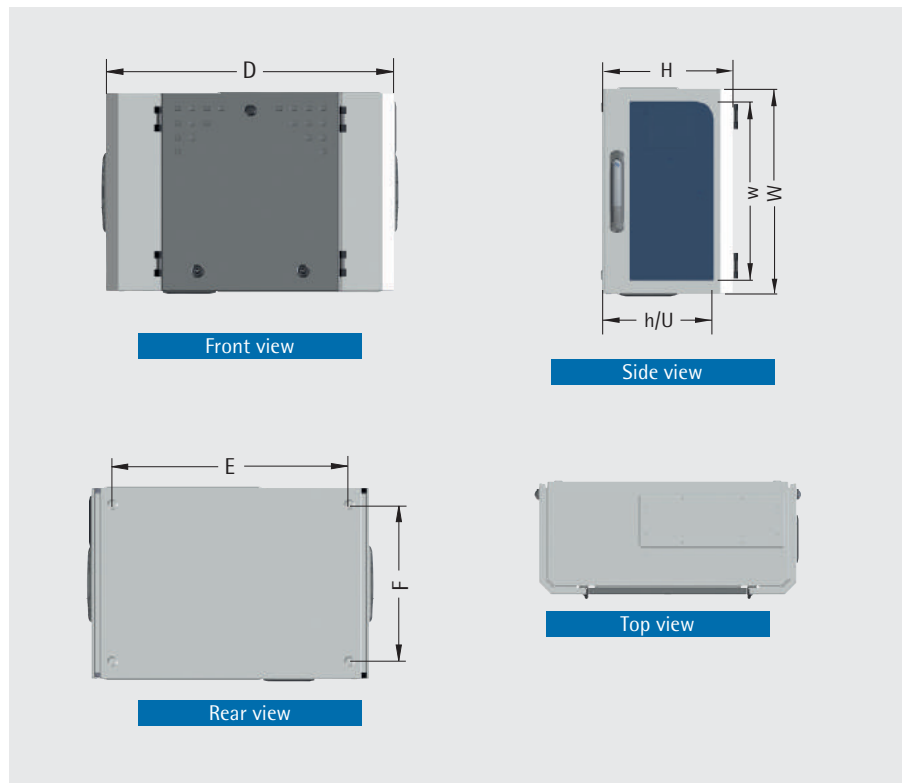
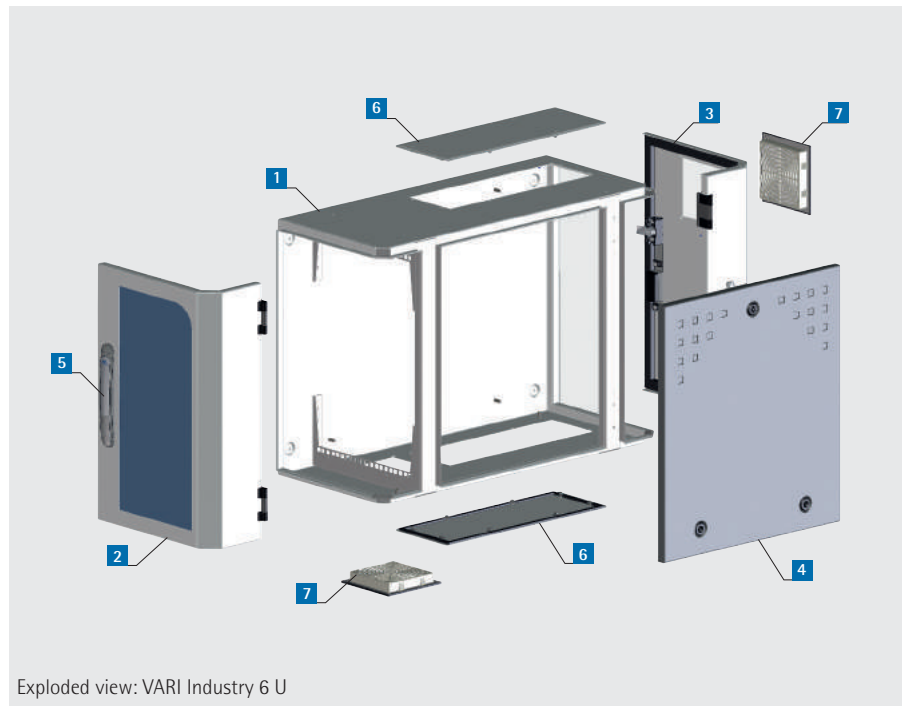
Installation dimensions to IEC 60297-3-100

Delivery:

assembled
Wall mounting dimensions

Delivery

Item	pc.	Description
1	1	Enclosure chassis
2	1	Door with plexiglas pane
3	1	Door with cutout for fans
4	1	Front cover, detachable
5	2	Turning lever locks with tipp button opening
6	2	Cable flange plates
7	2	Outlet filter, IP 54, for 119 x 119mm fans
	1	Mounting material



Description	Outer dimensions (H x W x D) mm	Usable installation dimensions (h x w x d) mm	Wall mounting dimensions (E x F) mm	Order no.
VARI Industry 4 U	275 x 560 x 840	177 x 449 x 650	680 x 450	306-040-80
VARI Industry 6 U	365 x 560 x 840	267 x 449 x 650	680 x 450	306-060-80



VARI Industry "cool box" 6 U

- air-conditioned wall-mounting enclosure for industrial environments
- 380 W cooling unit can be assembled on the detachable front cover

Finish:

RAL 7035 light grey / RAL 7037 dusty grey

Dimensions (H x W x D):

522 mm x 560 mm x 840 mm

Degree of protection:

IP 54

Delivery:

prepared for mounting of cooling unit
(cooling unit included in delivery)



Sample configuration · Colouring does not correspond to standard colours.

Order no.
306-060-20





Power strip (3-way)



- with overvoltage protection
- power cord (2.0m) with earthing-pin plug
- attach to the rear wall of the enclosure
- length 335 mm

Order no.
591-200-00

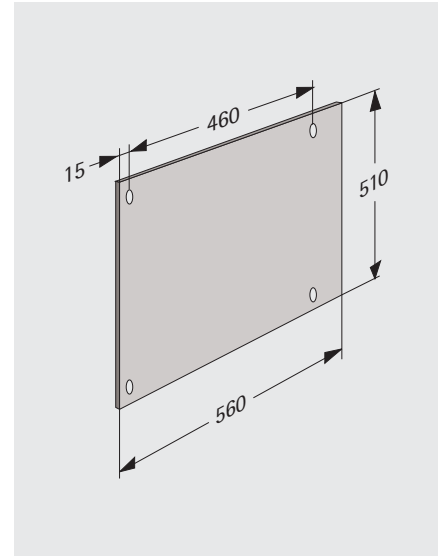
Module "plug and play"



- temperature-controlled fan
- power strip, 3 sockets with overvoltage protection
- junction box
- power cord (2.0m) with earthing-pin plug
- protective equipotential bonding set

Order no.
213-030-41

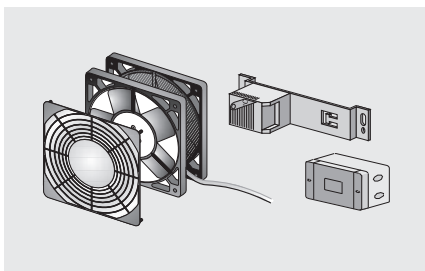
Mounting plate



- for mounting of components
 - includes mounting material
- Finish:**
galvanised

Order no.
306-060-70

Fan set



- Fan set consisting of:
- fan, 230 V, 160 m³/h, 41 dB(A)
 - fan guard
 - outlet
 - thermostat, 0-60°C
- Delivery:**
assembly set with mounting mat.

Order no.
306-060-15

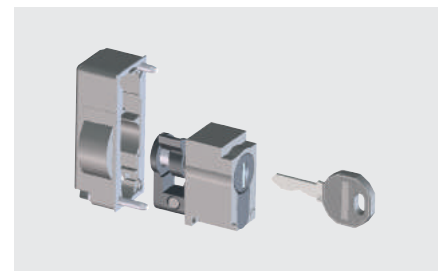
Pivoting lever lock



- for profile key lock of the front cover

Order no.
676-197

Profile semi-cylinder 45°



- Profile half cylinder with lock EK 333 for pivoting lever lock
- for retrofitting on lockable doors with key
- including 2 keys

Order no.
676-316-00



Cover panel with multi gland plate



- for mounting in break-outs
- incl. multi cable gland plate for installation of different cable diameters (IP54 / see table)
- incl. mounting material

Number	cabl-Ø
2	3,5 - 11 mm
5	10 - 14 mm
12	14 - 18 mm
5	14 - 22 mm
1	14 - 35 mm

Description	Order no.
Cover Plate Type 1	501-002-70

Number	cabl-Ø
50	7 - 13 mm
1	15 - 25 mm

Description	Order no.
Cover Plate Type 2	501-002-75

Material:

cover plate: sheet metal
 cable gland: reinforced plastic compound, UL94 V0

Finish:

cover: RAL 7035 light grey

"Universal" velcro strip



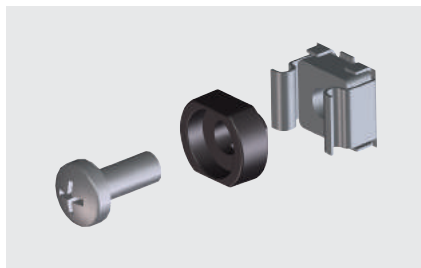
- for quickly securing **non 19"-compatible** components
- length: 300 mm, width: 20 mm
- back to back mounting
- set = 10 pieces

Material:

velcro, black

Order no.
671-122-08

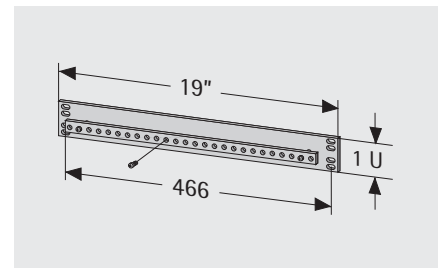
Screw set M 5 / M 6 (50-fold)



- necessary for mounting of 19" components into racks or enclosures
- included in delivery:
 - 50 oval head screws M 5 x 12
 - 50 cage nuts M 5 - 8
 - 50 decorative washers M 5

Description	Order no.
M 5	630-991
M 6	630-994

19" Potential equalisation bar 1 U



- for 19" or cabinet rack installation
- connection options: 27 x M 5
- rail cross-section: 50 mm²

Material:

sheet steel, copper

Order no.
640-028-00



350 • optiRACK wall-mounting enclosure

optiRACK

The optiRACK wall mounting/stand-alone enclosure makes networking installations simple, since the detachable door and side panels enable optimum accessibility inside the enclosure. Cabling can therefore be performed in the open rack. The two-coloured design and the chamfered front upgrade its appearance significantly. The standard colour of the design profile is RAL 5014 (pigeon blue); other colours may be supplied on request.

- protection class IP 20
- stylish enclosure solution
- optimum accessibility
- installation in just a few steps
- the coloured profile may be used as thematic coding. Through the use of coloured profiles in corporate colours, corporate identity can also be expressed in the network installation.

Application:

space-saving wall-mounting enclosure for network cabling

Material:

sheet steel

Finish:

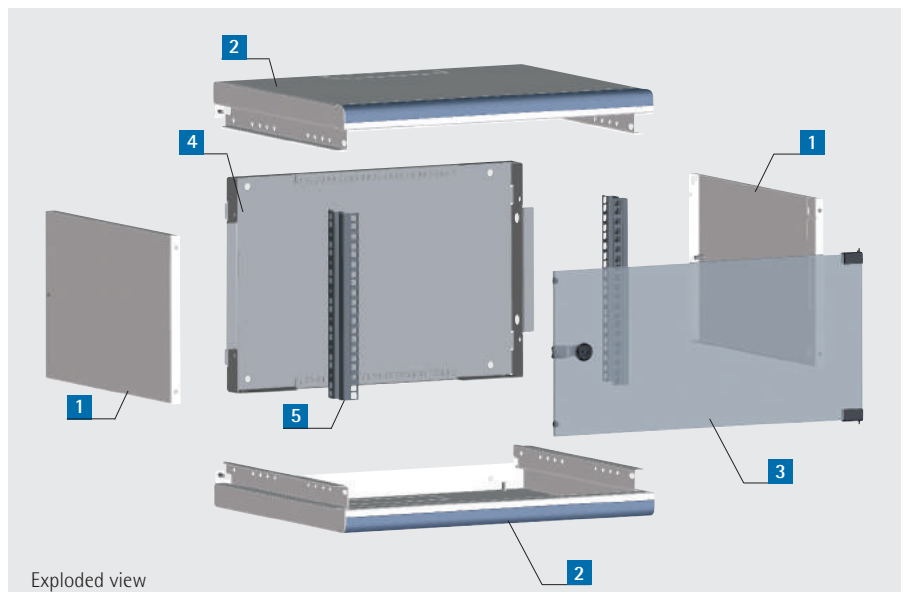
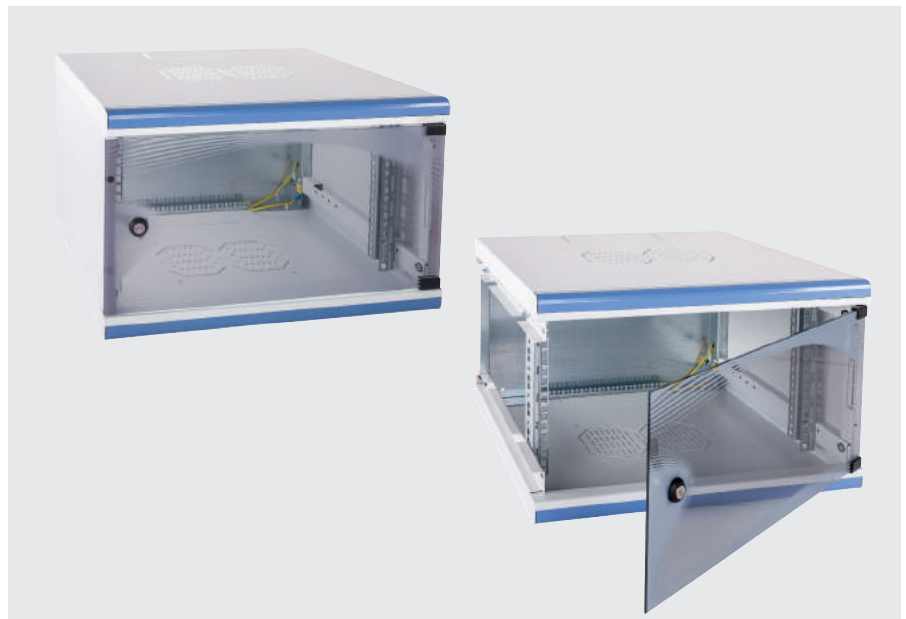
Enclosure: painted RAL 7035 light grey

Design profile: painted in RAL 5014

pigeon blue

Delivery:

flatpack (disassembled)



Delivery

Item	pc.	Description
1	2	Side panels
2	2	Top/bottom plate with precut openings for cable entry
3	1	Viewing door with 180° hinge (profile locking EK333)
4	1	Rear wall
5	2	Individually depth adjustable 19" vertical mountings
	1	equipotential bonding set
	1	Cable entry brush



Description	Outer dimensions (H x W x D) mm	Order no.
optiRack 6 U	345 x 550 x 450	350-002-06
optiRack 9 U	480 x 550 x 450	350-002-09
optiRack 12 U	612 x 550 x 450	350-002-12
optiRack 15 U	745 x 550 x 450	350-002-15



optiRACK "silent" underbench cabinet

- sound-insulating enclosure with viewing door
- detachable side panels
- 19" expansion 12 U variable depth

Available in two versions:

Version 1 "passive":

with ventilation grille (prepared without fan for passive ventilation of the enclosure)

Version 2 "active":

prepared with speed-controlled fan for active ventilation of the enclosure (fan: 12 V DC, 150 m3/h free-blowing, 37 dB(A))

Material:

sheet metal

Finish:

enclosure: RAL 7035 light grey

Design profile: RAL 5014 pigeon blue (other colours on request)

Dimensions (H x W x D):

12 U (615 mm) x 550 x 600 mm

Delivery:

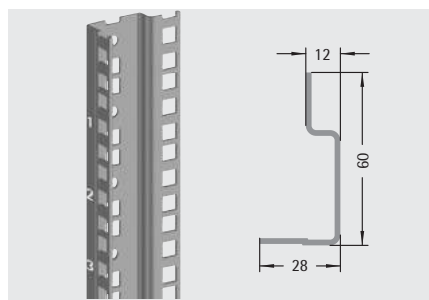
assembled



Fig: Version 2 "active"

Description	Order no.
Version 1 "passive"	350-001-60
Version 2 "active"	350-001-61

19" vertical mounting

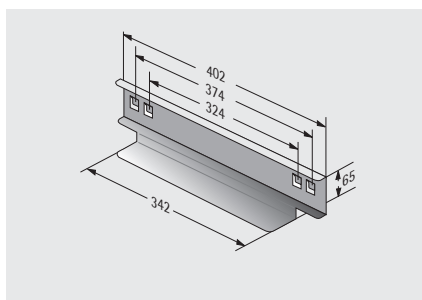


- with U-labelling
- height: 12 U

Material:

sheet metal, galvanised

Slide rail, hook-in



- hooked in the 19" vertical mountings
- to support heavy 19" plug-in units
- two 19" levels are required

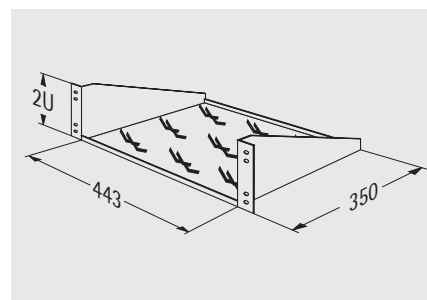
Material:

Stahlblech 1,5 mm, galvanised

Load capacity:

50 kg

19" shelf 2 U, fixed



- simple assembly on a 19" grid (only one 19" level required)
- ventilated

Material:

sheet metal

Finish:

RAL 7035 light grey

Load capacity:

15 kg (distributed load/static)

Dimensions (H x W x D):

2 U (88 mm) x 19" (482,6 mm) x 350 mm

Floor space (w x d):

443 x 350 mm

Order no.
316-120-12

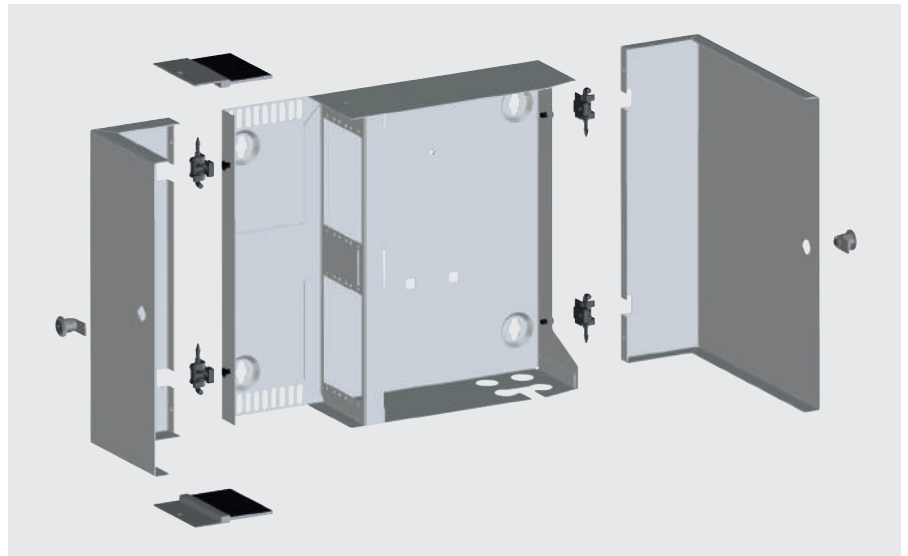
Order no.
316-544-00

Order no.
315-810-20



Small LAN distribution cabinet

- compact dimensioned housing
- Separation of patch room and cable entry area by two lockable doors with different locking systems
- Modular distribution field frame, which can accommodate up to four partial front panels 3 U / 8 HP
- suitable for mixed data plug mounting (Gf / Cu hybrid equipment)
- active components such as e.g. Mini-HUBs can be easily integrated
- Cable entry with brush seal at top and bottom
- Cable entry in patch room over max. 4 PG16 fittings (M20)



Material:

sheet metal

Finish:

RAL 7035 light grey

Dimensions (H x W x D):

405 mm x 100 mm x 330 mm

Delivery:

assembled



Simple configuration with mini-hub CAT.6 und LSA-Plus

two locking systems

integrated brush seal

Upon request, you will receive customized front panels according to your specifications!

Delivery

Item	pc.	Description
1	1	Enclosure chassis
2	2	Door with different locking systems
3	2	Brush seals
4	1	Distribution panel

Order no.

213-020-15

FO front panels 3 U, 8 HP

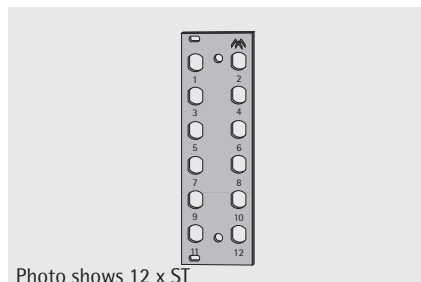


Photo shows 12 x ST

- for assembly of the non-configured FO small distribution cabinet
- front panels are numbered consecutively
- a maximum of 4 part front panels can be integrated into the LAN small distribution cabinet

Material: aluminium 2,5 mm

Finish: anodised

Front panels for other plug-in connectors on request!

Description	Order no.
Front panel 12 x ST	213-308-01
Front panel 12 x SC (6 x SC-Duplex)	213-308-02
Blind panel 3 U, 8 HP	243-308-00

CAT.6A, 6-way/12-way

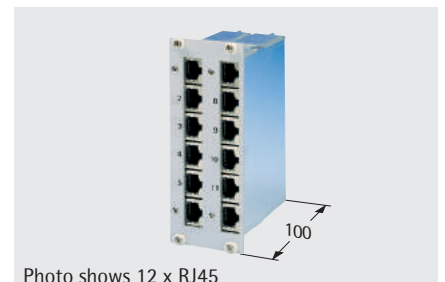


Photo shows 12 x RJ45

- shielded CAT.6A distribution panel
- 6-way RJ 45 (3 U / 8 HP) or 12-way RJ 45 (3 U / 10 HP)
- metal enclosure with large lowimpedance galvanised surfaces
- LSA Plus connecting system
- labelled aluminium front panel

Finish:

Front panel: anodised

Enclosure: galvanised

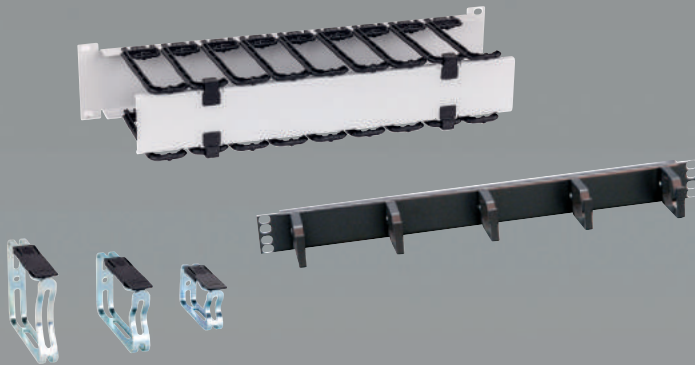
Description	Order no.
6-way distribution panel	213-503-10
12-way distribution panel	213-503-30



Further accessories for our wall housings can be found here:

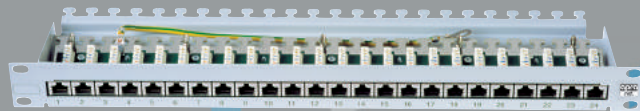
✓ Power distribution system

Socket strips and other power supply components can be found from page 137 onwards.



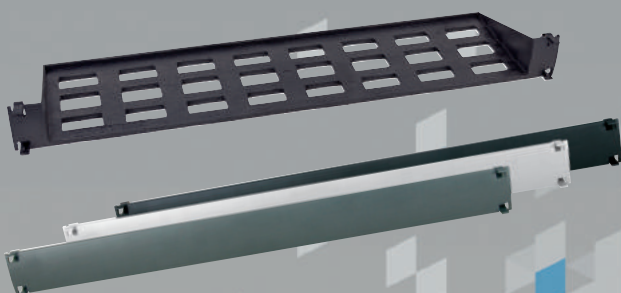
✓ Cable management

Suitable cable routing solutions such as cable brackets, patch panels etc. can be found from page 163 onwards.



