

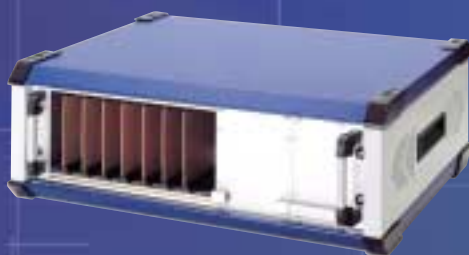
19" Enclosure Systems



... the perfect shell for valuable electronics



19" enclosure systems



Vitaro® 195

beginning on page 3.4

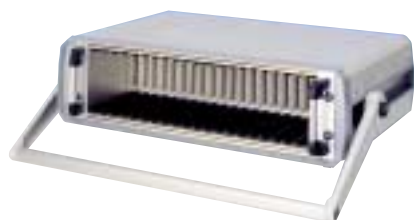
- universal enclosure system
 - 19" enclosure
 - desktop enclosure, 95 HP
 - universal enclosure
 - wall-mounting enclosure
- extremely short assembly time
- special fixing system; no screws required for assembly
- attractive design



ZENITH 160

beginning on page 3.11

- invisible ventilation
- integrated handle section
- 1/2 19" version available
- IP 20/51



apra line 140

beginning on page 3.21

- removable cover parts
- integrated handle
- IP 20/30



Tamago 185

beginning on page 3.24

- stylish design
- protected apra-lock locking system
- also available as a desktop enclosure
- IP 20/40



apraTeK 180

beginning on page 3.28

- solid welded design
- integrated handle
- IP 20/30



BERLIN 150

beginning on page 3.16

- light construction
- integrated handle bar
- IP 20/30



apra 179

beginning on page 3.30

- quickly dismountable
- light construction
- integrated handle
- 1/2 19" version available
- IP 20/30



Additional 19" enclosure systems

- see chapter 2 "Wall-Mounting Enclosures"
- 19" Vari 2000 wall-mounting enclosure 2.4
- 19" Vari Industry wall-mounting enclosure... 2.7
- 19" Vari 500 wall-mounting enclosure 2.10



Customized 19" enclosures

Page 3.32

- we develop the optimum 19" enclosure solution based on your specific demands



195 • 19" Vitaro® enclosure system

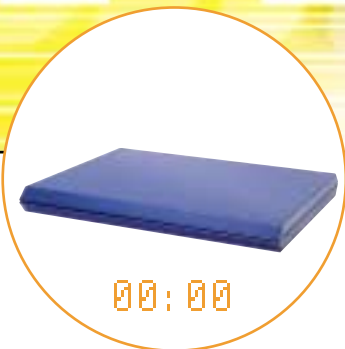


00:48
00:49

We understand.

We know how costly time is these days.
And we know how to save time.

Vitaro can be assembled in under 60 seconds.
It keeps you flexible and quick.



00:00

minimum storage and
transportation dimensions



00:02

various
extension options

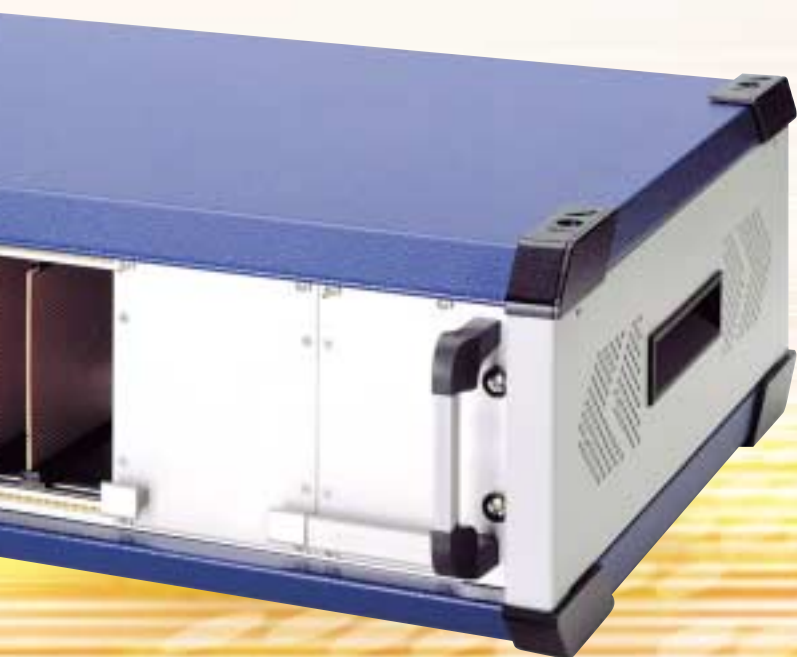


00:08

plug-in system;
no tools required



00:



Vitaro®

- universal enclosure system
 - 19" enclosure
 - desktop enclosure, 95 HP
 - universal enclosure
 - wall-mounting enclosure
- extremely short assembly time
- special fixing system; no screws required for assembly*
- attractive design
- light Al design
- stackable
- integrated handles
- assembly kit system requiring minimum storage and transportation space
- various expansion options
- modular accessories
- special models available on request.

* Enclosures can also be assembled using screws



21



00:25



00:29



00:50

So good



195 • 19" *Vitaro*® enclosure system



Model 1

19" enclosure, 3/4/6 U

The enclosure has vertical mountings that are inserted without tools and is ready for you to install 19" components.

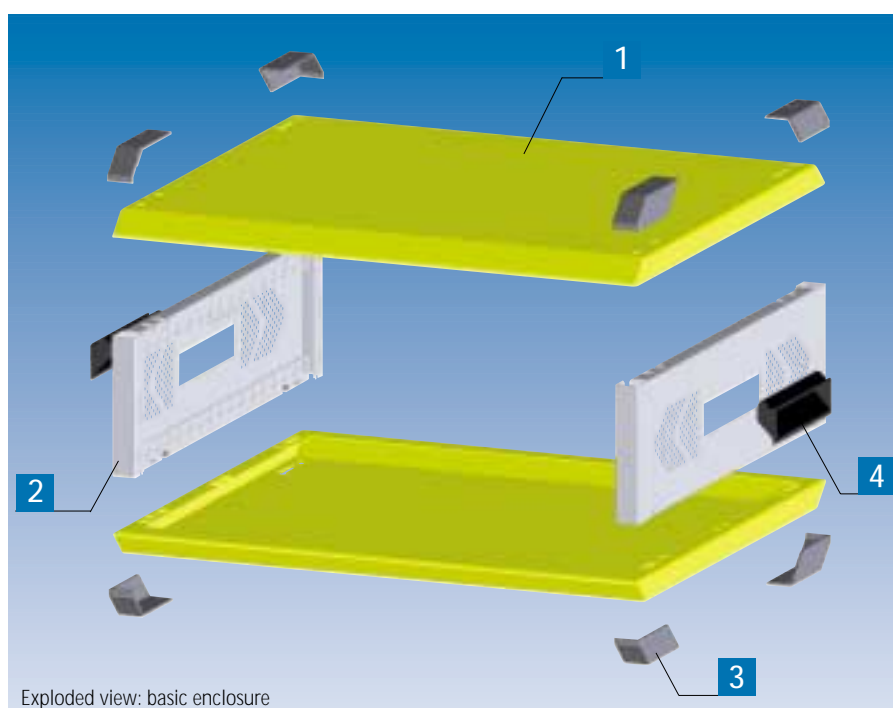
Installation dimensions comply with IEC 297-1.

Model 2

Desktop enclosure, 95 HP, 3/4/6 U

You can also install subbracks without tools, creating a desktop enclosure for installing Europe cards or other customized electronic components.

Installation dimensions comply with IEC 297-3.



Exploded view: basic enclosure

Specifications

Application:

can be used as a 19" enclosure, desktop enclosure, wall-mounting enclosure or universal enclosure for customized use; ideal for installing 19" components in compliance with IEC 297-1 and -3.

Construction:

Al shell construction with plug-in tab system; no tools required for assembly. 4 screws can be used for extra security. (included in delivery)

Material: aluminium

Finish:

Side panels: RAL 7035 light grey
Top/bottom panels: RAL 7037 dust grey

Degree of protection: IP20



Expansion models



Model 3

Universal enclosure

We can customize this universal enclosure to your requirements on request, whether you require stamps, embossing or printing.



Model 4

Wall-mounting enclosure

You can use a wall mounting set (see accessories) to transform enclosure models 1-3 into wall-mounting enclosures.

Order information

1. Select a basic enclosure from the table based on the height and depth you need.
2. Select an appropriate expansion kit (see next page) based on how you intend to use the enclosure.
3. General and model-specific accessories can be found beginning on page 3.9.