✓ Distribution technology

DIN rail solutions, module technology, splice boxes and distribution panels can be found from page 169 onwards.



✓ General accessories

Shelves, blind plates, slide rails and other useful accessories can be found from page 177 onwards.



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



Air conditioning technology

from page 129



Power distribution system

from page 137



Cabinet monitoring

from page 155



Cable management

from page 163



Distribution technology

from page 169



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)

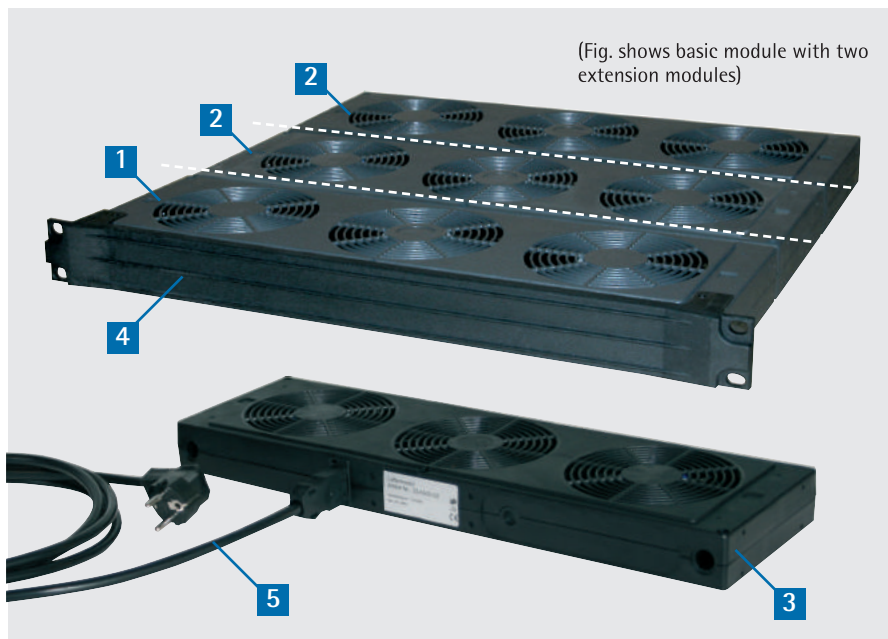
350	230 / 50 - 60	165 x 100 x 128	235-200-27
-----	---------------	-----------------	------------

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 m ³ /h	230-500-01	230-500-11
2-way	230 m ³ /h	230-500-02	230-500-12
3-way	345 m ³ /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 m ³ /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 x 450 x 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):

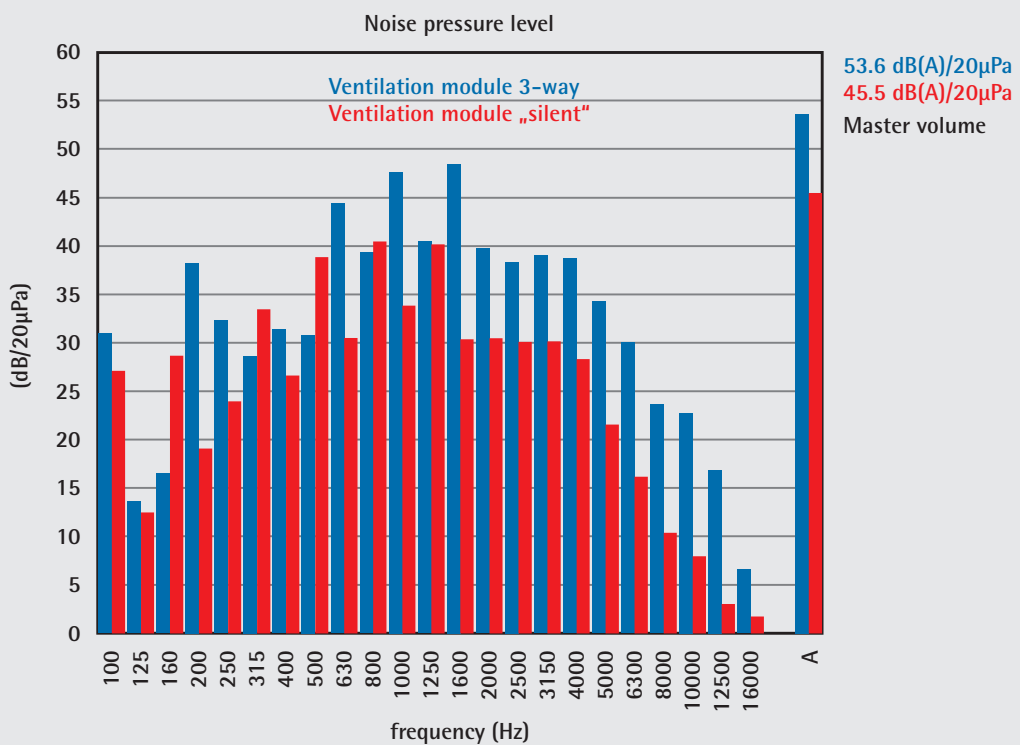
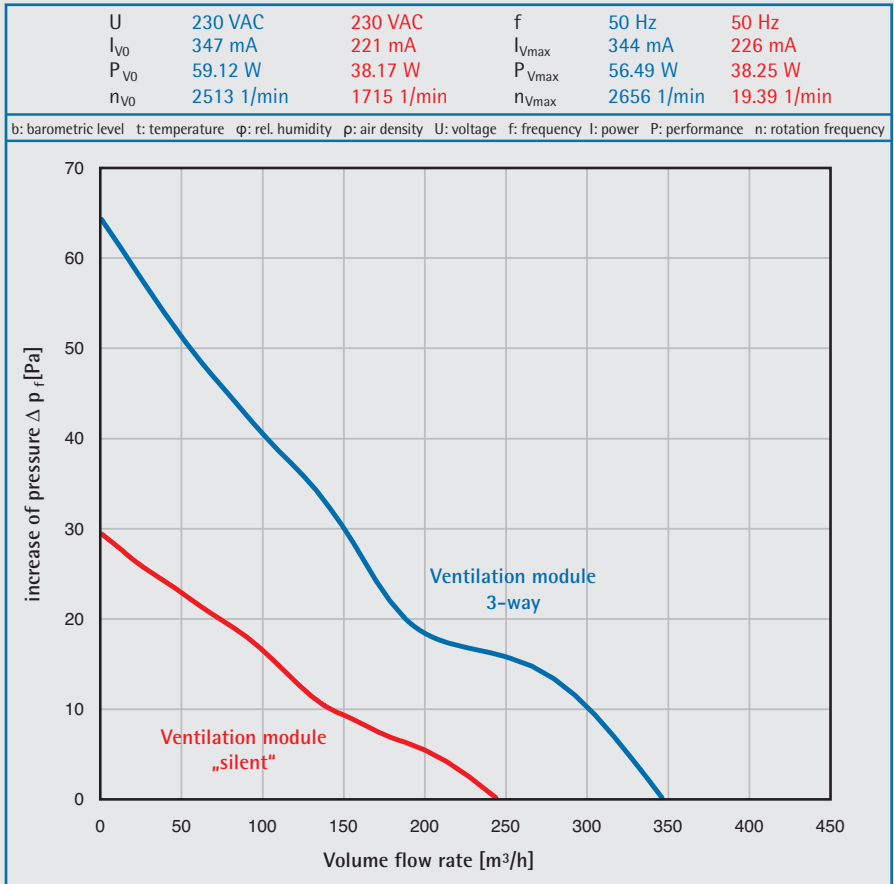
44 x 450 x 140 mm

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.



Fan characteristics





318 • Roof ventilation unit "Silent"

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



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

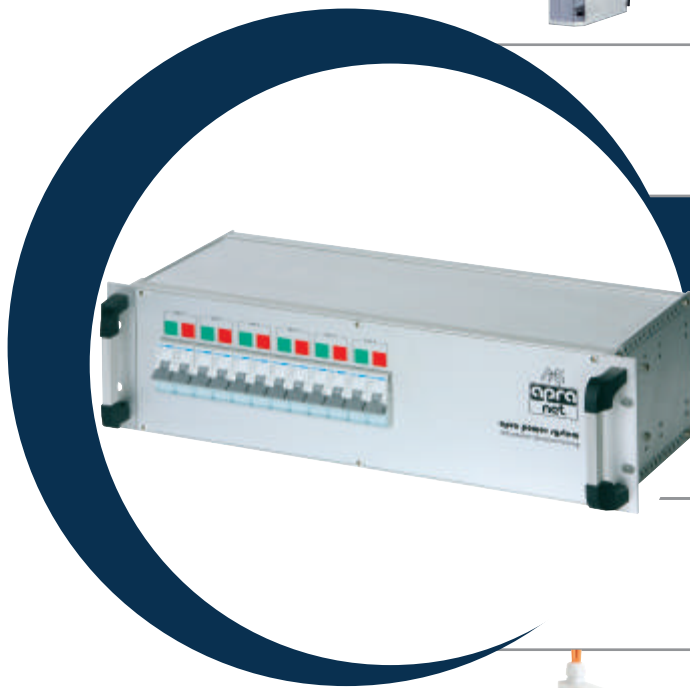


Close cooperation with leading air conditioning companies enables us to react flexibly to customer requirements. Thanks to individual air-conditioning concepts, apraNET meets the most diverse requirements.

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



	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	
	Air conditioning technology	from page 129	
	Power distribution system	from page 137	
	Cabinet monitoring	from page 155	
	Cable management	from page 163	
	Distribution technology	from page 169	
	General accessories / distribution technology	from page 177	



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



Power distribution system



Multiple socket strips (PDU)

Page 140

- Earthing-pin
- UTE (France)
- IEC connectors IEC-C13

RZ flex PDU

Page 142

- Earthing-pin
- IEC connectors C19 with IEC-Lock
- IEC connectors IEC-C13
- RZ flex PDU

19" power distribution units

Page 148

- modular 19" power distribution systems



Configure your own PDU system

Page 146

- PDU configurator

USV systems, 19" devices

Page 150

- 19" line Interactive VI-SS-211
- 19" online continuous transducer FI-SS-111

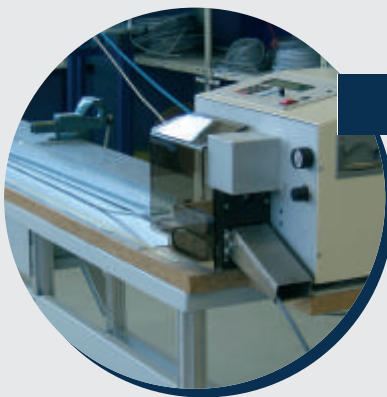


Our service for you: Pre-wiring, power supplies, plug-and-play versions in enclosures and cabinet systems

✔ take advantage of our expertise ✔ save time and money

The apra Group places particular emphasis on individual and flexible system solutions. Our enclosures and 19" cabinet systems are equipped with components such as a power supply and power distribution system in line with customer requirements and are supplied with full pre-wiring. This enables us to fulfil a wide range of customer requirements.

From development right through to the finished product, you can benefit from our expertise and flexibility!



Customised cables and connections

- stripping and cutting cables and wires to length by machine
- connecting wires with a crimp machine
- labelling and marking the cables, wires and connectors



Assembly and pre-wiring at installation locations



Quality and safety checks in accordance with VDE regulations

- testing electrical devices with the specified test process (aside from electrical measurements, e.g. protective earth conductor resistance, leakage current, insulation and high-voltage measurements (AC/DC), quality tests can also be carried out in the form of text or image test points.)
- workstation for continuity checks on configured cables and backplanes in subracks

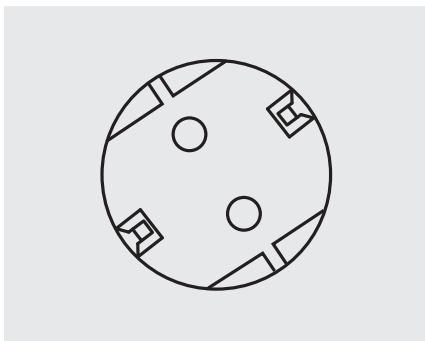


Multiple socket strips

- space-saving design
- stable aluminium enclosure
- suitable for 19" mounting in 1 U division (L = 440 mm) and/or cabinet rack mounting
- connection: 3 × 1.5 mm²
- standard cable length: 2.0 m
- earthing-pin plug and UTE standard sockets: twisted 35°
- incl. mounting bracket

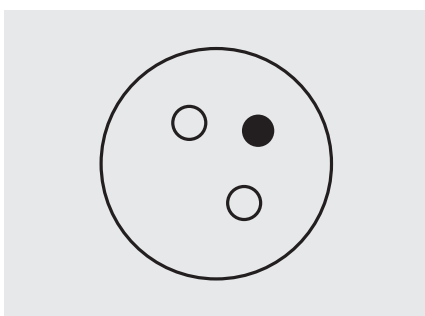


two-pin earthed plug 230 V AC, 16 A



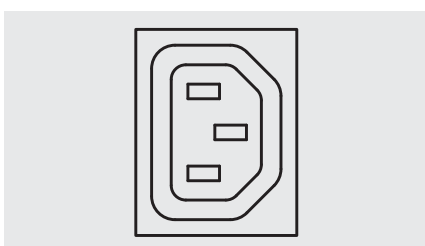
No. of sockets	Switch	Surge protection	Mains filter	Amp. meter	19" install.-compatible 1 U	Length L mm	Colour	Order no.
9	-	-	-	-	x	440	light grey	591-400-00
12	-	-	-	-	-	610	black	591-412-00
8	x	-	-	-	x	440	light grey	591-401-00
8	-	x	-	-	x	440	light grey	591-402-00
6	-	x	x	-	x	440	light grey	591-403-00
7	x	x	-	-	x	440	light grey	591-404-00
7	-	-	-	x	x	440	light grey	591-400-15

UTE (France), 230 V AC, 16 A



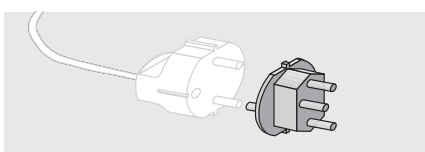
No. of sockets	Switch	Surge protection	Mains filter	Amp. meter	19" install.-compatible 1 U	Length L mm	Colour	Order no.
9	-	-	-	-	x	440	light grey	591-405-60
12	-	-	-	-	-	610	black	591-412-60
8	x	-	-	-	x	440	light grey	591-406-60
8	-	x	-	-	x	440	light grey	591-402-60
6	-	x	x	-	x	440	light grey	591-403-60
7	x	x	-	-	x	440	light grey	591-404-60

IEC connectors IEC-C13, 230 V AC, 10 A



No. of sockets	Switch	Surge protection	Mains filter	Amp. meter	19" install.-compatible 1 U	Length L mm	Colour	Order no.
9	-	-	-	-	x	440	light grey	591-414-00
12	-	-	-	-	x	440	black	591-414-10
8	-	-	-	x	x	440	light grey	591-400-17

"Swiss earthing-pin plug" adapter



- connector pin side: Swiss
 - jack side: earthing-pin plug
- Material:** plastic, black

Order no.
640-230-00

Additional multiple socket strips such as C-19, monitorable or switchable socket strips available on request!



Design	Input	Phases Input	Current per phase	Outputs	Measurement Input	Measurement per port	Switched outputs	Order no.
Horizontal (19")	400 V 16 A	3	16	3 x Earthing-pin	X			591-920-01
Vertical	230 V 16 A	1	16	18 x C13	X			591-920-02
Vertical	230 V 16 A	1	16	18 x C13	X	X		591-920-03
Vertical	230 V 16 A	1	16	18 x C13	X		X	591-920-04
Vertical	230 V 16 A	1	16	18 x C13	X	X	X	591-920-05
Horizontal (19")	230 V 16 A	1	16	4 x C13, 5 x C19	X			591-920-06
Horizontal (19")	230 V 16 A	1	16	4 x C13, 5 x C19	X	X		591-920-07
Horizontal (19")	230 V 16 A	1	16	4 x C13, 5 x C19	X		X	591-920-08
Horizontal (19")	230 V 16 A	1	16	4 x C13, 5 x C19	X	X	X	591-920-09
Vertical	230 V 32 A	1	32	4 x Earthing-pin, 12 x C13, 2 x C19	X			591-920-10
Vertical	230 V 32 A	1	32	4 x Earthing-pin, 12 x C13, 2 x C19	X	X		591-920-11
Vertical	230 V 32 A	1	32	4 x Earthing-pin, 12 x C13, 2 x C19	X		X	591-920-12
Vertical	230 V 32 A	1	32	4 x Earthing-pin, 12 x C13, 2 x C19	X	X	X	591-920-13
Vertical	400 V 16 A	3	16	3 x Earthing-pin, 18 x C13	X			591-920-14
Vertical	400 V 16 A	3	16	3 x Earthing-pin, 15 x C13	X	X		591-920-15
Vertical	400 V 16 A	3	16	3 x Earthing-pin, 15 x C13	X		X	591-920-16
Vertical	400 V 16 A	3	16	3 x Earthing-pin, 15 x C13	X	X	X	591-920-17
Vertical	400 V 16 A	3	16	1 x Earthing-pin, 8 x C19	X			591-920-18
Vertical	400 V 16 A	3	16	1 x Earthing-pin, 8 x C19	X	X		591-920-19
Vertical	400 V 16 A	3	16	1 x Earthing-pin, 8 x C19	X		X	591-920-20
Vertical	400 V 16 A	3	16	1 x Earthing-pin, 8 x C19	X	X	X	591-920-21
Vertical	400 V 16 A	3	16	3 x Earthing-pin, 3 x C19, 21 x C13	X			591-920-22
Vertical	400 V 16 A	3	16	3 x Earthing-pin, 3 x C19, 21 x C13	X	X		591-920-23
Vertical	400 V 16 A	3	16	3 x Earthing-pin, 3 x C19, 21 x C13	X		X	591-920-24
Vertical	400 V 16 A	3	16	3 x Earthing-pin, 3 x C19, 21 x C13	X	X	X	591-920-25
Vertical	400 V 32 A	3	32	3 x Earthing-pin, 24 x C13	X			591-920-26
Vertical	400 V 32 A	3	32	3 x Earthing-pin, 24 x C13	X	X		591-920-27
Vertical	400 V 32 A	3	32	3 x Earthing-pin, 24 x C13	X		X	591-920-28
Vertical	400 V 3 2A	3	32	3 x Earthing-pin, 24 x C13	X	X	X	591-920-29
Vertical	400 V 32 A	3	32	1 x Earthing-pin, 2 x C13, 15 x C19	X			591-920-30
Vertical	400 V 32 A	3	32	1 x Earthing-pin, 2 x C13, 15 x C19	X	X		591-920-31
Vertical	400 V 32 A	3	32	1 x Earthing-pin, 2 x C13, 15 x C19	X		X	591-920-32
Vertical	400 V 32 A	3	32	1 x Earthing-pin, 2 x C13, 15 x C19	X	X	X	591-920-33
Temp. sensor								591-920-34

Other configurations e.g. with differential current measurement available on request!





RZ-flex PDU

This modular system makes it possible to connect different PDU modules and change them during operation by means of a very sturdy and safe coupling device (Neutrik single phase/ 16 A). Its supply line can be connected simply and quick. Thus, an individual configuration on site afterwards is possible.

- individual connection of PDU by standard Neutrik system (single phase/ 16 A).
- type of modules C13, C19 and earthing-pin plug
- assembly: 19" mounting (see fig. 1) or individual mounting to rack (see fig. 2)

Material:

high-quality aluminium extrusion

Dimensions (H x W x D):

44,45 (1 U) x 440 x 47 mm

Delivery:

mounting material included





Order information

Pos.	Description	Power Inputs	Order no.
1	6 times C13	1x	591-400-62
2	4 times C19 with IEC LOCK	1x	591-400-63
3	6 times Earthing-pin	1x	591-400-87
4	6 times C19 with IEC LOCK	3x	591-400-90
5	12 times C13	2x	591-401-37
6	8 times C19 with IEC LOCK	2x	591-401-38

Accessories

Description	Order no.
Neutrik coupling 16 A for cable mounting	640-024-17
Locking set for C13 PDU (set for 6 locks)	591-400-61
Mains cable 3m, with Neutrik socket u. CEE plug 16 A 3pol.	640-044-30
Mains cable 5m, with Neutrik socket u. CEE plug 16 A 3pol.	640-044-50

Installation: Individual connection of the PDU via standard Neutrik system (single-phase / 16 A)





apra power system network-enabled PDUs

Professional high-quality multiple socket strips

The strips measure electrical parameters and the on/off switching of the individual outputs via an integrated ethernet connection.

Material:

aluminium

Dimensions (H x W x D):

44.4 (1U) x 438 x 130 mm

Delivery text

PDU, 19" mounting bracket, supply line: 3 metre H05VV-F 3G2,5 mm² with Earthing-pin plug 16A



Switchable metered PDU

Individually switchable sockets with switching in the zero passage and additional switching status control. The PDU has an integrated ethernet connection and can therefore be easily operated via a web browser.

The following protocols are supported, amongst others: HTTP, HTTPS, SNMP, SMTP, NTP, SSH, SNMP V2 und V3, Modbus TCP, IPv4 und IPv6



Description	Order no.
8-way IEC 320 C13	591-920-41



Monitored PDU

Integrated measurement of: power, active power, voltage, frequency, $\cos \varphi$ (Zeichen Phi: Arial Unicode 03C6) and energy.

All values can be read on the integrated, illuminated OLED display. The PDU has an integrated ethernet connection and can therefore be easily operated via a web browser.

The following protocols are supported, amongst others: HTTP, HTTPS, SNMP, SMTP, NTP, SSH, SNMP V2 und V3, Modbus TCP, IPv4 und IPv6



Description	Order no.
8-way Earthing-pin	591-920-42
8-way IEC 320 C13	591-920-43

Retrofit module for existing systems

In order to also exploit all the benefits of a monitored power distribution on existing racks, the retrofit module offers the option of integrating an intelligent component into an existing system. The installation work and costs are greatly minimised by the pluggable system.

Integrated measurement of: power, active power, voltage, frequency, $\cos \varphi$ (Zeichen Phi: Arial Unicode 03C6) and energy.

All values can be read on the integrated, illuminated OLED display.

The PDU has an integrated ethernet connection and can therefore be easily operated via a web browser.

The following protocols are supported, amongst others: HTTP, HTTPS, SNMP, SMTP, NTP, SSH, SNMP V2 und V3, Modbus TCP, IPv4 und IPv6



Description	Type of connection	Order no.
400 V / 16 A	CEE plug-socket	591-920-47
400 V / 32 A	Input and Output terminal	591-920-48

Further models available on request!



Individually configurable PDU

Configure "Your" individual PDU

Through cooperation with several well-known manufacturers, we can provide you with PDUs that are optimally tailored to your needs.

Contact us - we will be happy to advise you!



Power supply

- 230 / 400 VAC
- Single- / Three-phase
- 16 A / 32 A
- Positioning (Top/Bottom/Front/rear)

Fuses

- Circuit breaker
- Thermal fuse
- Overvoltage Protection



Cable

- Individual length
- Different plug types
- Terminal block
- Halogen-free
- Larger cross-section





Enclosure / housing

- dimensions
- 1 U / 1,5 U
- individual length according to equipment
- Horizontal or vertical alignment
- color
- Individual labelling possible

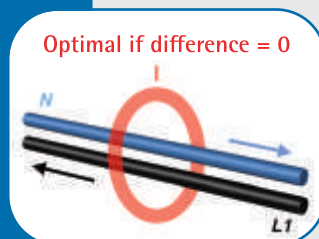
Connection types

- IEC320 C13
- IEC320 C19 IEC-lock
- CEE 7/3 (Earthing-pin)



Monitoring / Measuring

- Local measuring
 - Current in A
- Telemetry
 - Current in A
 - Consumption in W and VA
 - Energy in kWh
 - Voltage in V
 - Effective power
- Different current measurement
 - Class B measurement (alternating current / direct current)
 - Single & three-phase



Output features

- Energy metering
 - PDU total
 - Groups
 - Per output
- Remote output switching by means of bistable relays per output



19" power distribution units 3 U, redundant

This power distribution system is ideal for the safe supply of power to servers with redundant power supply units.

It enables two separate power supplies (each 400 V / 3 × 25 A) to be fed in. The supplies are distributed over 6 outputs (each 2 × 230 V / 10 A) and each output is protected with a B10 A automatic circuit breaker. Clear colour identification of the outputs and automatic circuit breakers divides the device into six lines and enables a redundant supply to six servers from a single point.

The mains supply lines are connected easily with a connector included in the scope of delivery without any additional tools or material costs via clamp spring contacts and are inserted and locked at one of the two inputs.

Various conductor types with various crosssections (0.5 to 4 mm²) can be connected here.

At the outputs, power can also be picked up by lockable C14 IEC connectors or by connectors included in the scope of delivery (design similar to power input connector).

Advantages:

- redundant power supply to 6 servers with just one device
- only 3 U space required thanks to compact design
- simple power feed via cables to up to 5 × 4 mm² max. 3 × 25 A
- simple connection of servers either via either IEC sockets or with the connector system included in the scope of delivery
- fuse protection of the outputs each with a B10 A automatic circuit breaker

Material:

enclosure: aluminium

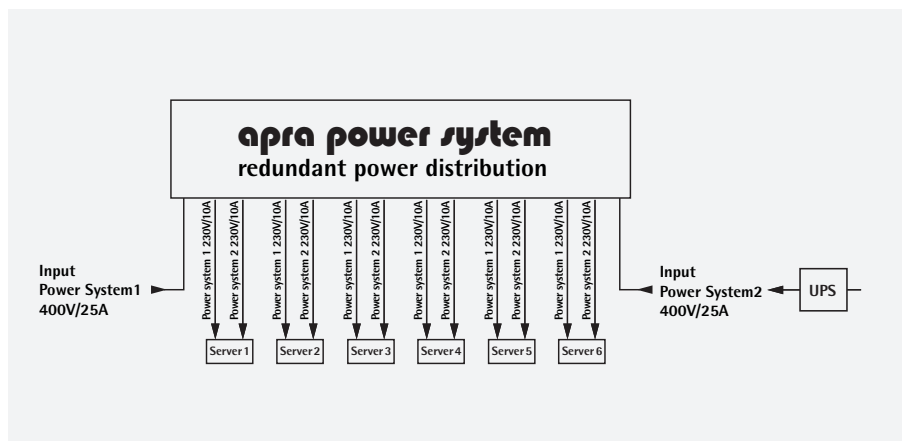
inserts: plastic

Finish:

anodised

Dimensions (H x W x D):

3 U (132.5 mm) x 482.6 mm x 170 mm



Order no.
591-910-10



19" power distribution unit 3 U for automatic circuit breakers

- for the installation of automatic circuit breakers
- fast access to the wiring space
- stable accommodation of components acc. to DIN 43 880 in build sizes 1-3
- strain relief of the rear-side cable via cable guard rail

Material:

side panels: aluminium 2.5 mm
 module rail: aluminium profile
 front bracket: aluminium profile

Finish:

transparent, chromated

Delivery:

assembly set

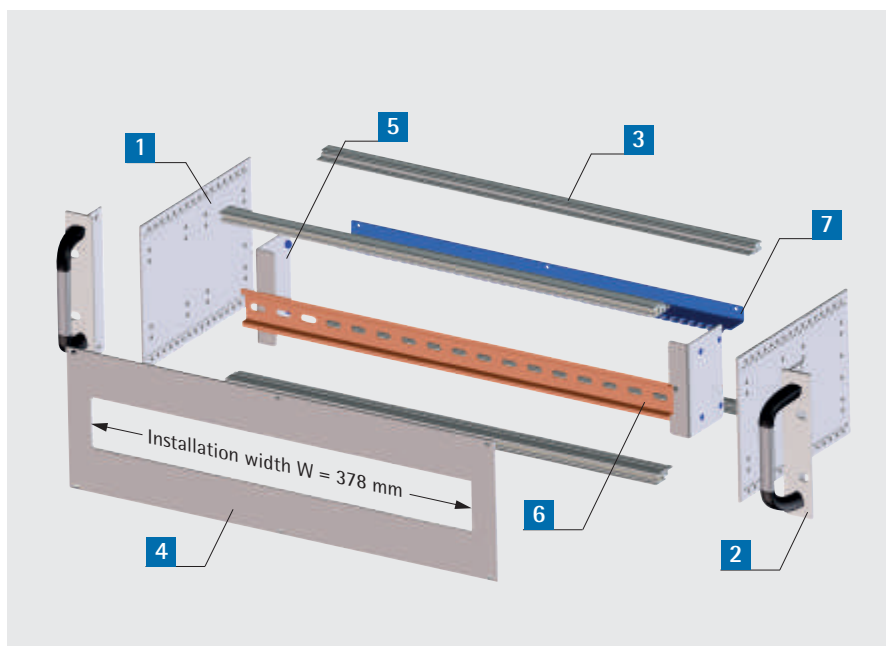


Sample configuration with cover sheets (special build)

Delivery

Pos.	St.	Bezeichnung
1	2	Side panels
2	2	Front bracket with handles
3	4	Modul rails en (2x standard, 2x BUS)
4	1	Front panel
5	2	Angle bracket
6	1	Top hat rail TS 35
7	1	Cable guard rail
8	1	Mounting hardware

Order no.
245-311-80



Accessories

Cover plate closed

- for top and bottom mounting

Material:

aluminium

Order no.
240-662-85

Cover strip S 35 G

- to conceal the front panel openings
- L: 219 mm

Material:

plastic

Order no.
640-222-00



19" Line Interactive VFI-SS-311 1000, 1500, 2000, 3000 VA

The Racktower housing and the rotatable LCD display make it possible to use it as a tower unit as well as in 19" cabinets.

The series comes standard with RS-232, USB and emergency shutdown contacts.

Through the card slot, it can be added with an optional SNMP adapter or a relay card. All models provide at least 8 IEC C13 (10 A) consumer outputs.

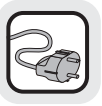
The 3000 VA model also provides a 16 amp IEC C19 output.

- UPS classification VFI-SS-311 according to IEC 62040-3
- "Line interactive" technology
- excellent power factor of 0.9
- high efficiency (> 97%)
- can be used as a tower as well as 19" version
- user-friendly backlit LCD display depending on operating status
- optional XL version with expandable batteries
- large voltage input window (161-276 VAC)
- automatic frequency detection
- sine wave output
- RS-232 and USB interface as standard
- slot for optional adapters: relay card or SNMP card
- management software for all common operating systems
- 36 months warranty





	APS 1000 LI	APS 1500 LI	APS 2000 LI	APS 3000 LI
Power VA / Watt	1000 / 900	1500 / 1350	2000 / 1800	3000 / 2700
Power failure bridging time Load 100% / 50%	4,5 min / 10 min	3 min / 7 min	4,5 min / 10 min	3 min / 7 min
Input				
- Nominal voltage / voltage range	230 VAC / 161 ~ 276 VAC			
- Input frequency range	50/60 Hz normal operation / 40-70 Hz generator operation			
- Boost threshold	207 VAC ± 4 % / 215 VAC ± 4 % (setup 230 VAC Wide Range)			
- Undervoltage threshold	161 VAC ± 4 % / 171 VAC ± 4 % (setup 230 VAC Wide Range)			
- Voltage return threshold	243 VAC ± 4 % / 236 VAC ± 4 % (setup 230 VAC Wide Range)			
- Overvoltage threshold	276 VAC ± 4 % / 266 VAC ± 4 % (setup 230 VAC Wide Range)			
Output				
- Output voltage	220, 230, 240 VAC			
- Voltage tolerance (Battery Mode)	± 5 % RMS			
- THD(i) typical linear/non-linear load	< 3 % THD / < 6 % THD			
- Frequency tolerance synchronization range	45-55 Hz / 55-65 Hz			
- Frequency tolerance Battery Mode	50 / 60 ± 0,1 Hz			
- Power factor	0,9			
- Voltage waveform	sinusoidal			
- Efficiency	> 97 % (normal operation, loaded batteries))			
DC Start	cold start			
Switch time	typical, 2 ~ 6 ms			
Batteries				
- Nominal voltage	36 VDC		72 VDC	
- Type	closed, maintenance-free lead-mat battery			
- Charging time	approx. 3 h auf 90 %			
Display				
- LCD	rotary LCD display			
- LCD backlight	Normal (blue) / Fault (red)			
Interface	RS232, USB, EPO, Card slot for optional SNMP / relay card			
Audible alarm				
- Battery mode / Battery Low	Beeping every 4 seconds / Beeping every second			
- USV fault / overload	Beep continuously / Beeping every second			
Environment				
- Temperature	0 °C - 40 °C			
- Humidity	0-95% non-condensing			
- Acoustic noise	< 50 dB(A) @ 1 Meter			
Mechanic				
- Dimensions (H x W x D in mm)	86,5 (2 HE) x 438 (19") x 430		86,5 (2 HE) x 438 (19") x 600	
- Weight	16 kg		29,5 kg	
- Degree of protection	IP 20			
Terminals				
- Input	1 x IEC (10 A)		1 x IEC (16A)	
- Output	8 x IEC C13 (10A)			8x IEC C13 (10 A) + 1x IEC C19 (16 A)
Regulations / standards	CE / EN 62040-1 / EMC: EN 62040-2 class C1			
Order no.	235-300-02	235-300-03	235-300-04	235-300-05

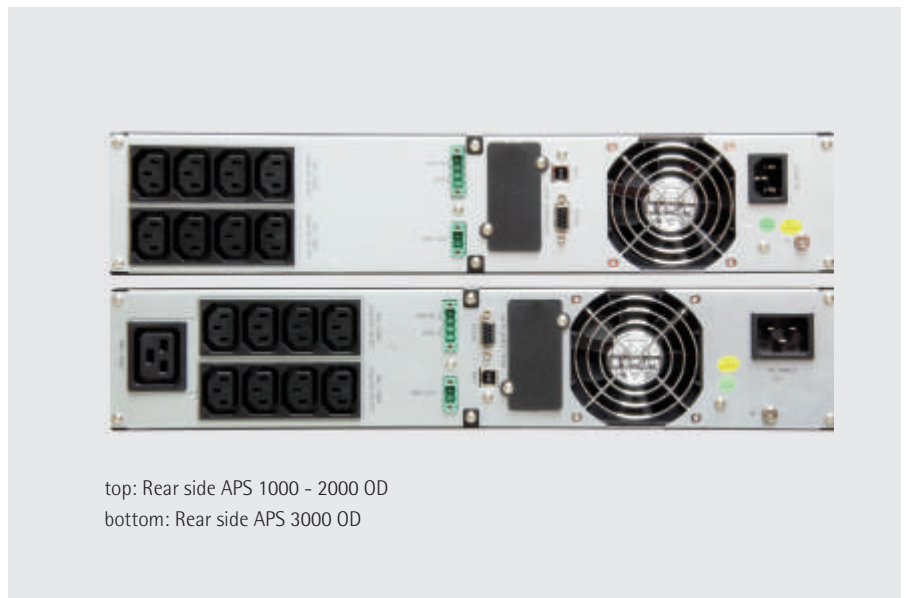


19" online continuous transducer VFI-SS-3111 1000, 1500, 2000, 3000 VA

High-end UPS in the field of high-quality microprocessor-controlled online permanent converters for your EDP landscape or for metrological or industrial plants. The Racktower UPS is already equipped as standard with extensive and special features, which otherwise offer on the UPS market at most expensive special designs. The programmable switch contacts or the adjustable restart function are only two of the countless examples. Their racktower housing and the rotatable LCD display allow both use as a tower unit as well as the installation in 19" cabinets.

With standard RS232 and USB interface, standard emergency stop contact (EPO) and individually programmable switch contacts (DRY IN / DRY OUT), the Racktower UPS offers comprehensive communication and control options. And even these can be extended by additional optional slot adapters (SNMP, relay card). All models provide at least 8 IEC C13 (10 A) consumer outputs.

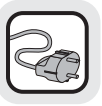
- UPS classification VFI-SS-111 according to IEC 62040-3
- online permanent converter with sine output switchable to ECO mode (line-interactive)
- excellent power factor of 0.9
- can be used as a tower as well as 19" version
- user-friendly rotatable LCD display
- optional XL version with expandable batteries
- large voltage input window (120-276 VAC)
- microprocessor control
- automatic frequency detection
- preset output frequency (frequency converter function)
- RS-232 as standard
- USB as standard
- programmable switch contacts as standard
- emergency stop contact "EPO" as standard
- slot for further optional adapters: relay card or SNMP
- management software for all common operating systems
- 36 months warranty



top: Rear side APS 1000 - 2000 OD
bottom: Rear side APS 3000 OD



	APS 1000 OD	APS 1500 OD	APS 2000 OD	APS 3000 OD
Power VA / Watt	1000 / 900	1500 / 1350	2000 / 1800	3000 / 2700
Power failure bridging time 100% / 50 % load (pf0,7)	7 min / 15 min	5 min / 15 min	5 min / 15 min	7 min / 20 min
Input				
- Cold start	yes, preset frequency = 50 Hz			
- Acceptable voltage range	120 VAC - 276 VAC			
- THDi	< 5 % full load			
- Input Power Factor	≥ 0,99 (Full RCD LOAD)			
- Input frequency range	45 - 55 Hz / 54 - 66 Hz			
Output				
- Output voltage				
- Voltage waveform	Sinus			
- Nominal voltage	208 VAC / 220 VAC / 230 VAC / 240 VAC / ± 1 %			
- Transient recovery	100 ms (IEC 62040-3 non-linear load)			
- Distortion factor	< 2% THD, linear load / < 5 % THD, non-linear load			
- Output frequency				
- Synchronization range	45 - 55 Hz / 54 - 66 Hz (adjustable)			
- Battery operation	50 / 60 ± 0,2 Hz			
Power Factor	0,9			
Efficiency at full load				
- Line mode	> 89 % with loaded batteries			
- Battery mode	> 84 % @ 12 VDC / Battery			
- ECO mode	> 95 %			
Overload (Normal/Battery)	102 % ~ 130 % : 12s / 130 % ~ 150 % : 1,5s / > 150 % : 100 ms			
Battery				
- Battery type	12 VDC / 7 Ah (closed, maintenance-free lead-mat battery)		12 VDC / 9 Ah (closed, maintenance-free lead-mat battery)	
- Number of blocks	3	4	4	6
- DC voltage	36 VDC	48 VDC	48 VDC	72 VDC
- Charging time	< 3 h for 90%			
- Maximum charge current	1,5 A			
Communication integrated / Optional cards	RS 232, USB, switch contacts, EPO / Intelligent Slot for AS 400, SNMP			
Indicator / Alarm	rotary LCD display / acoustic alarm			
Ambient conditions				
- Temperature (operating)	0 °C - 40 °C			
- Humidity	0-95% non-condensing			
- Noise level	ca. 52 dB(A) @ 1 Meter			
Mechanical				
- Dimensions (H x W x D in mm)	(2 HE) x (19") x 435			(2 HE) x (19") x 604
- Weight	13,2 kg	19,7 kg	19,7 kg	27,8 kg
- Degree of protection	IP 20			
Connection input	1 x IEC (10 A)			1 x IEC (16 A)
Connection output	8 x IEC 13 (10 A)			8 x IEC 13 (10 A) + 1 x IEC 19 (16 A)
Standards	CE / EN 62040-1 / EMV: EN 62040-2 Klasse C1			
Order no.	235-300-07	235-300-08	235-300-09	235-300-10



Service

Guarantee success with a unique combination of our individual products!

Contact us and we will be happy to advise you.





	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	
	Air conditioning technology	from page 129	
	Power distribution system	from page 137	
	Cabinet monitoring	from page 155	
	Cable management	from page 163	
	Distribution technology	from page 169	
	General accessories / distribution technology	from page 177	



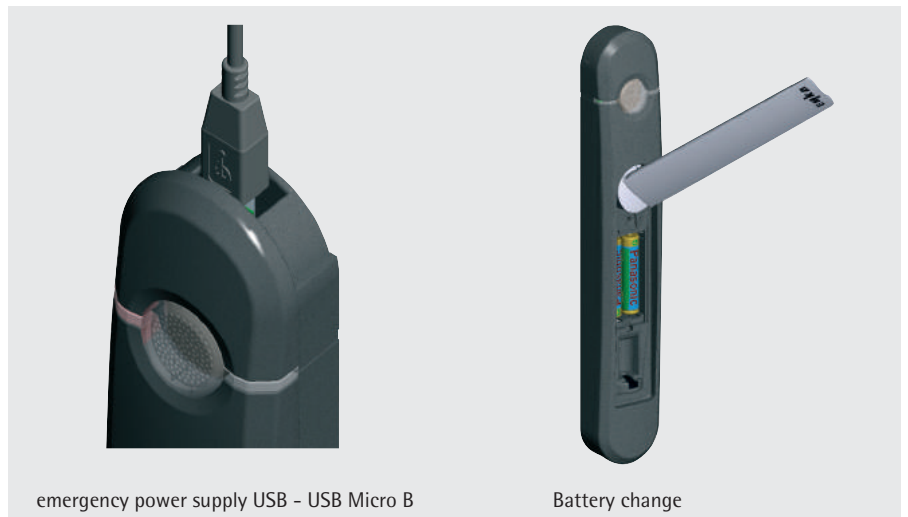
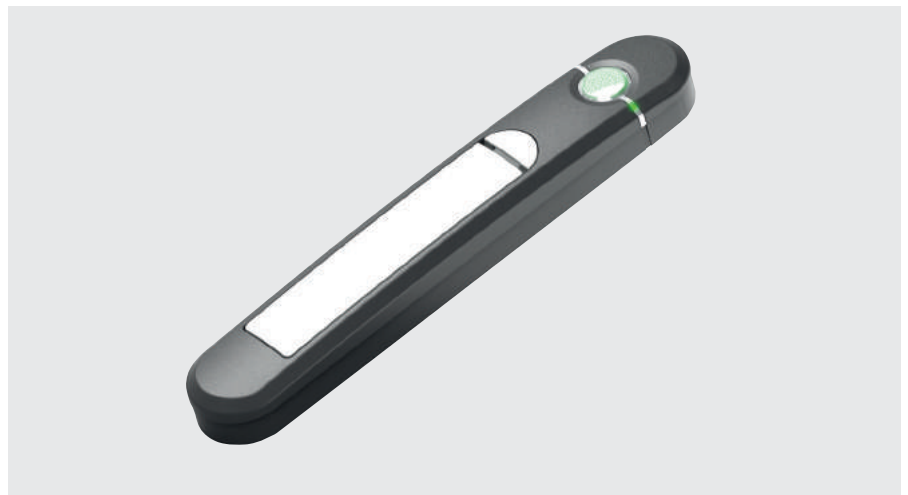
You can read more about products from the apra-group at www.apra-norm.com



AGENT E "Wireless"

The Agent E Wireless pivoting handle communicates via wireless network. Its wireless and cost-saving installation makes it ideal for retrofitting in data centers. The authentication is done via RFID. Highly efficient energy management guarantees a long battery life.

- wireless mounting on the cabinet (plug & play, power supply via battery)
- communication via an encrypted radio connection
- installation in almost all common handle hole pictures easily possible
- control of up to 1,200 doors in a radio network via access units and control unit
- authentication over 125 kHz or 13.56 MHz transponder cards
- batteries included (battery life min. 3 years)
- remote opening is always possible
- emergency opening via master card
- an emergency power supply in the event of a power failure is possible via a microUSB interface



emergency power supply USB - USB Micro B

Battery change



Description	Order no.
"Agent E" Control Unit Wireless	235-101-50
"Agent E" Access Unit Wireless	235-101-51
"Agent E" Wireless RFID 13.56 MHz Swivel Lever Set, RAL 7035	318-105-58
"Agent E" Wireless RFID 13.56 MHz Swivel Lever Set, RAL 9005	318-105-57
"Agent E" power supply 12 V / 2 A	235-100-49
"Agent E" door contact switch	235-101-53

Also available as a wired version!



EMI-One

EMI-One system is a complex solution integrating the functionality of monitoring of environmental parameters with access control. The extensive alarm section and rules, combined with a wide range of accessories and sensors, fully tailor to your needs.

Basic features:

- communication using Ethernet (100Base-TX)
- 4 independent 12-V output channels for controlling terminal devices (e.g. a handle with an electromagnetic door strike, lighting, or ventilation system)
- 4 independent binary inputs with additional parametrisation function to handle fire, gas, flood, motion, power failure sensors etc.
- possibility to connect temperature sensors, or a temperature and a humidity sensor (e.g. for measurement in different places of the cabinet)
- control functions access – RFID readers (cards, key rings, etc.)



Order no.

925-300-00

Temperature sensor



- temperature range: -55°C to +125°C
- dimensions: 80 x 8 mm
- cable length 2,5 m

Order no.

925-360-00

Combo sensor (temperature + humidity)



- Measures both the humidity and the temperature of the environment
- Humidity range: 0-99.9% relative humidity - Accuracy $\pm 3\%$ (10 to 90%)
- Temperature range: -40 °C to 80 °C - Accuracy ± 1 °C (-40 °C to 80 °C)
- Dimensions: 60 x 28 x 4 mm
- Standard cable length 2,5 m

Order no.

925-361-00

Combo sensor (temperature + humidity), high precision



- Measures both the humidity and the temperature of the environment
- Humidity range: 0-100% relative humidity - Accuracy: $\pm 1.5\%$ (0 to 80%)
- Temperature range: -40 °C to 125 °C - Accuracy: ± 0.1 °C (20 °C to 60 °C)
- Dimensions: 25 x 44 x 37 mm
- Standard cable length 2.5 m with removable RJ10 / RJ11 plug

Order no.

925-374-00

**Fire detector**

- Operating mode selectable (smoke, heat, multi-sensor). Smoke detection according to the requirements of EN 54-7
- Heat detection according to EN 54-5
- Standard cable length 2,5 m

Order no.

925-368-00

Flood sensor

- The sensor may e.g. be placed in condensate tubs of air conditioners
- Parallel connection of several sensors possible
- Probes adjustable up to max. 35 mm
- Standard cable length 2,5 m

Order no.

925-369-00

Door contact switch

- Condition of doors can be monitored.
- Change of state at distances greater than 20 mm.
- With sabotage monitoring
- Standard cable length 2.5 m
- Dimensions: 50 x 14 x 12 mm
- available in white and dark brown

Order no.

925-364-00

Distributor

- Distributor for the simultaneous connection of two RFID readers and a temperature sensor
- Standard cable length 0.5 m

Order no.

925-394-00

Relay 12 V

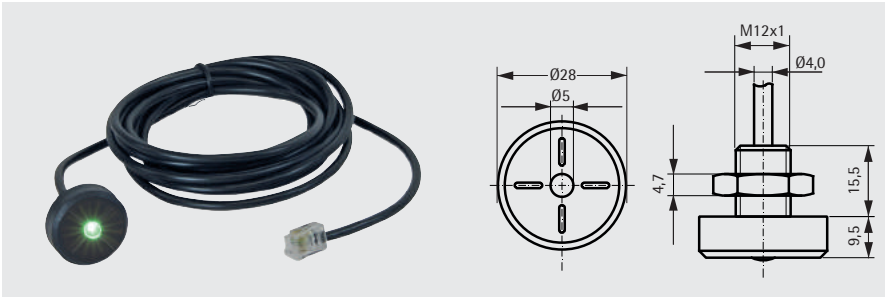
- The relay allows control of higher voltage devices (such as fans or bulbs).
- Coil voltage: 12 VAC, 12 VDC
- Switching voltage: max. 250 VAC
- Operating current: max. 16 A
- Standard cable length 2.5 m

Order no.

925-363-00



RFID reader 125 kHz



- cable length 2,5 m

Order no.
925-362-00

Card for RFID reader 125 kHz



- The cards can be printed individually

Order no.
925-382-00

RFID reader 13,56 MHz



- cable length 2,5 m

Order no.
925-370-00

Card for RFID reader 13,56 MHz



- The cards can be printed individually

Order no.
925-384-00

RFID reader HID HITAG 125 kHz



- cable length 2,5 m
- Colour: black or grey

Order no. (schwarz)	Order no. (grau)
925-375-00	925-399-00

Card for RFUD reader HID HITAG 125 kHz



- The cards can be printed individually

Order no.
925-397-00

Subject to technical modification. Picture can differ from actual product.



Door handle with emergency key unlock

This handle can be opened remotely using the EMI-One system to provide on-site access to a user. If the handle is not actuated, it closes automatically.

The opening state of the handle is transmitted to the system through the built-in reed contact.

The emergency opening (eg power failure) is possible by means of a key.

Included in delivery is lock EK 333. Different locks on request. To do this, the cover must be removed above the lock cylinder. The cylinder cover is destroyed and must be replaced.

In addition to the above functions, the handle can be combined with RFID readers!

- Standard cable length 2.5 m



Order no.
925-395-10

GSM Module

Allows the sending of SMS and e-mail messages (SMTP SSL). By using the GSM module, the user has the additional assurance that he will receive the information immediately after an error has occurred.

Version 1: Local

- GSM module local will be connected directly to the EMI-One. This module sends SMS and e-mails from an EMI device
- Power is supplied by EMI-One
- Standard cable length 1.0 m
- Standard cable length of the GSM antenna 3.0 m

Version 2: Network

- GSM network gateway has the same functionality as version 1
- is additionally connected via Ethernet and can support multiple EMI devices (in the same LAN)



Order no. (Version 1)	Order no. (Version 2)
925-372-00	925-373-00

Subject to technical modification. Picture can differ from actual product.

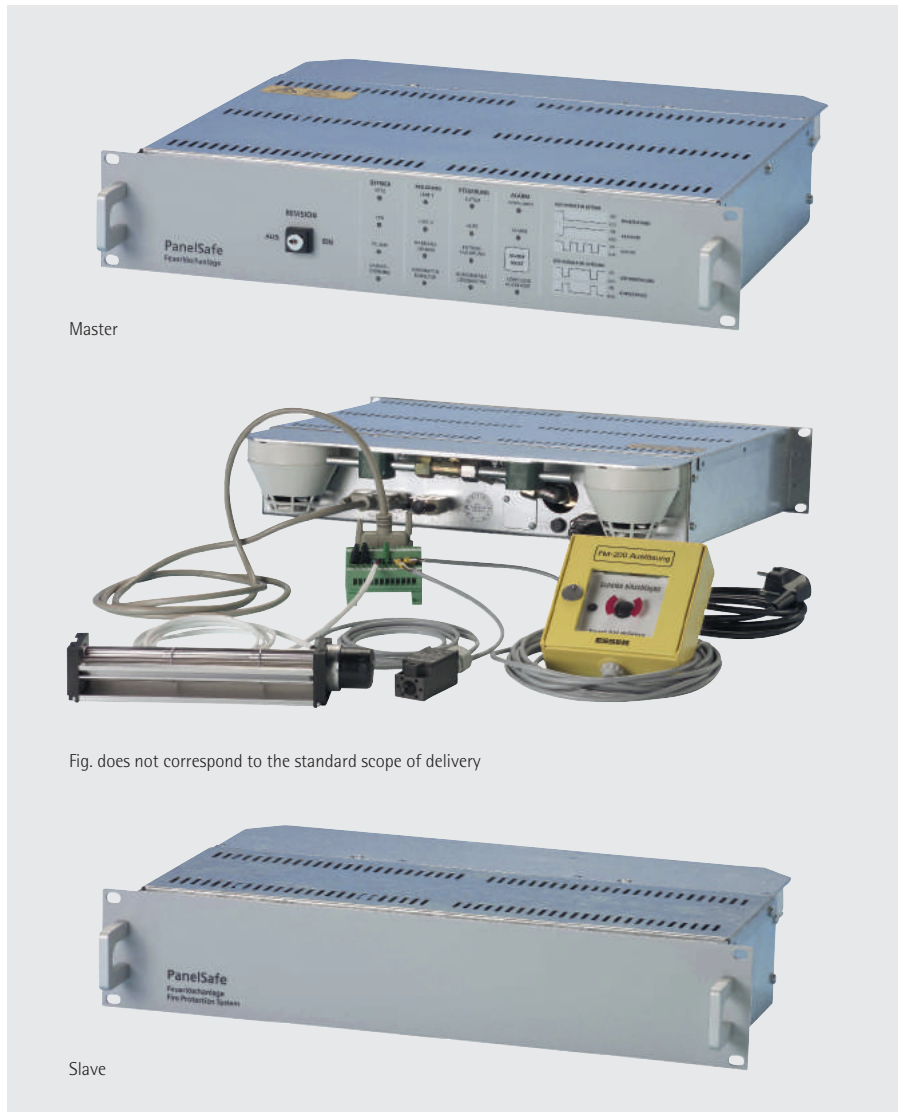


19"- Fire extinguishing system

The cabinet extinguishing system can be easily and space-savingsly integrated in commercially available, closed 19" cabinets up to a cabinet volume of 1.2 m³. Larger cabinets or related cabinet units can be equipped with max. 4 slave units (1.2 m³ per slave) can be realized.

Convincing product features:

- Space-saving 19" format with only 2 height units (per master / slave)
 - Quick detection by early fire detection inside the 19" cabinet
 - Fast extinguishing by applying the effective quenching gas FM-200 in the cabinet
 - Easy installation and commissioning through pre-assembled components
 - Easy maintenance due to modular design
 - Fast and reliable detection of events through detailed LED displays
 - Secure protection even from large cabinets through the use of slave units
- Scope of delivery Master slot:
- Insert 2 HE
 - The transfer distribution
 - extinguishing fan
 - Door contact switch (1x)
 - For each additional door you need an additional door contact switch



Master

Fig. does not correspond to the standard scope of delivery

Slave

Description	Order no.
master slot	235-110-00
slave slot	235-110-05
connection cable (slave)	235-110-07
door contact switch	235-110-06
sliding rail*	316-544-20

* We recommend that you attach a set of slide rails per slot because of the weight of the slots.

Commissioning of the extinguishing system is not included in the scope of delivery and must be carried out on site by qualified personnel! We are pleased to offer you commissioning on request.



235 • 19"-Fire extinguishing system / TiRAX "cool & safe" IP 54



Technical data	Master	Slave
Input voltage	230 VAC	
Output voltage	24 VDC, for external control purposes as well as horn and extinguishing fan	
Battery	2 Ah (sufficient for 4 hours)	
Monitored inputs and outputs	for mains, smoke detector 1 and 2, manual release, door contact switch, Extinguishing fan, horn, ext. control	
Potential-free relay outputs	for pre-alarm, main alarm, collective fault and object shutdown (loadable 30 VA)	
displays	mains, CPU, collective fault, smoke detector 1 & 2, manual release, extinguishing agent tank (pressure switch), extinguishing fan, horn, triggering element, pre-alarm, main alarm, extinguishing triggered	
smoke detectors	2 optical scattered light detectors in dual detector dependency	
extinguishing agents	FM-200, C3F7 H/N2 (25 bar) / alternatively Novec 1230	
extinguishing agent container	1 litre for max. 1.2 m ³ protective volume approved according to RL 97/23/EG and RL 1999/36/EG	
Temperature range	0 °C to 40 °C	
Width / Height	19" / 2 U	
Mounting depth	403,25 mm	265 mm
Weight	ca. 14 kg	ca. 8 kg

TiRAX "cool & safe", IP 54

- dismantlable steel profile cabinet frame
- two side push-in doors with quick release
- front-view door with three-point locking and tinted tempered safety glass
- rear sheet steel door with three-point locking (installation also possible as side door)
- both doors suitable for receiving a profile half-cylinder
- 19" level front and rear
- roof, one-piece
- floor panel multi-part, with foam cable entry
- grounding set mounted
- base H = 100 mm
- screw set M 5 (50-fold)

• 19" - Fire extinguishing system

- master module 2 HE
- door contact switch for suppressing the deletion when opening the doors
- slide rail set, depth-variable
- two multifunction crossbeams

• Air conditioning:

- Air conditioner 1050 W (Ta35 / Ti35) mounted on side push-in door (push-in door can be mounted on the right or left)

Finish:

Trim part, base:
RAL 7035 light grey
Design profiles:
RAL 5014 pigeon blue

Dimensions (H x W x D):

(2000 + 100) x (800 + 138) x 1000 mm

Delivery:

fully assembled, base provided



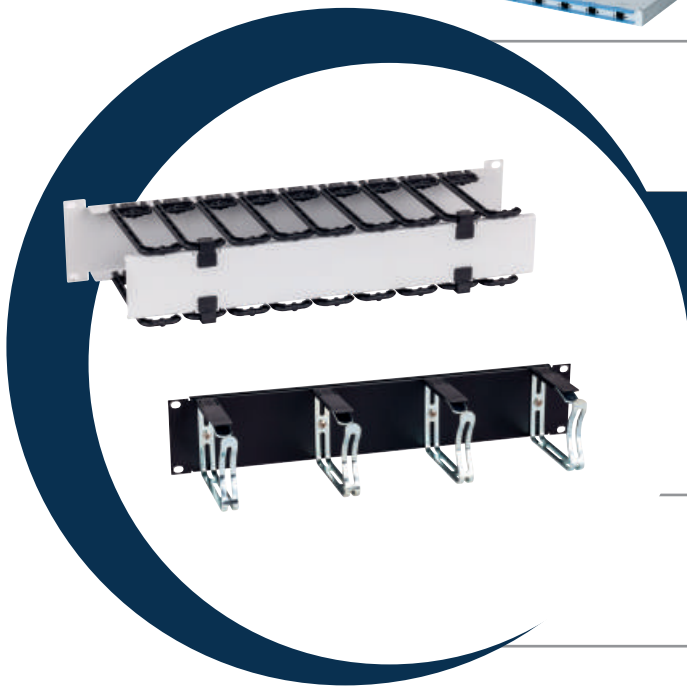
Detail: 19" fire extinguishing system installed in the TiRAX "cool & safe" cabinet

Order no.

318-202-76



	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	
	Air conditioning technology	from page 129	
	Power distribution system	from page 137	
	Cabinet monitoring	from page 155	
	Cable management	from page 163	
	Distribution technology	from page 169	
	General accessories / distribution technology	from page 177	



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



19" cable guide panel 1 U / 2 U with metal hoops



- for clear and neat horizontal cable routing in the 19" level
- incl. 4 cable hoops with movable plastic locks

Material:

panel: sheet steel 1.5 mm
 cable hoops: sheet steel, chrome-plated
 locks: Lexan 920 black, UL94 V-0, RoHS compliant

Finish:

painted / chrome-plated
 RAL 7035 light grey
 RAL 9005 jet black

Dimensions (H x W x D):

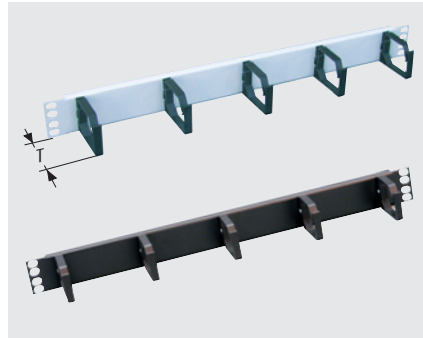
44 / 88 x 482,6 x 90 / 130 mm

Delivery:

mounting material included

U	Colour	Order no.
1	RAL 7035	213-145-41
1	RAL 9005	213-145-42
2	RAL 7035	213-145-43
2	RAL 9005	213-145-44

19" cable routing panel with plastic clamps 1 U



- for clear and neat horizontal cable routing in the 19" level
- clips: Version, narrow

Material:

sheet metal / plastic UL94 HB

Finish:

RAL 7035 light grey
 RAL 9005 jet black

Dimensions (H x W x D):

44 x 482.6 x 60 mm

Delivery:

mounting material included

Colour	Order no.
RAL 7035	213-145-00
RAL 9005	213-145-30

19" switch panel, plastic 1 U



- for clear and neat horizontal cable routing in the 19" level
- weight-saving in comparison to traditional metal panels
- fire protection classification to UL94 V-0

Material:

plastic (polyamide) UL94 V-0

Finish:

black (similar to RAL 9005)

Dimensions (H x W x D):

44 x 482.6 x 65 mm

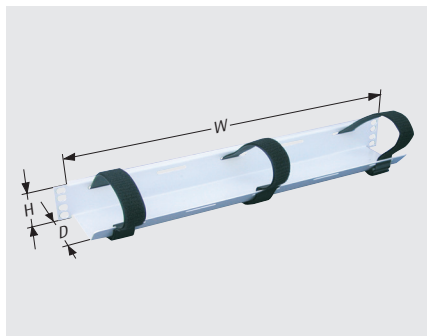
Delivery:

complete with mounting materials

Order no.
213-145-80



19" cable routing panel 1 U with Velcro fasteners



- for clear and neat horizontal cable routing in the 19" level with Velcro fastener

Material:

sheet metal / plastic

Finish:

RAL 7035 light grey

RAL 9005 jet black

Dimensions (H x W x D):

44 x 482.6 x 90 mm

Delivery:

complete with 3 x Velcro strip and mounting material

Colour	Order no.
RAL 7035	213-161-00
RAL 9005	213-161-10

19" cable manager 2 U / 3 U



- structured, horizontal cable routing in the 19" plane area
- stable front plastic cable fingers
- lockable on the front side by pivoting hinged cover (in both directions)
- increased operational safety
- flexible use in all 19" cabinet and enclosure systems

Material:

Flange: sheet steel

Folding panel: aluminum

Cable fingers and hinges:

Plastic black, UL94 - V0

Finish:

Sheets: RAL 7035 light gray resp.

RAL 9005 deep black

Dimensions (H x W x D):

44 / 88 x 482,6 x 100 mm / 150 mm

Delivery:

1 piece, incl. 19" attachment set

U	Colour	Order no. D 100 mm	Order no. D 150 mm
2	RAL 7035	213-146-55	213-146-30
2	RAL 9005	213-146-56	213-146-35
3	RAL 7035	213-146-57	213-146-40
3	RAL 9005	213-146-58	213-146-45

19" cable guide panel 2 U



- for orderly and clear horizontal cable routing in the 19" level
- extendable legs up to W = 720 mm

Material:

sheet metal

Finish:

RAL 7035 light grey

RAL 9005 jet black

Dimensions (H x W x D):

88 x 482,6 x 85 mm, W = extractible

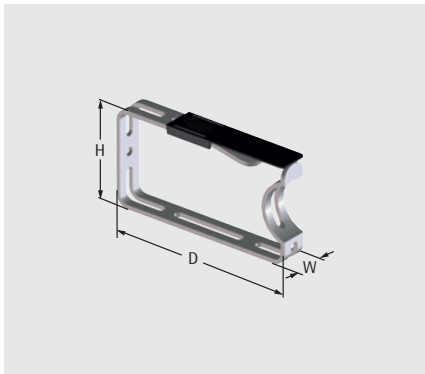
Delivery:

mounting material included

Colour	Order no.
RAL 7035	213-145-62
RAL 9005	213-145-71



Cable clips, metal (set)



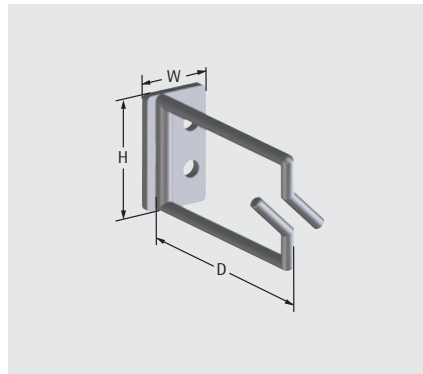
- for securing cables vertically to a 19" frame (for 800 mm wide cabinets)
- set = 10 pieces
- mounting material included

Material:

metal, plastic black UL94 V-0

Dimensions (H x W x D) mm	Order no.
44 x 23 x 85	640-036-11
66 x 23 x 125	640-036-12
88 x 23 x 125	640-036-13

Switch panel metal, small



- screwable (M 5)
- Set = 10 pieces, mounting material included

Material:

metal, galvanised

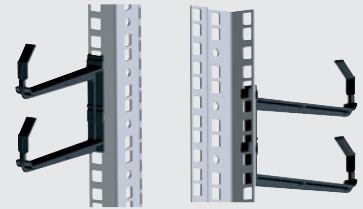
Dimensions (H x W x D):

35 x 20 x 65 mm

Order no.
640-036-10

Cable holder 2 U

Mounting example on 19" vertical mountings



View: front assembly on 19" vertical mounting

View: rear with locking lug

- attachable in square holes (9.5 mm), fixable with screw (M 5)
- set = 10 pieces
- mounting material included

Material:

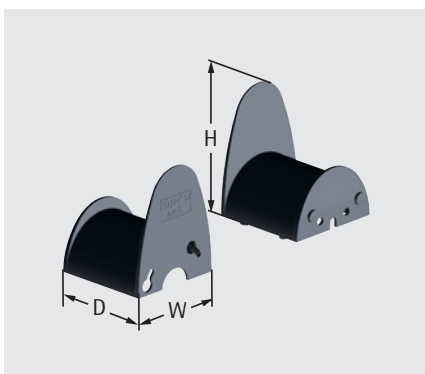
plastic, black UL94 V-0

Dimensions (H x W x D):

114,2 x 15,1 x 127,5 mm

Order no.
640-030-35

Cable diverter / radius limiter for FO and Cu cables



- latchable in shaped hole, additionally screwable (M 5)
- set = 10 pieces

Material:

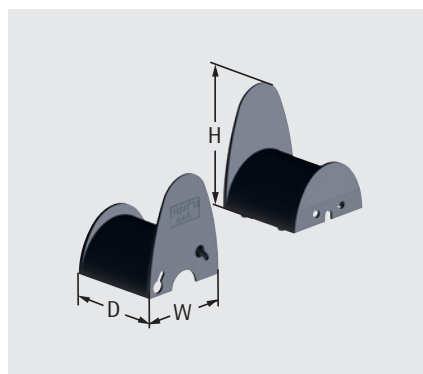
Plastic, black UL94 V-0

Dimensions (H x W x D):

85 x 70 x 70 mm, R = 35 mm

Order no.
640-030-55

Cable diverter / radius limiter for FO and Cu cables



- screwable (M 5)
- set = 10 pieces

Material:

Plastic, black UL94 V-0

Dimensions (H x W x D):

85 x 70 x 70 mm, R = 35 mm

Order no.
640-030-65

Closure for cable diverter / radius limiter



- insertable
- Ø 69 mm
- set = 10 pieces

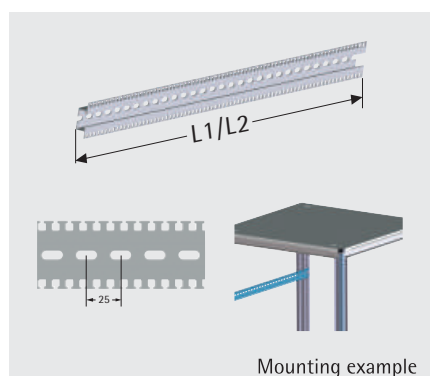
Material:

Plastic, black UL94 V-0

Order no.
640-030-52



"Universal" cable guard rail



- with integrated cable management bracket
- holds cable ties and cable clips in place
- mounting material included

Material:

aluminium, anodised

Model	Depth (D) / Width (W)	Order no.
L1 (520 mm)	600 mm	318-121-10
L2 (720 mm)	800 mm	318-121-11
Adapter for 1000 mm		316-103-25

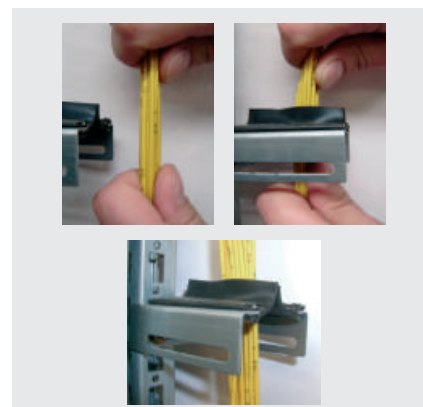
Cable clamps



- to mount cables on the "Universal" cable guard rail

Description	Order no.
for cable Ø 8 - 12 mm	640-132
for cable Ø 12 - 16 mm	640-133
for cable Ø 16 - 22 mm	640-134
for cable Ø 28 - 34 mm	640-134-10

"Easyfix" cable holder



- quick, clear and protective holders for vertical cabling in the rack
- preferred application for fibre optic cables

Order no.
640-036-15

"Universal" velcro strip



- for quickly securing **non 19"-compatible** components
- length: 300 mm, width: 20 mm
- back to back mounting
- set = 10 pieces

Material:

velcro, black

Order no.
671-122-08

Velcro mount "universal"



- used to accommodate velcro up to w = 20 mm
- for screws M 4 (not included)
- set = 10 pieces

Material:

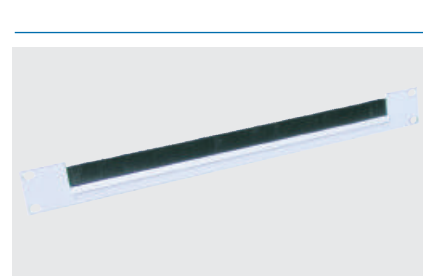
plastic, black UL94 V-0

Dimensions (H x W x D):

29 x 29 x 9 mm

Order no.
583-001-08

19" cable duct 1 U with brush



- for cable access behind the 19" mounting
- mounting to 19" level

Material:

sheet metal / plastic

Finish:

RAL 7035 light grey

RAL 9005 jet black

Dimensions (H x W x D):

44 x 482.6 x 12 mm

Delivery:

complete with brush and mounting material

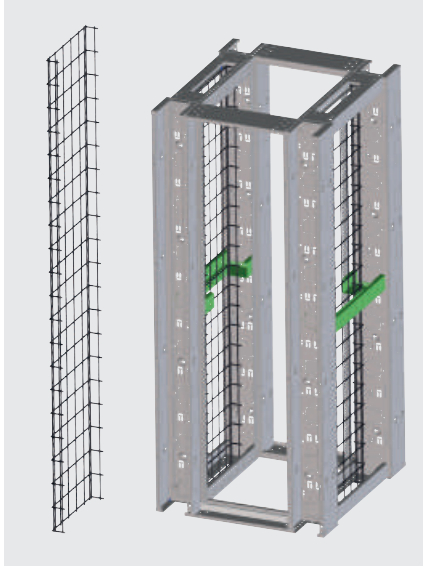
Colour	Order no.
RAL 7035	213-146-00
RAL 9005	213-146-10



Cable management

Grid gutter

Important notes:



- serves the structured and flexible cable routing in the rack
- Mounting laterally in the base system over the entire cabinet height
- H = 2100 mm

Material:

metal, galvanised

Dimensions (H x W x D):

2100 x (200 / 300 / 400) x 60 mm

Description	Order no.
W = 200 mm	640-037-61
W = 300 mm	640-037-63
W = 400 mm	640-037-64
mounting set	640-037-55

Questions for the sales team:



	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	
	Air conditioning technology	from page 129	
	Power distribution system	from page 137	
	Cabinet monitoring	from page 155	
	Cable management	from page 163	
	Distribution technology	from page 169	
	General accessories / distribution technology	from page 177	

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



Modular DIN rail system

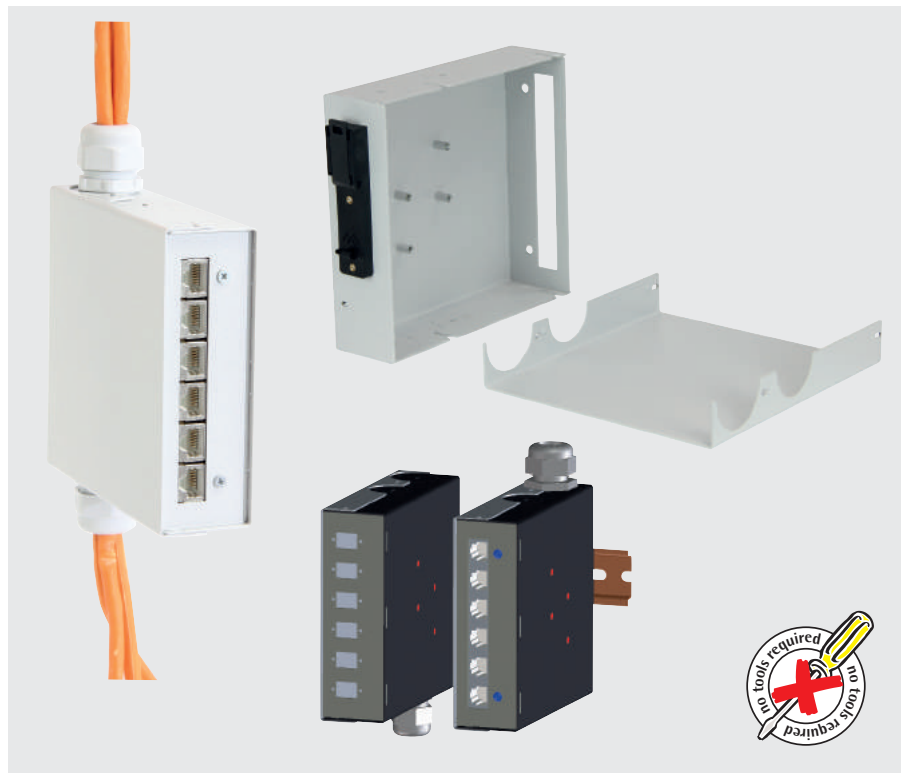
The DIN rail housing consists of an upper shell (1), a lower shell (2) and a DIN rail holder (3). It is provided with one cable entry each for an M20 and M25 cable gland (4). Depending on the network application, the DIN rail housing is differentiated into a copper "Cu" and a glass fiber "Gf" version and supplemented by further accessories (see below).

Cu version:

The DIN rail housing is additionally equipped with a high-quality Cu distribution panel in the "6-fold CAT 6A" version.

GF version:

The DIN rail housing is supplemented with a "GF cable manager" (5) for routing cable reserves as well as a front panel for the corresponding type of coupling (6). Various types of common fiber optic couplings for the industrial environment are available here.



Pre-assembly and execution in special colors on request!

Material:

sheet metal

Finish:

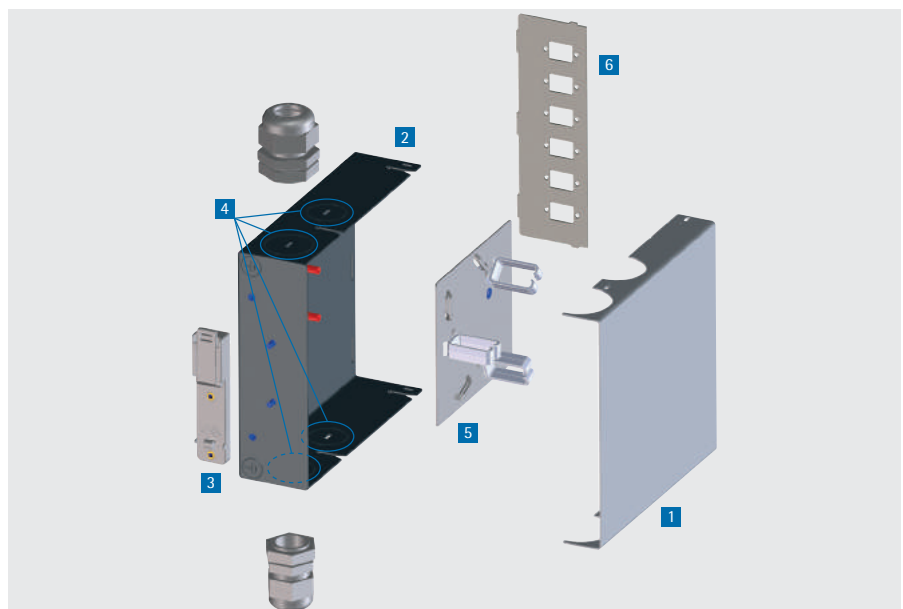
RAL 7035 light grey

Dimensions (H x W x D):

133 x 43 x 135 mm

Delivery:

mounting material included



Description	Order no.
DIN rail housing version "Cu" CAT6 A (6 ports)	213-510-10
DIN rail housing version "Gf" 6x SC-Simplex (6 Ports)	213-510-22
DIN rail housing version "Gf" 6x SC-Simplex (12 Ports)	213-510-25
DIN rail housing version "Gf" 6x ST-Simplex (6 Ports)	213-510-28
Cable gland M20 incl. Locknut	640-115-01
Cable gland M25 incl. Lock nut	640-115-02



19" DIN rail support 3 U

- for a recessed mounting of top hat rail enclosures at 19" levels of cabinets, racks or enclosures
- standard fitted with top hat rail TS 35 (width 425 mm)
- perfect to mount our top hat rail enclosures apraRail
- integrated cable guarding and strain-relief by cable clip bar

Material:

sheet steel 1.5 mm

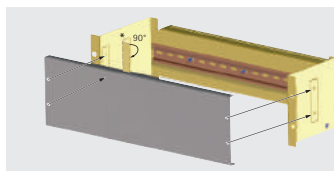
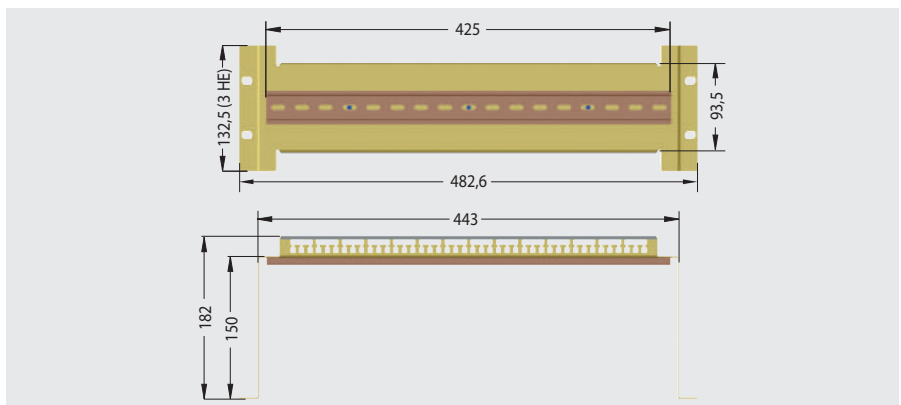
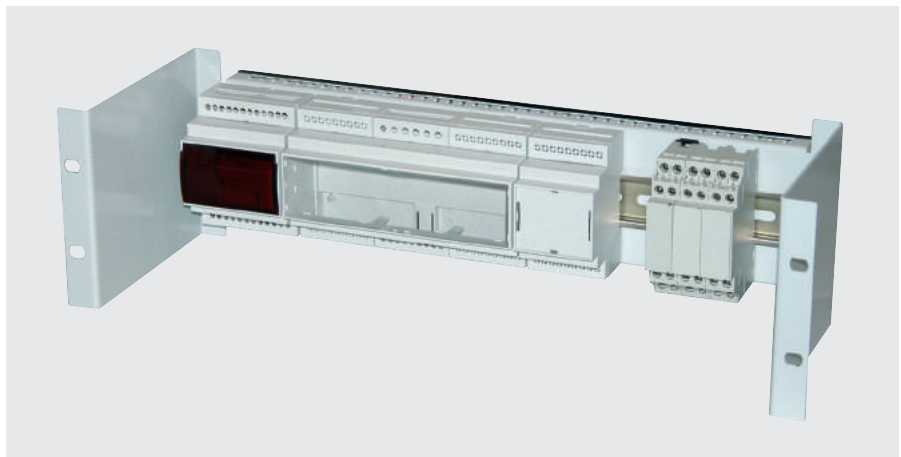
Finish:

galvanised resp.

RAL 7035 light grey

Delivery:

assembled

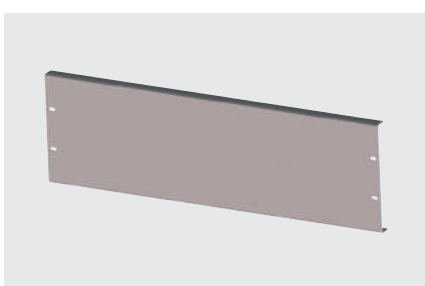


* To mount the cover, the lateral flaps can be bent up by hand in two different positions.

Other top hat rail types, installation widths, heights or depths available on request!

Finish	Order no.
verzinkt	205-420-00
RAL 7035	205-420-10

Cover (protection against contact)



- for 19" top hat rail support 3 U

Finish	Order no.
galvanised	205-420-20
RAL 7035	205-420-25

DIN rail fixing clamp (set)

- quick, safe and sturdy fixing of small enclosures, pc boards and components to rails and support rails (TS35)
- can be easily fixed from inside or outside to the rear panel
- 6 versions are available
- set = 10 pieces

Material: PA6 GF 30, black, flammability rating acc. to UL94 V-0

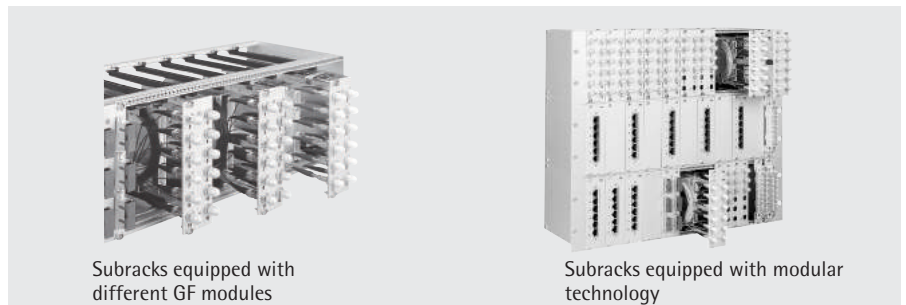
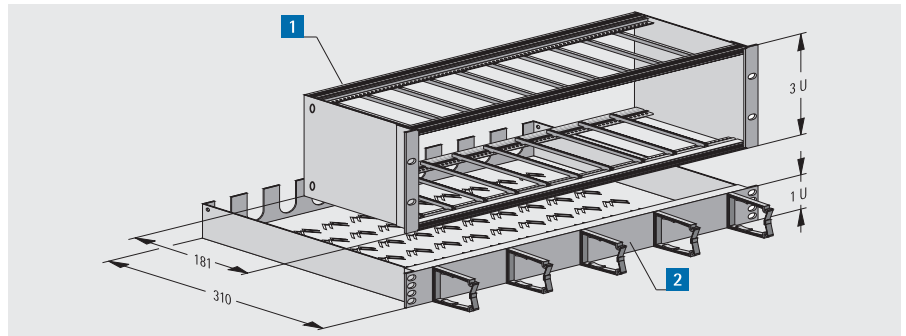


Description	Order no. (1 Set = 10 pieces)
45 mm wide with through hole	442-311-20
45 mm wide with threaded inserts	442-311-25
18 mm wide with through hole	442-311-30
18 mm wide with threaded inserts	442-311-35

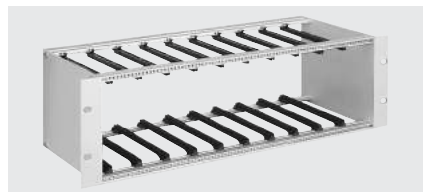


Modular technology

- system for accommodating fibre optics, CAT.6 and telephone modules
- ideal for very high packing densities
- based on a 19" subrack, which can accommodate up to 12 modules (7 HP per module)
- screw-on 19" FO shelf 1 U for secure cable feed through
- 5 front-mounted cable clips for neat horizontal switching
- compact and stable 4U component



1 19" subrack 3 U



- installation width 84 HP
- for the integration of up to 12 modules (with 7 HP module) including 24 plastic card guides
- includes mounting material

Material:

aluminium/plastic

Finish:

anodised/chromated

Dimensions (H x W x D):

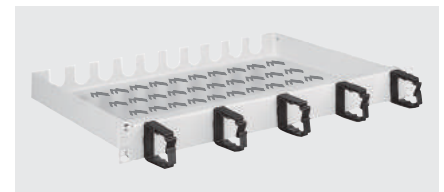
132,5 x 482,6 x 181 mm

Delivery

Item	pc.	Description
1	2	Front bracket
2	2	Side panels
3	4	Module rails
4	2	Threaded strips M 2.5
5	24	Card guides
6	1	Screw set M 5 x 8 (4x)
7	1	Mounting material

Order no.
213-084-00

2 19" shelf 1 U



- for accommodation of wire and cable lengths routed from the rear through slot openings. M 20 screw connections are used in the openings to hold the cables.
- perforated in the bottom area for unhindered air circulation and neat cable arrangements, e.g. with cable ties
- includes mounting material

Finish:

RAL 7035 light grey

Dimensions (H x W x D):

44 x 482,6 x 310 mm

Delivery

Item	pc.	Description
1	2	FO shelf
2	5	Cable conduit
3	1	Mounting material

Order no.
213-085-00



Empty fibre optic modules

The fibre optic modules (3 U, 7/8 HP) are ideal when high packing densities are required in professional distribution systems.

- an extended-length compartment is integrated on the opposite side of the splice cassette for accommodating spare wire lengths in the support panel.
- the front panel may be fitted with up to 12 numbered ST or SC couplings.
- wire pigtails are routed from the front panel to the extended-length compartment and from there via openings into the splice cassette.
- approx. 1 m of the colour-coded wires is deposited and stored here.
- a whole range of feed-through and retainer options are available in the extended-length compartment and splice cassette

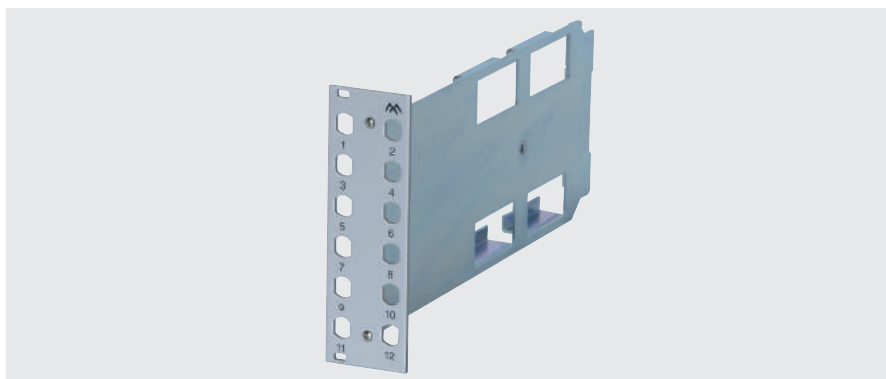
Material:

front panel: aluminium, anodised
support panel: sheet metal, galvanised

Dimensions (H x W x D):

3 U x 7/8 HP x 240 mm

Other module variants on request!



Delivery

Item	pc.	Description
1	1	Front panel with screw holder and neck collar screws M 2.5
2	1	Support panel with integrated extendedlength compartment
3	1	Splice cassette
4	1	Splice cassette cover
5	1	Mounting material

HP	Description	Order no.
8	12 x ST	213-120-10
8	12 x SC (6 x SC-duplex)	213-120-11
8	12 x E2000 (6 x duplex)	213-120-12
7	12 x SC (6 x duplex)	213-120-13
7	12 x E2000 (6 x duplex)	213-120-14
7	12 x E2000 (SC-simplex)	213-120-17

CAT.6A patch panel 6-way/12-way

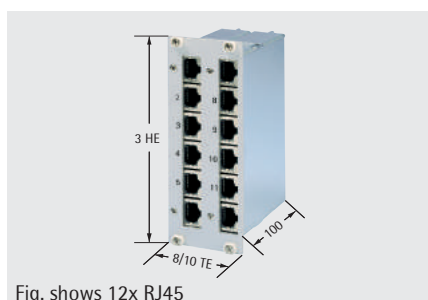


Fig. shows 12x RJ45

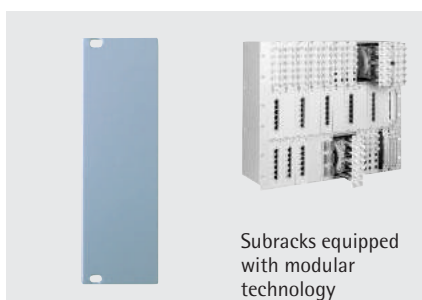
- shielded CAT.6 distribution panel
- 6-way RJ 45 (3 U / 8 HP) or 12-way RJ 45 (3 U / 10 HP)
- metal enclosure with large lowimpedance galvanised surfaces
- LSA Plus connecting system
- labelled aluminium front panel

Finish:

front panel: anodised
enclosure: galvanised

Description	Order no.
6-way distribution panel	213-503-10
12-way distribution panel	213-503-30

Blind/partial front panels 3 U



Subracks equipped with modular technology

- for fitting non-reserved pitches (HP) in the subrack

Material:

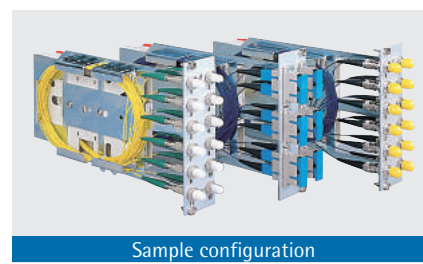
Aluminium 2,5 mm

Finish:

anodised/chromated

Feature	Order no.
Blindplatte 4 HP	243-304-00
Blindplatte 7 HP	243-307-00
Blindplatte 8 HP	243-308-00

Fibre optic modules pre-assembled



Sample configuration

Pre-assembly means:

- mounting of the coupling on the front panel and fixing of the pigtail
- secure laying of wires from the front panel to the splice cassette with sufficient
- wire lengths of approx. 1.5 m
- deposit of an additional approx. 1 m wire in the splice cassette
- storing of the coloured fibres in the splice cassette

We are also happy to offer you pre-made goods in the areas of "Fiberglass Modules" and "Splice Boxes". Ask us, we will gladly advise you!



19" FO splice box 1 U

19" FO splice box 1 U

- ease of use and installation for structured cabling using fibre optics
- modular construction allows you to choose between an extractable or built-in box with different front panels
- installation of the front panels either recessed or flush with the 19" level
- also available pre-assembled

Dimensions (H x W x D):

44 x 482,6 x 260 mm

(built-in)

44 x 482,6 x 313 mm

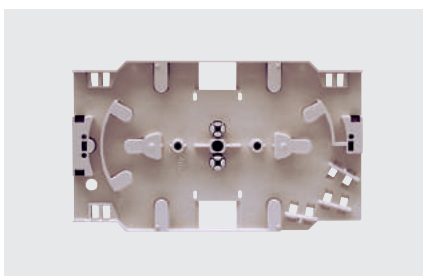
(extractable)

* These boxes are also suitable for the integration of an E2000 simplex mid-section. • FO splice boxes for other plug-in connectors on request!

Delivery

Item	pc.	Description
1	1	Drawer
2	1	Cover
3	1	Front panel

FO splice cassette/cover

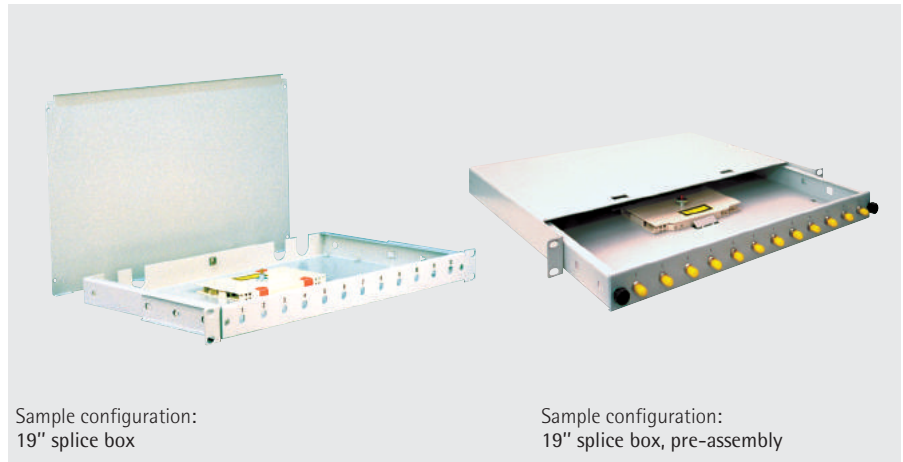


- FO splice cassette with 4 cabling and wire entry areas
- one angled entry area is designed with 3 retention options
- fibre hold-down devices are integrated in the splice cassette area for the fibre lengths

Material:

ABS

Description	Order no.
Splice cassette	640-400-01
Splice cassette cover	640-400-02
Splice protective sleeve	640-400-05



Sample configuration:
19" splice box

Sample configuration:
19" splice box, pre-assembly

Description	Feature	Order no.
12 x ST	19" FO splice box (built-in)	213-301-12
24 x ST	19" FO splice box (built-in)	213-301-24
6 x SC Duplex (12 Ports)	19" FO splice box (built-in)	213-302-12
12 x SC Duplex (24 Ports)	19" FO splice box (built-in)	213-302-24
12 x SC* simplex	19" FO splice box (built-in)	213-303-12
24 x SC* simplex	19" FO splice box (built-in)	213-303-24
12 x ST	19" FO splice box (extractable)	213-311-12
24 x ST	19" FO splice box (extractable)	213-311-24
6 x SC Duplex (12 Ports)	19" FO splice box (extractable)	213-312-12
12 x SC Duplex (24 Ports)	19" FO splice box (extractable)	213-312-24
12 x SC* simplex	19" FO splice box (extractable)	213-313-12
24 x SC* simplex	19" FO splice box (extractable)	213-313-24

Pre-assembly for 19" splice box 1 U

Of course, we also offer this box pre-assembled with fibre optics. This saves you time-consuming and costly on-site assembly.

Pre-assembly means:

- mounting of the coupling on the front panel and fixing of the pigtail
- secure laying of wires from the front panel to the splice cassette with sufficient wire lengths of approx. 1.5 m
- deposit of an additional approx. 1 m wire in the splice cassette
- storing of the coloured fibres in the splice cassette

Description	Order no.
1 x ST 50/125	214-321-01
1 x ST 62, 5/125	214-331-01
1 x ST 9/125	214-341-01
1 x SC 50/125	214-322-01
1 x SC 62, 5/125	214-332-01
1 x SC 9/125	214-342-01

Please order FO splice box and accessories separately!



19" copper distribution panels 1 U CAT.3/CAT.6A

- suitable for data transfers with transfer rates of up to 500 Mhz
- supports industrial use in accordance with EN 50081-2 and 50082-2 (only shielded models)
- connection of the wires via coloured LSA Plus IDC termination (in accordance with EIA/TIA 568A)
- large shield contact area on the shielded models directly on the circuit board using cable clips included, without the need for any additional twisting of the screen netting (with CAT.6 panel)
- distance between connecting terminals and shield contact on the circuit board eliminates any danger of short circuiting between screen netting and connecting wires
- cable strain relief with supplied cable ties without screws or any special tools
- consecutive front panel imprint

Material:

enclosure: sheet metal

shielding cap for shielded models:

stainless steel

Finish:

Front: RAL 7035 light grey

Other FO products available on request!

The components meet the requirements in accordance with ISO/IEC 11801 (Draft 2001) in class Channel E.

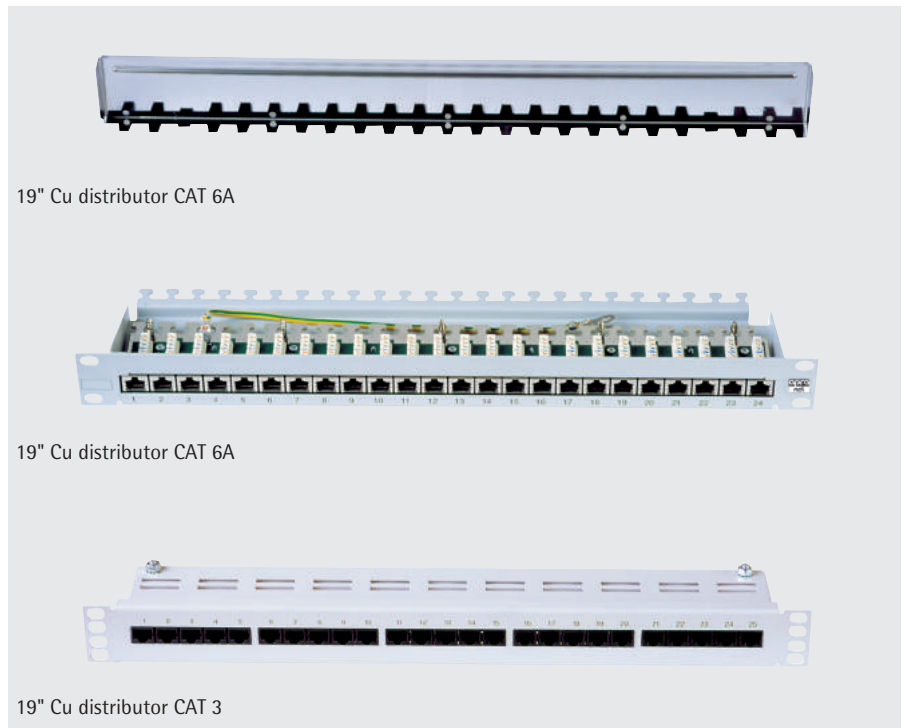
CAT.6A patch panel 6-way/12-way

- suitable for accommodation in a 19" subrack (see page XY) or in the LAN small distribution unit (see page XY)
- shielded CAT.6A distribution panel
- 6-way RJ 45 (3 U / 8 HP) or 12-way RJ 45 (3 U / 10 HP)
- metal enclosure with large lowimpedance galvanised surfaces
- LSA Plus connecting system
- labelled aluminium front panel

Finish:

front panel: anodised

enclosure: galvanised



19" Cu distributor CAT 6A

19" Cu distributor CAT 6A

19" Cu distributor CAT 3

Description	Order no.
25-way CAT.3, unshielded	213-504-10
24-way CAT.6, shielded	213-506-25

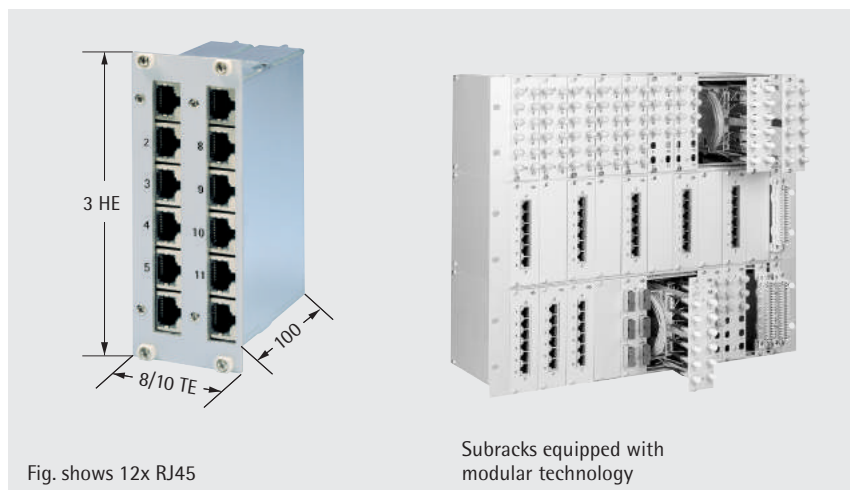





















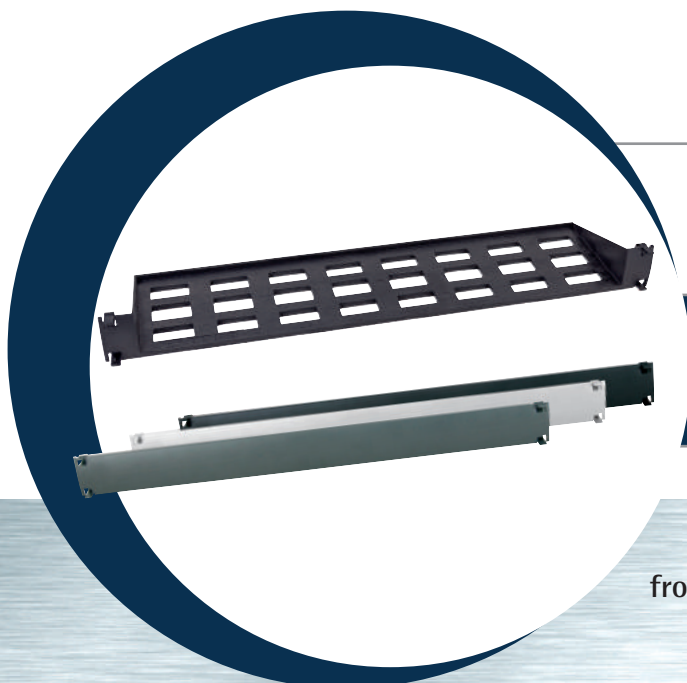
Fig. shows 12x RJ45

Subracks equipped with modular technology

Description	Order no.
6-way distribution panel	213-503-10
12-way distribution panel	213-503-30



	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	
	Air conditioning technology	from page 129	
	Power distribution system	from page 137	
	Cabinet monitoring	from page 155	
	Cable management	from page 163	
	Distribution technology	from page 169	
	General accessories / distribution technology	from page 177	

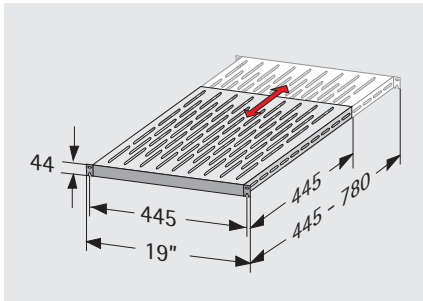


You can read more about products from the apra-group at www.apra-norm.com



19" shelves

19" shelf 1 U fixed installation "VARiplain"



- depth variable due to VARiplain technology
- telescopic: 445 - 780 mm (see fig.)
- simple one-person assembly through open long hole in the 19" front (hook-in)

Material:

sheet metal

Finish:

RAL 7035 light grey

RAL 9005 jet black

Load capacity:

150 kg (distributed load/static)

Dimensions (H x W x D):

1 U (44 mm) x 19" (482,6 mm) x 445 - 780 mm

Floor space (b x t):

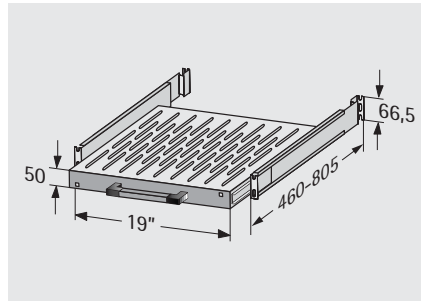
445 x (445 - 780) mm

Delivery:

mounting material included

Colour	Order no.
RAL 7035	316-036-99
RAL 9005	316-036-69

19" shelf 1.5 U "extractable"



- variable-depth installation
- extraction length 500 mm
- simple one-person assembly

Material:

sheet metal

Finish:

RAL 7035 light grey

RAL 9005 jet black

Load capacity:

60 kg (distributed load/static)

Dimensions (H x W x D):

1,5 U (66,5 mm) x 19" (482,6 mm) x 465 - 665 mm

Floor space (b x t):

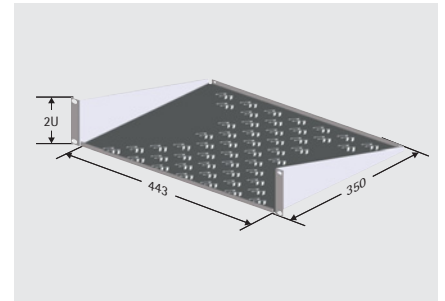
410 x (465 - 665) mm

Delivery:

mounting material included

D mm	Colour	Order no.
465	RAL 7035	318-141-00
665	RAL 7035	318-141-01
465	RAL 9005	318-141-50
665	RAL 9005	318-141-51

19" shelf 2U, fixed



- simple assembly on the 19" grid (only one 19" level required)
- ventilated

Material:

sheet metal

Finish:

RAL 7035 light grey

RAL 9005 jet black

Load capacity:

15 kg (distributed load/static)

Dimensions (H x W x D):

2 U (88 mm) x 19" (482,6 mm) x 350 mm

Floor space (b x t):

443 x 350 mm

Delivery:

mounting material included

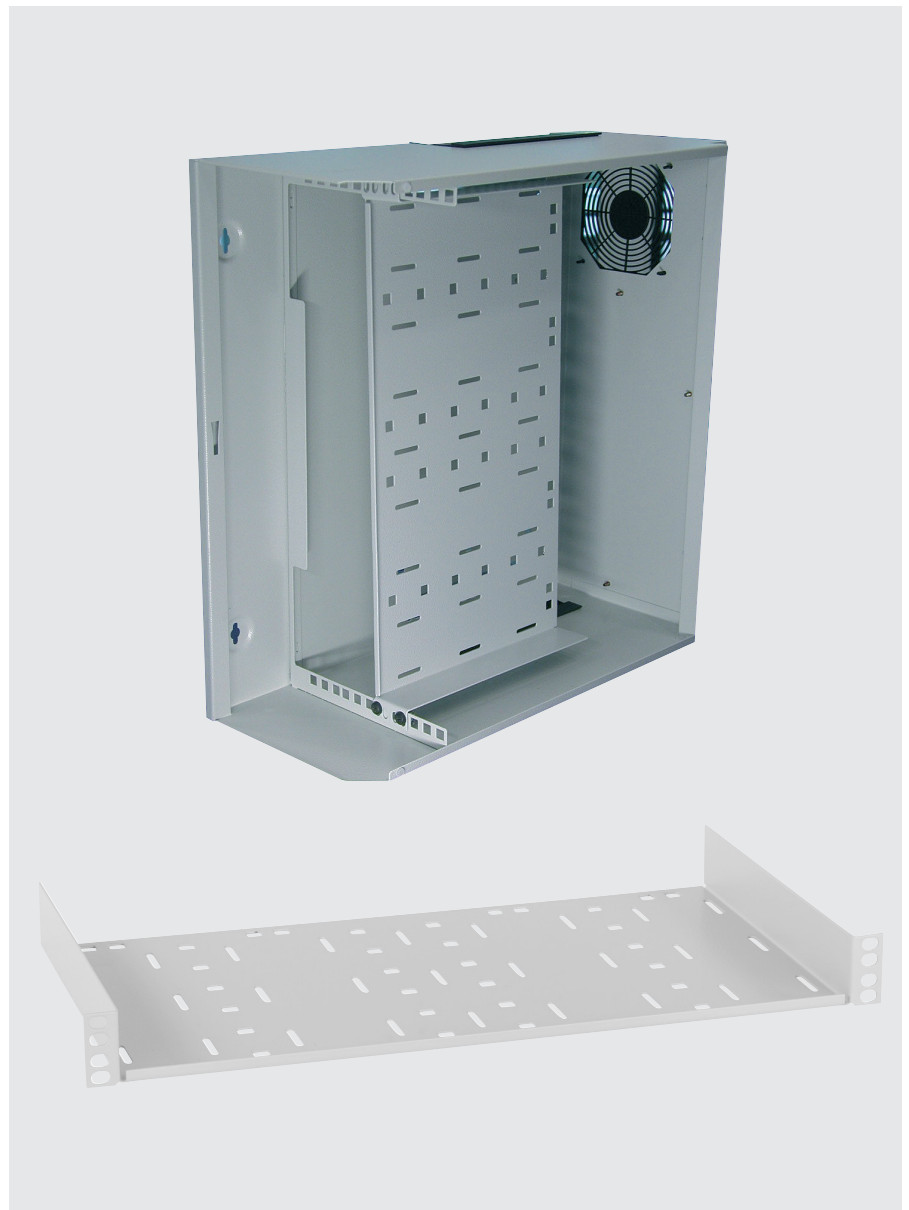
Colour	Order no.
RAL 7035	315-810-20
RAL 9005	315-810-25



Shelf 1 U, vertical

- for installation of **non-19"-compatible** components
- depth: 250 mm

Finish:
RAL 7035 light grey



Bestell-Nr.

213-030-22



19" blind panel

19" blind panel, plastic, 1 U



- air separation function: cost-saving and very effective option for reducing energy costs in data centres
- visual upgrade of the rack by concealing free 19" surfaces
- stylish design due to rounded front surface of the panel
- short assembly time: the blind panel is easily and without tools clipped into the 19" grid.
- can be removed and reinserted at any time without wear and tear and without tools
- protection against dust entry
- fire protection classification to UL94 V-0
- weight-saving in comparison to traditional metal panels

Material:

Lexan 920, fire class to UL 94 V-0, ROHS-compliant

Finish:

RAL 7016 anthracite grey, RAL 7035 light grey or RAL 9005 jet black

Delivery:

Set = 10 pieces

Set = 136 pieces

Colour	Lieferform	Order no.
RAL 7016	Set = 10 pc.	213-156-25
RAL 7016	Set = 136 pc.	213-156-40
RAL 7035	Set = 10 pc.	213-156-30
RAL 7035	Set = 136 pc.	213-156-45
RAL 9005	Set = 10 pc.	213-156-78
RAL 9005	Set = 136 pc.	213-156-79

19" blind panel sheet metal



Material:

sheet metal 1,5 mm

Finish:

RAL 7035 light grey

RAL 9005 jet black

Dimensions (H x W x D):

1-4 U x 482,6 x 10 mm

Delivery:

mounting material included

U	Colour	Order no.
1	RAL 7035	213-156-00
1	RAL 9005	213-156-10
2	RAL 7035	213-158-00
2	RAL 9005	213-158-10
3	RAL 7035	213-159-00
3	RAL 9005	213-159-10
4	RAL 7035	213-160-00
4	RAL 9005	213-160-10



19" drawers

- for secure storage of documents in 19" cabinets or enclosures
- extractable
- optionally available with lock
- 19" installation dimensions to IEC 60297-3-100

Material:

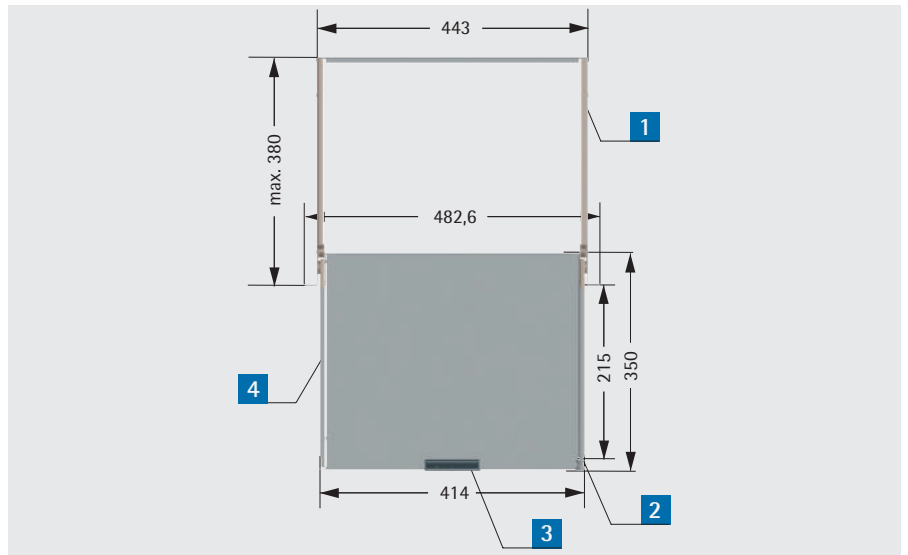
frame: sheet steel 1.5 mm
 drawer: sheet steel 1.0 mm

Finish:

RAL 7035 light grey

Delivery:

assembled, includes mounting material



Delivery

Item	pc.	Description
1	1	Installation frame
2	1	Drawer with front panel
3	1	Recess handle, black
4	1 pair	Single sliding mechanisms
5	1	Mounting material

U	H mm	D mm	Description	Order no.
1	44	378	without lock	202-219-50
2	88	372		202-219-53
3	132,5	372		202-219-56
1	44	378	with lock	202-219-60
2	88	372		202-219-63
3	132,5	372		202-219-66



19" keyboard plug-in unit 2 U

19" keyboard plug-in unit 2 U for standard keyboards

- keyboard plug-in unit with fold-down front panel
- accommodates all standard keyboards
- existing keyboards can be integrated in to the 19" rack, even if they are not 19"-compatible
- front-mounted, large, extractable mouse rest
- mounting on front and rear 19" level, whereby the clearance to the front/rear level can be individually adjusted from 445 mm up to 845 mm.
- 19" installation dimensions to IEC 60297-3-100
- from a cabinet depth of 800 mm

Application:

for use as an input console in 19" cabinets or user desks

Material:

sheet metal

Finish:

RAL 7035 light grey

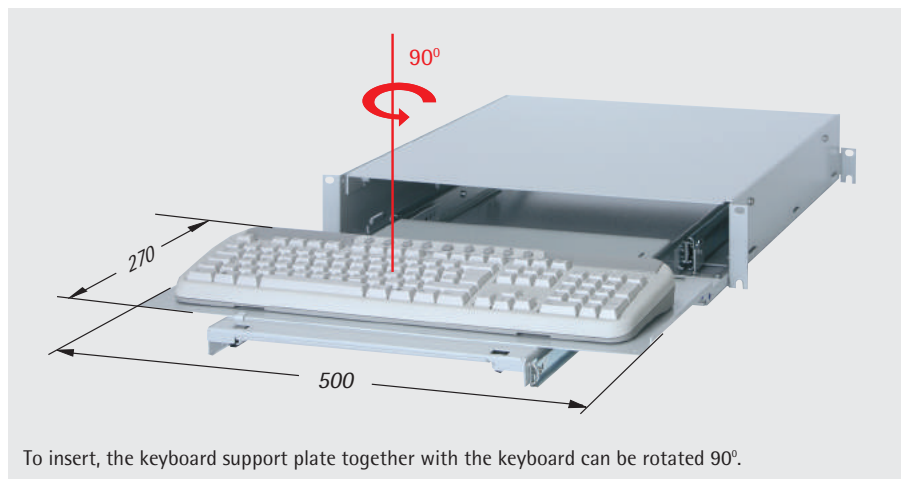
Dimensions (H x W x D):

2 U (88 mm) x 19" (482,6 mm) x 550 mm

Delivery:

assembled

- Keyboard is not included in the scope of delivery.
- The maximum height of the keyboard/mouse is 36 mm.

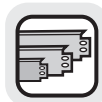


To insert, the keyboard support plate together with the keyboard can be rotated 90°.

Delivery

Item	pc.	Description
1	1	Chassis top cover
2	1	Drawer
3	1	Keyboard support plate, rotatable
4	1	Mouse rest
5	2	Telescopic rails
6	1	Front panel
7	1	Mounting material

Description	Order no.
19" keyboard plug-in unit 2 U	202-868-30



19" keyboard plug-in unit 1 U



19" keyboard plug-in unit 1 U

- low total height
- extractable
- with integrated, fold-down mousepad
- mousepad can be added on the left or right
- keyboards up to a width of 433 mm and a height of 36 mm can be used
- 19" installation dimensions to IEC 60297-3-100

Application

for use as an input console in 19" cabinets or user desks

Material:

sheet metal

Finish:

RAL 7035 light grey

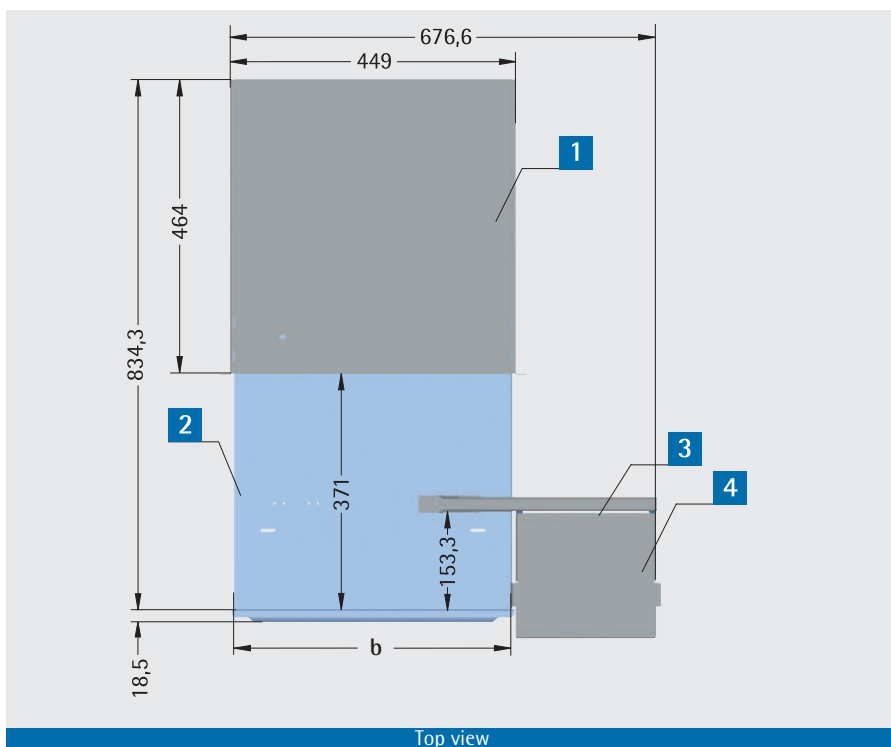
RAL 9005 jet black

Dimensions (H x W x D):

44 x 482,6 x 470 mm

Delivery:

assembled



- Mouse and keyboard are not included in the scope of delivery.
- The maximum height of the keyboard/mouse is 36 mm.
- Integration on slide rails is recommended.

Delivery

Item	pc.	Description
1	1	Chassis
2	1	Drawer
3	1	Mouse rest
4	1	Mouse pad
6	1	Mounting material

Description	Colour	Order no.
Plug-in unit without keyboard	RAL 7035	202-870-50
Plug-in unit without keyboard	RAL 9005	202-870-55



19" TFT keyboard plug-in unit 1 U

19" TFT keyboard plug-in unit 1 U with 17" display

The TFT keyboard plug-in unit includes all operating functions such as 17" LCD monitor, keyboard and touchpad in only one height unit. The server, PC and KVM-switch are connected via an adapter cable with a PS/2 interface or USB

- designed as a 19" component: extraction via high-quality telescopic rails
- with 17" display DDC 2 with max. resolution 1280 × 1024
- keyboard with separate number block and touch pad (PS/2)
- power supply 230 V / 50 Hz, can be switched to 120 V / 60 Hz

Finish:

black

Delivery:

includes operating instructions and power supply unit

Order no.
202-869-17



19" TFT keyboard plug-in unit 1 U with 17" display and KVM switch

- as above, but with a KVM switch to control 8 servers
- resolution: 1280 × 1024

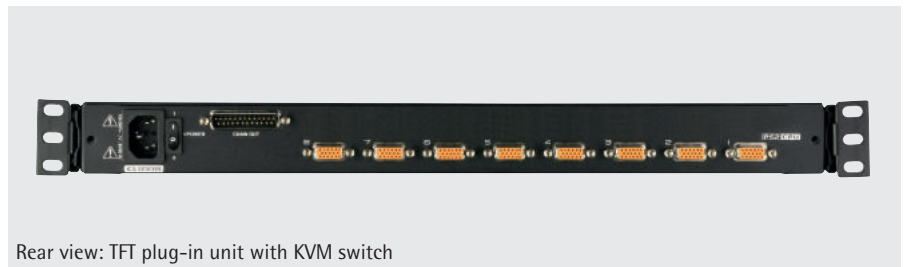
Finish:

black

Delivery:

includes operating instructions and power supply unit

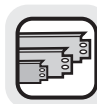
Order no.
202-869-19



Rear view: TFT plug-in unit with KVM switch

cables for TFT keyboard plug-in units

Description	Length m	Order no.
USB adapter cable from the KVM-switch to the server	1,8	202-869-35
	3,0	202-869-36
	6,0	202-869-37
PS/2 adapter cable from the KVM-switch to the server	1,8	202-869-26
	3,0	202-869-27
	6,0	202-869-28



19" DIN rail support 3 U



19" DIN rail support 3 U

- for a recessed mounting of top hat rail enclosures at 19" levels of cabinets, racks or enclosures
- standard fitted with top hat rail TS 35 (width 425 mm)
- perfect to mount our top hat rail enclosures apraRail
- integrated cable guarding and strain-relief by cable clip bar

Material:

sheet metal 1,5 mm

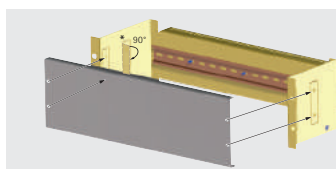
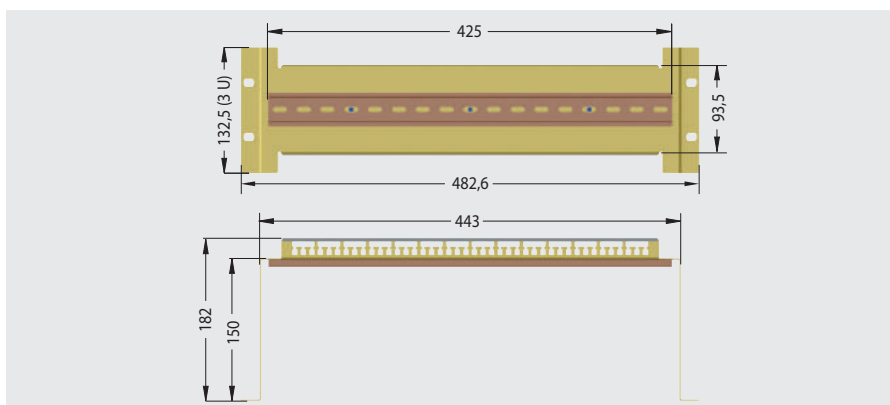
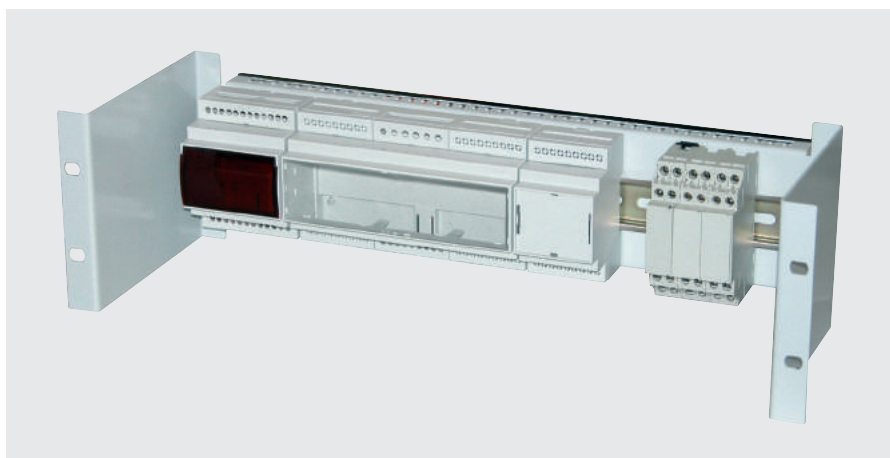
Finish:

galvanised resp.

lackiert RAL 7035 light grey

Delivery:

assembled



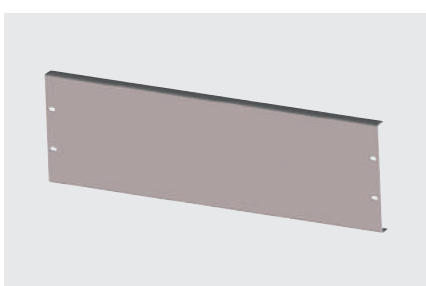
Cover (protection against contact)

* To mount the cover, the lateral flaps can be bent up by hand in two different positions.

Other DIN rail types, installation widths, heights and depths available on request!

Finish	Order no.
galvanised	205-420-00
RAL 7035	205-420-10

Cover (protection against contact)



- for 19" top hat rail support 3 U

Finish	Order no.
galvanised	205-420-20
RAL 7035	205-420-25

DIN rail fixing clamp (set)

- quick, safe and sturdy fixing of small enclosures, pc boards and components to rails and support rails (TS35)
- can be easily fixed from inside or outside to the rear panel

Material:

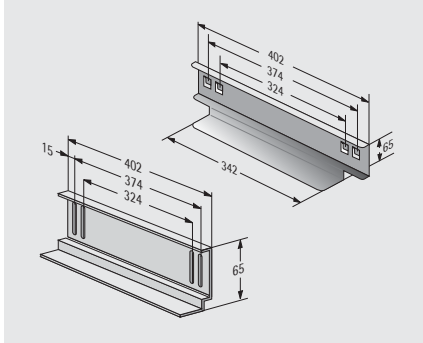
PA6 GF 30, black, flammability rating acc. to UL94 V-0



Description	Order no. (1 Set = 10 pc.)
45 mm wide with through hole	442-311-20
45 mm wide with threaded inserts	442-311-25
18 mm wide with through hole	442-311-30
18 mm wide with threaded inserts	442-311-35



Slide rail, screwable/hook-in



- for screwing/hinging into vertical mountings
- for placing heavy 19" plug-ins
- 2 vertical mountings are required for fixing
- Delivery: 1 pair

Material:

sheet metal, galvanised

Load capacity:

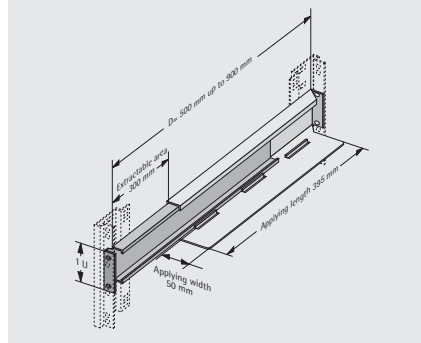
50 kg

Delivery:

mounting material included

Description	Order no.
screwable	312-544
hook-in	316-544-00

19" slide rail, variable depth



- for cabinet depths of 600 - 900 mm
- telescopic design: can be extracted/adjusted by 300 mm
- Delivery: 1 pair

Material:

sheet metal 1,5 mm, galvanised

Load capacity:

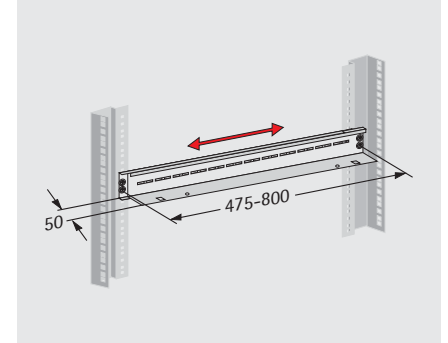
50 kg

Delivery:

mounting material included

Order no.
315-258-00

Slide rail, variable depth



- for 19" plug-in units irrespective of the clearance to the 19" levels
- depth-adjustable
- for use as of a cabinet depth of 800 mm
- Delivery: 1 pair

Material:

sheet metal 1,5 mm, galvanised

Load capacity:

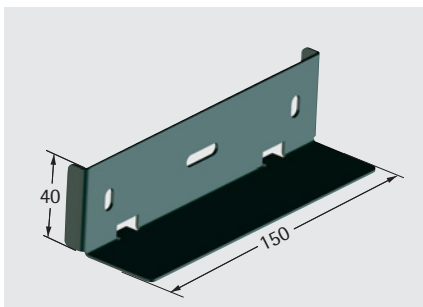
50 kg

Delivery:

includes mounting material

Order no.
316-544-20

Slide rail, short for 19" vertical mountings and pivot frames



- with only one 19" level or pivot frame
- delivery: 1 pair

Material:

sheet metal, 2 mm galvanised

Load capacity:

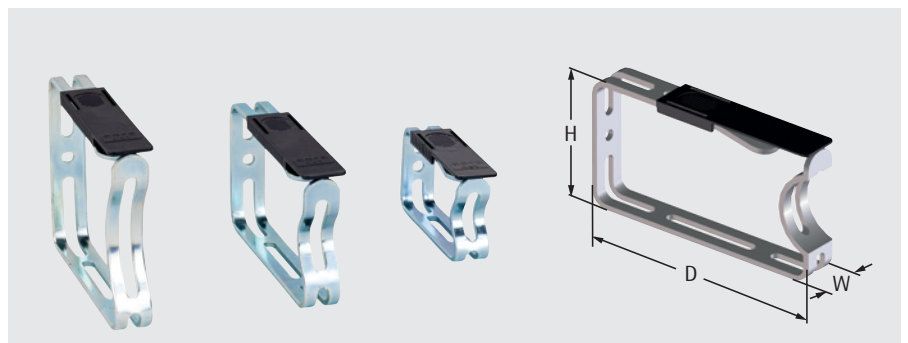
15 kg

Delivery:

includes mounting material

Order no.
318-129

Cable clamps, metal (set)

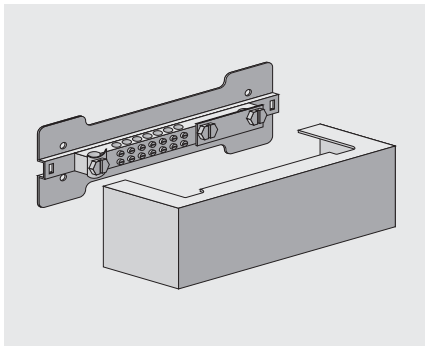


- for securing cables vertically to a 19" frame (for 800 mm wide cabinets)
- set = 10 pieces
- mounting material included

Dimensions (H x W x D) mm	Order no.
44 x 23 x 85	640-036-11
66 x 23 x 125	640-036-12
88 x 23 x 125	640-036-13



Potential equalisation rail



- covered

Delivery:

- 1 potential equalisation rail
- mounting material

Order no.
640-200-01

Noise absorption foam



- absorbs up to 10 dB(A) of sound in enclosures (e.g. fan noise)
- self-adhesive on one side
- thermal conductivity: 0.033 W/mk (acc. to DIN 52612)
- temperature range: -40 °C to +100 °C

Material:

PUR ester foam (10 mm): colour grey, with pattern of indentations, partially compressed (air permeable)

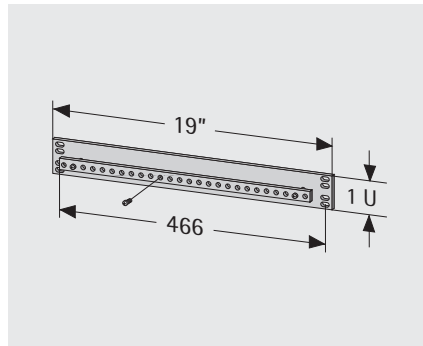
Delivery: unmounted

Delivery: 1 m²

If required, we will be happy to affix the noise absorption foam for you before delivering your cabinets or enclosures!

Order no.
671-211

19" Potential equalisation rail 1 U



- for 19" or cabinet rack installation
- connection options: 27 × M 5
- rail cross-section: 50 mm²

Material:

sheet metal/copper

Order no.
640-028-00

cabinet labeling



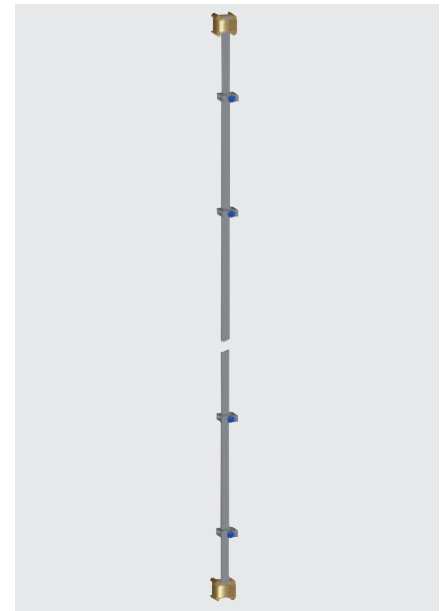
- Magnetic label for mounting on cabinets and enclosures
- optionally fixable with adhesive tape
- removable title block for customization

Delivery:

- Magnetic label for mounting on cabinets and enclosures
- Protective film transparent for magnetic profile 40 x 100 mm
- Adhesive tape, double-sided covered, B = 38 mm

Order no.
855-444

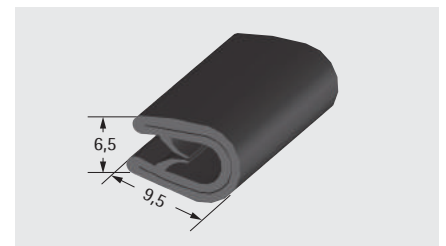
Potential equalisation bar 1 U



- 30 mm² incl. 10 pieces bail
- mounting material including

L mm	Order no.
2000	640-028-08
1800	640-028-10

Edge protection rubber band, flexible



- flexible to adapt to a wide variety of holes
- for sheet thickness 1-2 mm
- piece goods sold by the metre

Material:

rubber, black

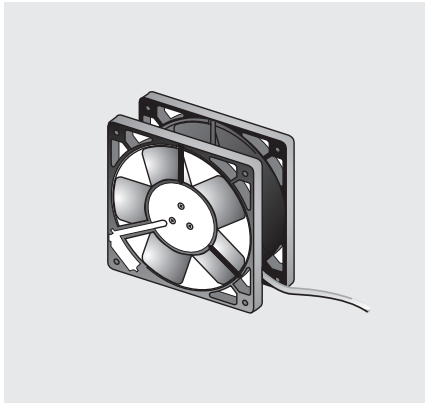
Delivery:

1m

Order no.
671-024



Fan 230 V

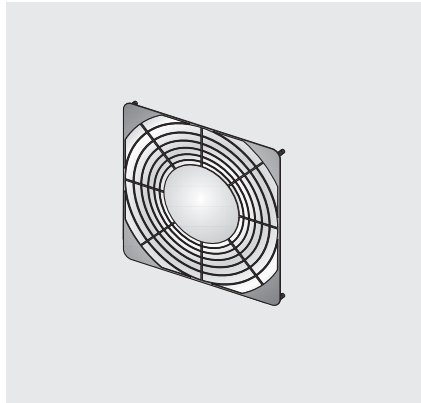


- air flow rate: 160 m³/h
- connecting cable L = approx. 310 mm
- dimensions: 119 × 119 × 38 mm
- noise level: 40 dB (A)
- mounting material included

Dimensions H x W x D:
119 x 119 x 38 mm

Order no.
230-803

Protective grille, plastic

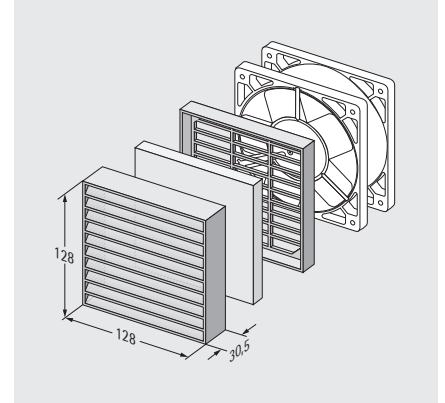


- suitable for all fans with dimensions W x H = 119 x 119 mm

Material:
plastic, black

Description	Order no.
screw on	230-818
clip-in	230-819

Outlet filter

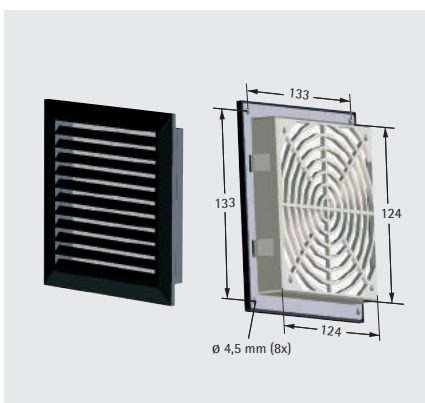


- for individual self-assembly on standard cabinet or enclosure
- outlet filters are preferably installed in conjunction with fans in the upper part of the cabinet

Delivery:
1 outlet filter complete with filter mat, excl. mounting material

Order no.
230-800

Outlet filter IP 54

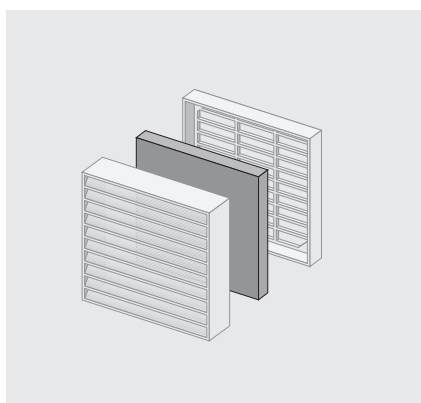


- suitable for fans W × H = 119 × 119 mm
- Dimensions H x W x D: 148 x 148 x (5,5 + 23) mm
- IP rating is achieved with vertical installation and overhead installation
- with filter mat and seal
- quick mounting: snap fastener
- can as an option be screwed on

Material: plastic, black

Order no.
230-780

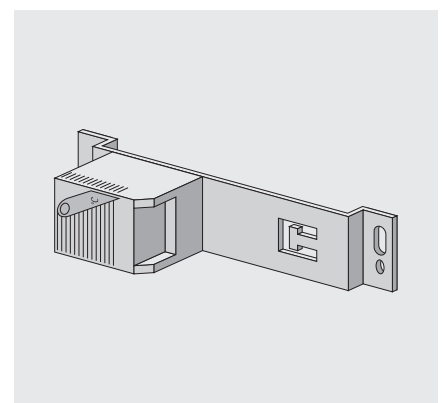
Spare filter mat



- suitable for outlet filters type 230-800 and 230-780
- Dimensions: 120 × 120 mm

Order no.
230-800-01

Thermostat 230 V



- with mounting bracket and integrated strain relief
- control range 0 - 60 °C
- includes mounting material

Order no.
315-804



Door contact switch



- for switching cooling devices etc. on and off
- includes mounting material

Order no.
640-071-00

LED cabinet light

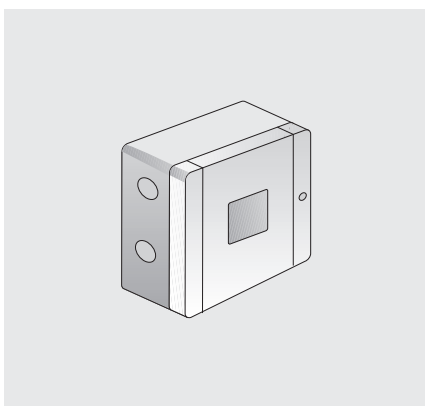


- cost-optimised LED technology with a power consumption of 5 W (light intensity equivalent to a 75 W light bulb)
- internal power supply unit with wide range voltage 100 - 230 V / AC
- long-life and no maintenance (service life at 20 °C = 60,000 h)
- magnetic attachment for individual mounting in the cabinet
- pressure clamp connection

Connections must be ordered separately!

Description	Order no.
LED cabinet light with switch	640-143-05
LED cabinet light with motion detector	640-143-06
Connection with Euro plug, L = 2,5 m	640-143-08

Terminal box



- for use as a cable distribution box
- simple and quick installation

Order no.
640-059

Document pocket



- self-adhesive
- heat-resistant up to 60 °C
- load capacity of up to 3 kg
- your company's logo can be affixed

Dimensions (H x W x D):

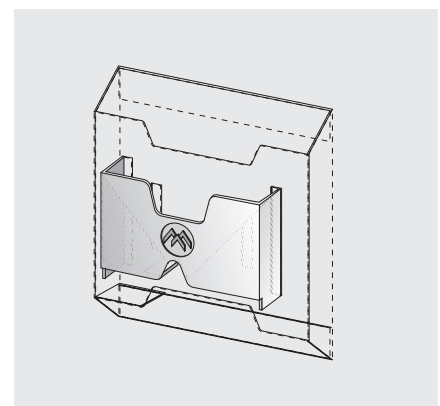
235 x 260 x 27 mm

Material:

plastic, black

Order no.
640-100

CD holder for document pocket



- can be hung in the document pocket

Material:

Aluminium

Finish:

RAL 7035 light grey

Order no.
640-100-10



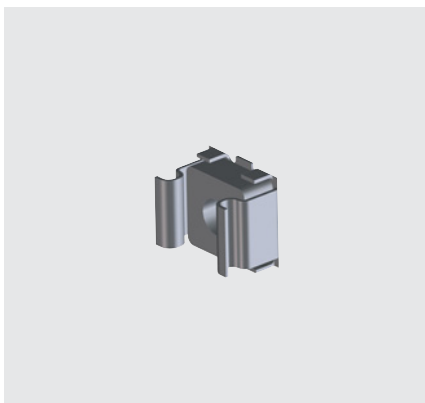
Screw set M5 / M6 (set)



- necessary for mounting of 19" components into racks or enclosures
- included in delivery:
 - 50 oval head screws M 5 x 12 / M 6 x 16
 - 50 cage nuts M 5 - 8 / M 6 - 8
 - 50 rosettes for lens screws M 5 / M 6, flattened according to standards

Description	Order no.
M 5	630-991
M 6	630-994
Torx M 6	350-001-20

Cage nuts M 5 / M 6 (set)



- set = 100 cage nuts
- sheet thickness 1.8 - 2.6 mm

Finish:
galvanised

Description	Order no.
Cage nuts M 5	630-362
Cage nuts M 6	630-363

TiRAX screw set



- for rotating mounting in in the TiRAX cabinet racks

Delivery:
each with 20 x special cage nuts M 6, lens head screw M 6 x 16 and washers

Order no.
630-998

"Universal" velcro strip



- for quickly securing **non 19"-compatible** components
- length: 300 mm, width: 20 mm
- back to back mounting
- set = 10 pieces

Material:
velcro, black

Order no.
671-122-08

19" plug-in nut M5



- For mounting in 19" grid rails with a standard breakthrough 9,5 x 9,5 mm (square perforation)

Material:
Threaded insert, galvanised steel
Plastic housing:
PA (UL-certificate)
Finish: plastic (black)
thread use: galvanised

Description	Order no.
set 4-fold	631-555-04
set 50-fold	631-555-50

Velcro mount "universal"



- used to accommodate velcro up to w = 20 mm
- for screws M 4 (not included)
- set = 10 pieces

Material:
plastic, black UL94 V-0

Order no.
583-001-08

Our service all comes from a single source:

- ✓ take advantage of our expertise
- ✓ save time and money

Air conditioning, power supply, cable entry solutions, plug-and-play versions and pre-wiring for enclosures and cabinet systems

At the apra Group, we place particular emphasis on individual and flexible system solutions. Our enclosures and 19" cabinet systems are equipped with components such as a power supply/distribution system and air conditioning technology in line with customer requirements and are supplied with full pre-wiring on request. This enables us to fulfil the most challenging of customer requirements.

From development right through to the finished product, you can benefit from our expertise and flexibility!

Additional accessories for your cabinet and enclosure system can be found here:



Multiple socket strips and other power supply components can be found in the section "Power distribution" from page 137.



A wide range of ventilation and air conditioning components can be found in the section "Air conditioning technology" from page 129.



Suitable cable routing solutions such as cable clamps, patch bays, etc. can be found in the section "Cable management" from page 163.





WE GIVE YOUR DATA A SAFE HOME

Optimum protection, maximum safety, efficiency and reliability: apraNET offers you a wide selection of high-quality products from its own production on the basis of state-of-the-art manufacturing technologies – and in addition a great deal of flexibility in implementing individual wishes.



apraNET equips the Enervie Group's data center with the NETcell cabinet system.

With 1.500 employees in North Rhine-Westphalia, the Enervie Group supplies around 400.000 customers with electricity, gas, drinking water and energy-related services. The headquarters of Enervie Südwestfalen Energie und Wasser AG is located in Hagen. The modern data center and additional technical rooms were equipped with 68 NETcell cabinet systems in 2014.



The cabinet system NETcell, nominated for the German Data Center Award, inspires the technical managers at Enervie with the well thought-out cable management system, the high load capacity of far more than one ton and the simple installation. Due to the complete disassembly, installation and final assembly can also be carried out in locations that are difficult to access. Based on the integration of the modular enclosure components, Enervie also takes advantage of the NETcell system for energy- and cost-efficient data center air conditioning.

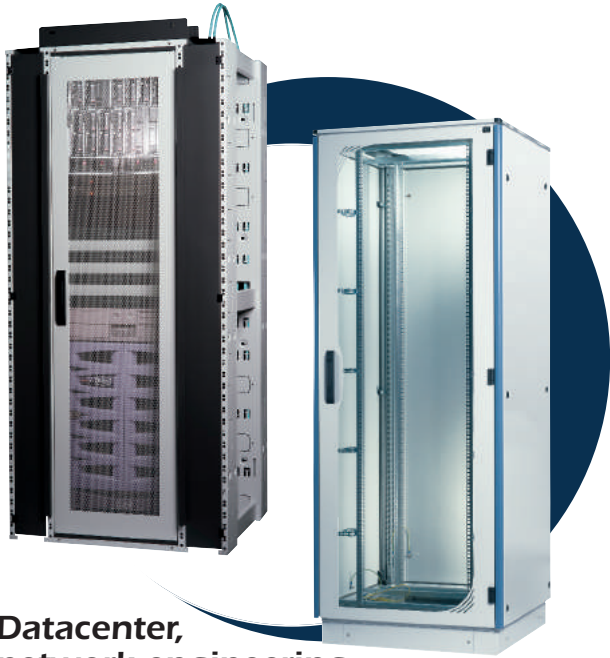
The FernUniversität in Hagen relies on products from apraNET.

The FernUniversität in Hagen is the first and only distance learning university under public law in Germany. With around 77.000 students, it is also Germany's largest university. By awarding degrees such as Bachelor, Master and Doctorate, the FernUniversität in Hagen represents a real alternative to attendance based studies and represents the trend towards lifelong learning.



© FernUniversität / Mette

In 2012 and 2013 the university computer centre was equipped with the NETcell cabinet system specially developed for the data center sector. Especially the flexible installation and mounting options as well as the customer-specific adaption of enclosure components to the data center infrastructure convinced the IT managers at the University of the apraNET products and services. Through the field service on-site, the extensive consultation by the office service as well as the own assembly and installation service apraNET was a reliable partner to the university during the entire project.



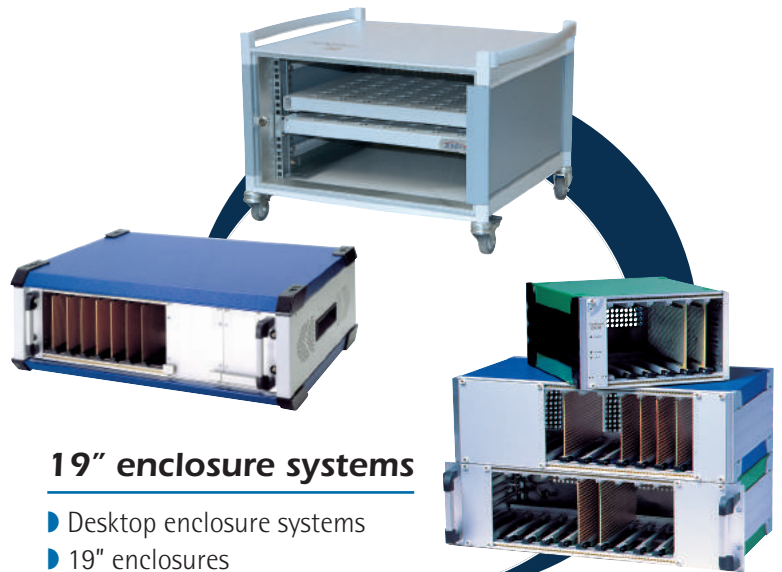
Datacenter, network engineering and industrial applications

- ▶ 19" cabinet system TiRAX
- ▶ 19" cabinet system NETcell
- ▶ Wall enclosure systems
- ▶ Wall-mounted and free-standing distributors
- ▶ Power Supply/PDU, Air Conditioning and cable management



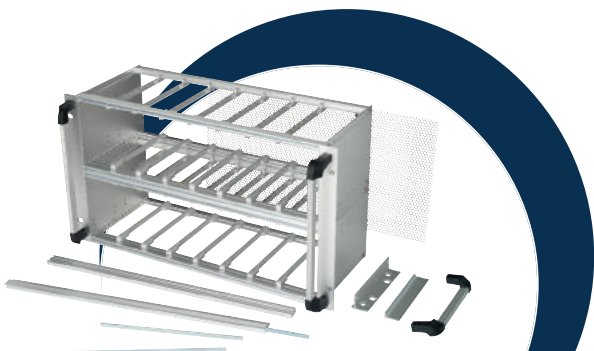
19" plug-in systems

- ▶ 19" computer plug-in units
- ▶ 19" front and blind panels
- ▶ 19" universal plug-in units
- ▶ 19" printed circuit boards
- ▶ 19" display, keyboard and fan plug-in units



19" enclosure systems

- ▶ Desktop enclosure systems
- ▶ 19" enclosures



19" electronic module systems

- ▶ Subracks 1-14 U, VME, Compact PCI, Advanced TCA
- ▶ EMC subracks
- ▶ Customer-specific subracks
- ▶ Cassettes, plug-in modules, partial front panels





Housing for Maker Boards

- ▶ **customized enclosures**
for Embedded NUC, Raspberry Pi, Arduino, Banana Pi, Nano ITX, Pico ITX, Smarc, ...



Small enclosure systems

- ▶ Modem enclosures
- ▶ Profile small enclosures
- ▶ Console enclosures



Panel instrument cases and top hat rail enclosures

- ▶ Enclosures in accordance with IEC 61554
- ▶ Plastic injection moulding
- ▶ Plastic mould construction



Plastic enclosures

- ▶ individual plastic housing without tool costs
 - ▶ even the most unusual shape and material requests are possible
 - ▶ from 1 - 100.000 pc. in different techniques
 - ▶ **3D-Printing:** Your Fast Track to Prototyping
 - ▶ **Digital printing:** fast, flexible and inexpensive
 - ▶ Front membranes and membrane keypads
 - ▶ Material mix: the perfect combination of plastic and metal



Whether it be metal or plastic, standard or customer-specific - we can help you plan the optimum shell for your valuable electronics. Contact us to find out more!

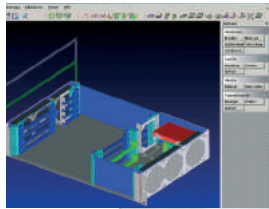




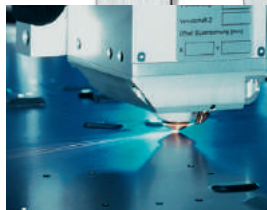
A holistic approach

With our expertise and ultra-modern machinery, we can develop, produce and assemble the perfect enclosure for you.

1. DEVELOPMENT

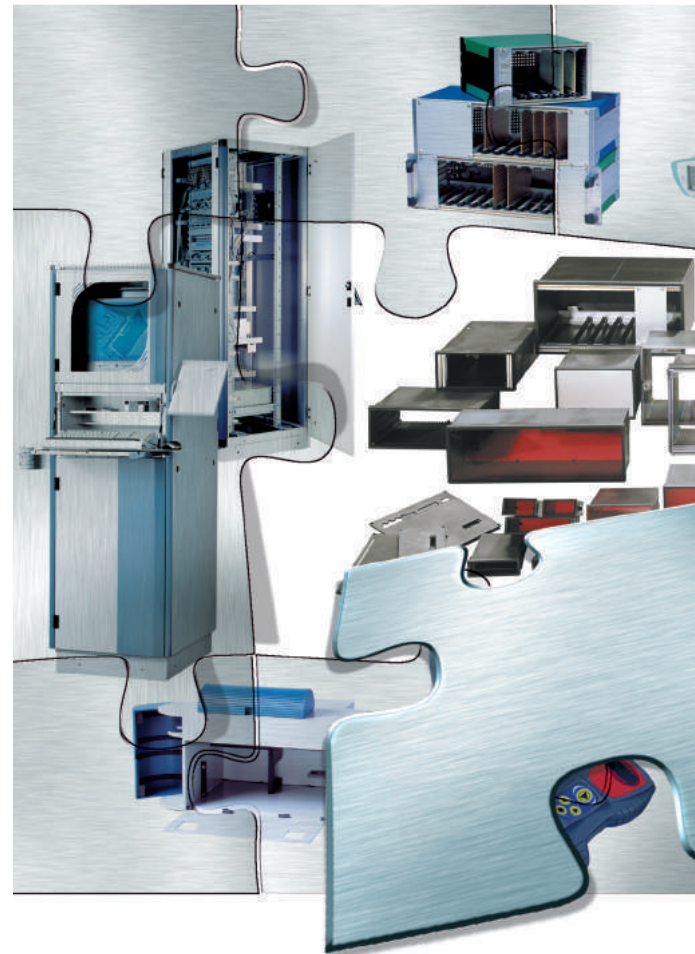


- 3D design
- Construction
- Testing and simulation (EMC, IP, trial, etc.)
- Consulting and technical support



2. PUNCHING/ PRESSING TECHNOLOGY

- Laser cutting
- Punching/pressing
- Imprinting



3. BENDING TECHNOLOGY

- Robot-supported bending
- Crimping
- Deposit



4. PLASTICS PROCESSING

- Milling and bending technology
- Vacuum casting technology (SYN-PRO tech)
- Cast moulding technology (GIEFO tech)
- Injection moulding
- Rapid prototyping



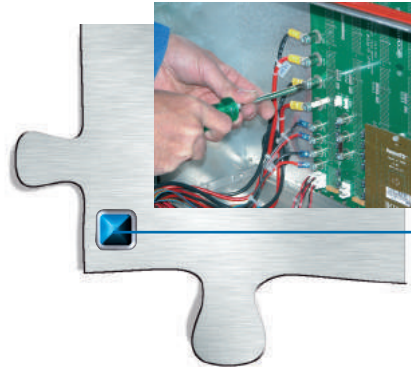
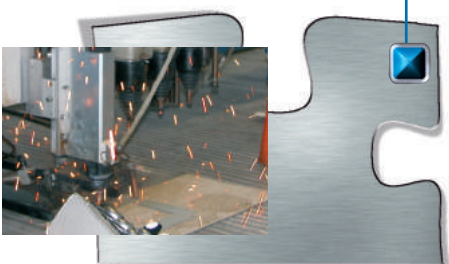


to production



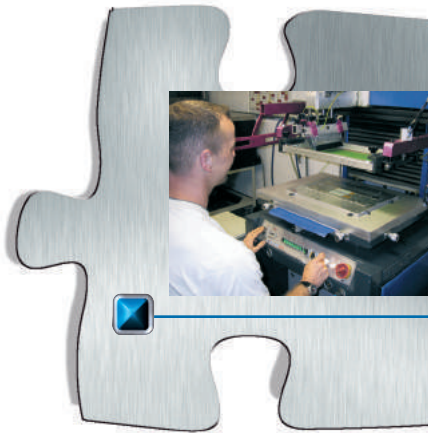
5. JOINTING TECHNOLOGY

- Robot-supported welding
- Press-fitting
- Pressure joining
- Riveting



8. ASSEMBLY

- Assembly service
- Pre-wiring
- Cable configuration
- System integration



7. LABELLING

- Screen printing
- Digital printing
- Pad printing
- Sub-oxal printing
- Films and membrane keypads

6. SURFACE TECHNOLOGY

- Powder coating
- Wet painting
- Chromating
- Conductive paint coating
- Nano paint coating



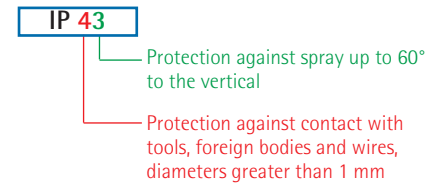


IP protection classes in accordance with DIN EN 60529

In order to ensure reliable operation, all electronic devices and systems must be protected against possible interference. Enclosures and/or cabinets must therefore fulfil certain protection requirements depending on the area of application. These requirements are specified in

the standards DIN EN 60529 with IP protection classes (IP = international protection). They indicate the capacity of an enclosure to protect installed components against contact and the ingress of foreign bodies and water. The first digit of the IP protection class defines the degree of protection against contact and foreign bodies, while the sec-

ond digit indicates the degree of water protection. The table below shows the meaning of the individual numbers



Degrees of protection in accordance with DIN EN 60529

Protection against contact and foreign bodies			Protection against ingress of water	
First digit	Contact	Foreign bodies	Second digit	Contact
0	No protection	No protection	0	No protection
1	Protection against contact with larger body parts	Protection against large foreign bodies, diameters greater than 50 mm	1	Protection against water dripping vertically
2	Protection against finger contact	Protection against medium-size foreign bodies, diameter greater than 12.5 mm	2	Protection against water dripping at an enclosure angle up to 15° to the vertical
3	Protection against contact with tools and wires, diameters greater than 2.5 mm	Protection against small foreign bodies, diameter greater than 2.5 mm	3	Protection against spray up to 60° to the vertical
4	Protection against contact with tools and wires, diameters greater than 1 mm	Protection against granular impurities, diameter greater than 1 mm	4	Protection against splash water from any direction
5	Full protection	Protection against harmful dust deposits	5	Protection against jet water from any direction
6	Full protection	Protection against dust entry	6	Protection against heavy jet water from any direction
			7	Protection when temporarily immersed in water
			8	Protection when immersed in water for an extended period



Certification

The apra Group relies on innovative products of high quality, which form the basis of the continually growing corporate group. A sound quality and environmental management system is a prerequisite for this.

Independent proof of this system is provided by means of a certificate issued when a company can prove by means of an audit that all requirements arising from the DIN standard have been met.

One of these requirements is, for example, that all processes are documented clearly, transparently and in full.

The apra Group can produce proof of certification of its quality and environmental management system for all locations.

DIN EN ISO 9001:2015 is a standard that regulates the selection and installation of a quality management system within a company.

DIN EN ISO 14001:2015 is the environmental standard. It is awarded when a company complies with all environmental aspects.

The management systems described in a management manual for quality and the environment set out all organisational measures to ensure that all products comply with the rules and regulations to be applied as agreed and function as intended during operation.

The apra Group undertakes to comply with the environmental requirements and to continuously improve its environmental protection. Compliance with the environmental protection policy is monitored regularly.

The certificates issued are checked annually by TÜV to ensure they are valid.

A quality management system certified in accordance with the standard proves to the customer that the supplier will deliver good products in compliance with its own rules.

These certificates significantly reduce the cost for the verification of suppliers and customers on both sides.



Approvals



Verein Deutscher Elektrotechniker



Conformité Européenne



Geprüfte Sicherheit



Underwriters Laboratories



Canadian Standards Association



Technischer Überwachungsverein



Terms of Delivery and Payment



1. Application

- 1.1 These terms and conditions of sale shall apply exclusively. Differing or contrary terms shall not apply except if expressly agreed upon in writing.
- 1.2 These terms and conditions of sale shall also govern all future transactions between the parties and shall also apply if we perform delivery despite our knowledge of differing or contrary terms.
- 1.3 These terms and conditions of sale shall only apply vis à vis entrepreneurs, governmental entities, or special governmental estates within the meaning of sec. 310 para. 1 BGB (German Civil Code).

2. Offer, Acceptance

- 2.1 Our offerings are subject to change, the agreement shall only come into effect upon receipt of our order confirmation or when the order is carried out. Changes in price or cost (e.g. salary increases as agreed by collective agreement or material cost increases) entitle us to adjust our prices. Provided such change occurs after an order confirmation, we are entitled to withdraw, as far as the customer does not agree to a price adjustment.
- 2.2 The cabinets and enclosures depicted are configuration examples. These are not identical with the scope of delivery. The right to make technical changes is reserved.

3. Prices, Payment

- 3.1 Except as otherwise stated under the terms of any quotation or unless otherwise agreed in writing all prices are ex works („ex works“, Inco-terms® 2010), exclusive of the respective statutory VAT and exclusive of costs for packaging. Transport and packaging costs will be calculated separately, and the respectively applicable VAT applied separately.
- 3.2 The purchase price is due and payable net within 30 days from the date of the invoice. From the due date default interest in the amount of 9% above the respective base interest rate p. a. shall accrue. We reserve all rights to claim further damages for delay.
- 3.3 Payments to agents or our employees shall only be effective if a written authorization to receive money or a receipt from us is submitted.
- 3.4 First orders to new clients shall generally only be made with cash on delivery (standard products) or with advance payment (customized products). We reserve the right to specify the terms of payment for future deliveries after submission of a completed customer data-sheet and credit assessment.

4. Offset, Retainer

The customer shall be entitled to offset or to claim retainer rights only insofar as the customer's counterclaim is acknowledged, undisputed or assessed in a legally binding judgment. Additionally, the customer is entitled to claim retainer rights only to the extent such rights are based on the same transaction.

5. Delivery

- 5.1 Delivery of the goods shall be made by the customer collecting the goods at our premises after we have notified the customer that the goods are ready for collection („ex works“, Inco-terms® 2010) or, if agreed otherwise by us delivering the goods to the agreed place. Delivery is conditioned upon timely and proper performance of all duties of the customer. Defences based on non-performance of the contract are reserved.
- 5.2 In case of default in acceptance or other breach of duties to cooperate by the customer we are entitled to claim any resulting damage including but not limited to additional expenses, if any. Further damages are reserved. In this case, the risk of loss or damage to the goods passes to the customer at the time of such default or breach of duty to cooperate.
- 5.3 In the event that the financial circumstances of the ordering party deteriorate significantly (e.g. protest of bill of exchange, application to open insolvency proceedings, submission of affidavit, etc.) as well as any disclosure of insufficient credit worthiness, we are entitled to request advance payments or the provision of security or to withdraw from the agreement.

6. Passing of Risk, Shipment

- 6.1 Risk of loss or damage to the goods shall pass to the customer as follows:
 - In the case of goods to be delivered otherwise than at our premises, at the time of delivery, or if the customer wrongfully fails to take delivery of the goods, the time when the seller has tendered delivery of the goods;
 - In the case of goods to be delivered at our premises („ex works“. Incoterms® 2010) at the time we notify the customer that the goods are available for collection.
- 6.2 Unless otherwise specifically agreed upon, the means of transportation (shipping company, package service, post, etc.) shall be selected by us.
- 6.3 The delivery deadline is kept if, by its expiration, the subject of the agreement has left the factory or if we have declared that the subject of the agreement is ready for dispatch.
- 6.4 If we fall in default of delivery, we shall have an extension period of two weeks. In the case of force majeure (e.g. operational failures, difficulties with raw materials, war, strikes, etc.), we are released from the delivery deadline.

7. Withdrawal, Request of Partial Delivery

- 7.1 If our contractual partner withdraws unauthorized from the agreement or unauthorized refuses satisfaction of the agreement, the contractual partner shall be obligated to pay 15% of the gross value of the order as a lump sum in compensation unless it can prove that no damages were incurred or that damages were not incurred in this amount. The right to claim further damages is expressly retained.
- 7.2 Orders may then only be requested for delivery in partial quantities if this has been expressly previously agreed. Partial deliveries are excluded if the total order value is less than € 2,500.00 net, the term of the order is over six months and a single request for delivery amounts to a delivery value of less than € 1,000.00 net. If the ordering party withdraws unauthorized from the agreement, refuses satisfaction of the agreement or we are entitled to claim for damages, the regulations of aforementioned paragraph 1 shall apply. If we request neither satisfaction nor damages, we reserve the right to recalculate the prices of the quantities requested for standard parts, at the prices which would have been calculated had the order been restricted to this quantity at the onset. If the order concerns customized

products, we insist on satisfaction of the order in any eventuality. Prices offered or confirmed for larger procurement quantities can not be claimed for smaller quantities. Decreased or increased efficiency of 10% of the order volume is permissible for customized products.

8. Retention of Title

- 8.1 We retain title to the delivered goods until receipt of all payments in full regarding the purchase agreement. In case of breach of contract by the customer including, without limitation, default in payment, we are entitled to take possession of the goods.
- 8.2 Aforementioned title retention shall also apply to all claims from current and future business connections with the customers, including any current accounts.
- 8.3 The customer shall handle the goods with due care, maintain suitable insurance for the goods and, to the extent necessary, service and maintain the goods.
- 8.4 As long as the purchase price has not been completely paid, the customer shall immediately inform us in writing if the goods become subject to rights of third persons or other encumbrances.
- 8.5 The customer may resell goods subject to the above retention of title only in the course of his regular business. For this case, the customer hereby assigns all claims arising out of such resale, whether the goods have been processed or not, to us. Notwithstanding our right to claim direct payment the customer shall be entitled to receive the payment on the assigned claims. To this end, we agree to not demand payment on the assigned claims to the extent the customer complies with all his obligations for payment and does not become subject to an application for insolvency or similar proceedings or to any stay of payments. Storage of goods delivered under retention of title shall be at the cost and risk of the customer. Decrease in value of such goods shall be borne by the customer.
- 8.6 Insofar as the above securities exceed the secured claim by more than 20%, we are obligated, upon our election, to release such securities upon the customer's request.

9. Warranty

- 9.1 The customer is obligated to inspect the goods immediately upon receipt of delivery and to submit defects or deviations in quantity without delay - at least within 5 days of receipt of delivery - to us in writing. The deadline shall be met by receipt of the report of defects to us. Otherwise, the goods shall be deemed as accepted and approved regarding such defect or deviation in quantity. If defects or deviation in quantity are not recognized during the inspection mentioned above and are established later, declaration thereof must be made without delay within one week after discovery at the latest. Otherwise, the goods shall be deemed as accepted and approved also as regards such defect or deviation in quantity.
- 9.2 In the event of founded complaints, we resolve at our discretion pursuant to sec. 439 BGB (German Civil Code) the defect or deliver a replacement. If resolution of a defect fails, the ordering party can demand delivery of a defect-free product or reduction of the purchase price or withdraw from the agreement.
- 9.3 If inspection of a complaint determines no defect, we are entitled to charge the ordering party for the costs incurred.
- 9.4 The customer is obligated to inform us without delay of any expected claims resulting from a supply chain. Complaints concerning a part of a delivery do not justify complaints regarding the entire delivery.
- 9.5 Warranty claims expire by limitation within 12 months after delivery of goods.

10. Liability

- 10.1 Any liability not expressly provided below-mentioned shall be disclaimed as far as permitted by law.
- 10.2 In case of intent or gross negligence on our part or by our agents or assistants in performance we are liable according to the provisions of applicable law; the same applies in case of breach of fundamental contract obligations. To the extent the breach of contract is unintentionally our liability for damages shall be limited to the typically predictable damage.
- 10.3 Our liability for culpable damage to life, body or health as well as our liability under the Product Liability Act shall remain unaffected.

11. Customer's Obligations

- 11.1 The customer accepts the obligation to dispose properly of the delivered goods after the end of usage at its own cost and in accordance with legal regulations. The customer is obligated to keep us indemnified against all obligations under sec. 10, para. 2 ElektroG (Electrical and Electronic Equipment Act) (Take-back obligation of the Producer) and from any claims to which third parties are entitled thereunder.
- 11.2 The ordering party shall bear partial costs for special tools and related machinery and programs. The partial cost for tools shall be due at the latest upon presentation of the sample produced with the tool and must be paid in the net amount within 10 days of the date of invoice. These special tools, machinery and programs shall remain our unlimited property.

12. Final Clauses

- 12.1 This contract shall be governed by the laws of the Federal Republic of Germany excluding the Convention on Contracts for the International Sale of Goods (CISG).
- 12.2 If the conditions for a court agreement pursuant to sec. 38 ZPO (German Code of Civil Procedure) have been met, then the court of jurisdiction for all claims by the contractual partner shall be - depending on the value of the subject matter - Amtsgericht (District Court) Daun or Landgericht (County Court) Trier. We are entitled at our discretion to file an action against the customer at all his places of jurisdiction whether to German law or the national law of the customer.
- 12.3 If any individual provision herein is or becomes ineffective, the validity of the remaining provisions shall remain unaffected thereby. Contractual partners shall be obligated to replace an ineffective provision with a new provision that is as close as possible to the fiscal meaning and purpose of the ineffective provision.
- 12.4 In case of doubt to the interpretation of these general terms and provisions the German version shall obtain.

The companies of the apra group



apra-norm Elektromechanik GmbH

Bei der untersten Mühle 5 · D-54552 Mehren/Vulkaneifel
Phone: +49 (0) 65 92 / 20 4-0 · Fax: 20 4-100
sales@apra.de · www.apra.de



apraNET Geschäftsbereich Netzwerktechnik der apra-norm Elektromechanik GmbH

Bei der untersten Mühle 5 · D-54552 Mehren/Vulkaneifel
Phone: +49 (0) 65 92 / 204-200 · Fax: 204-250
vertrieb@apranet.de · www.apra.de



apra-plast Kunststoffgehäuse-Systeme GmbH

Hamsterweg 9 · D-54550 Daun-Pützborn
Phone: +49 (0) 65 92 / 95 02-0 · Fax: 95 02-10
vertrieb@apra-plast.de · www.apra.de



apra-gerätebau GmbH Chemnitz

Südstraße 15 · Gewerbegebiet Süd
D-09221 Neukirchen
Phone: +49 (0) 371 / 28 12 4-0 · Fax: 28 12 4-20
vertrieb@apra-geraetebau.de · www.apra.de



apra-norm Elektromechanik GmbH

Abteilung radaplast: Spritzguss und Werkzeugbau

Hamsterweg 7 · D-54550 Daun-Pützborn
Phone: +49 (0) 65 92 / 20 4-0 · Fax: 204-100
sales@apra.de · www.apra.de



apra-optinet Sp. z o.o.

ul. Technologiczna 4/6 · PL-45-839 Opole
Phone: 00 48 (0) 77 415 0 107 · Fax: 00 48 (0) 77 415 0 161
sales@apra-optinet.pl · www.apra-optinet.pl



apra-norm s.n.c.

ZA de l'aérodrome
4, rue Clément Ader · F-67500 Haguenau
Phone: 00 33 (0) 3 88 93 96 96 · Fax: 00 33 (0) 3 88 93 96 92
commercial@apra-norm.fr · www.apra-norm.fr

Your Contact



www.apra.de