Note:
Available depth d = D-46mm
Enclosure width W = 537mm

Included in delivery

Item	Pc.	Description
1	2	Top/bottom shells
2	2	Side panels
3	8	Decorative corners, stackable
4	1	Assembly set: 4 enclosure feet, 2 handles, 4 retaining screws

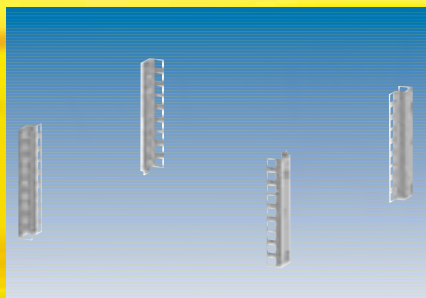
Order information

Description	Part no.		
	D = 350mm	D = 450mm	D = 550mm
Basic enclosure, 3 U	19-5313-00	19-5413-00	19-5513-00
Basic enclosure, 4 U	19-5314-00	19-5414-00	19-5514-00
Basic enclosure, 6 U	19-5316-00	19-5416-00	19-5516-00

Note:
Additional enclosure sizes (for example 84 HP, 63 HP, 42 HP) are available on request.



Expansion Kit



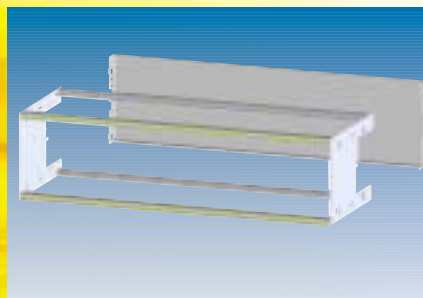
Model 1

Expansion kit: 19" enclosure

You can transform the basic enclosure into a full 19" enclosure using plug-in vertical mountings. No tools are required.

Note:

Order rear panel separately.
(see 19" enclosure accessories)



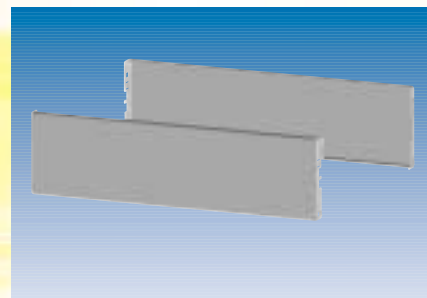
Model 2

Expansion kit: desktop enclosure, 95 HP

You can turn the basic enclosure into a desktop enclosure for IEC 297-3 plug-in components using plug-in subracks. No tools are required. Subracks are ideal for installing Europe cards with 160mm or 220mm depths and bus boards.

Note:

Rear panel included in delivery.



Model 3

Expansion kit: universal enclosure

You can customize our basic enclosure using customizable front and rear panels (screens, stamps, embossing).

Included in delivery

Item	Pc.	Description
1	4	Vertical mounting

Order information

Expansion kit	Part no.
3 U	19-5053-00
4 U	19-5054-00
6 U	19-5056-00

Matching 19" plug-in units

see p. 4.1

Matching 19" subracks

see p. 5.1

Included in delivery

Item	Pc.	Description
1	2	Side panels
2	2	Standard module rails
3	2	BUS module rails
4	1	BUS support rail (for 6 U only)
5	1	Rear panel
6	2	Threaded inserts, M2.5

Order information

Expansion kit		Part no.
D = 160mm	3 U	19-5083-00
D = 160mm	4 U	19-5084-00
D = 160mm	6 U	19-5086-00
D = 220mm	3 U	19-5083-30
D = 220mm	4 U	19-5084-30
D = 220mm	6 U	19-5086-30

Included in delivery

Item	Pc.	Description
1	1	Front panel, plug-in
2	1	Rear panel, plug-in

Note:

You can find plug-in installation/mounting plates for horizontal and vertical installation in the accessories section

Order information

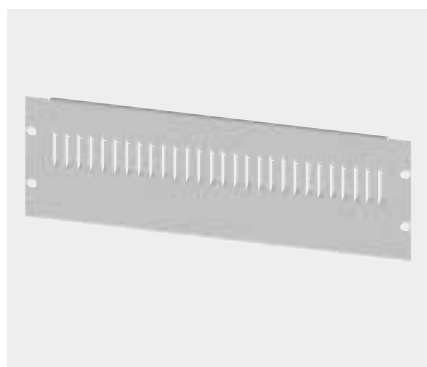
Expansion kit	Part no.
3 U	19-5063-00
4 U	19-5064-00
6 U	19-5066-00



Accessories

Model 1 - 19" enclosure

19" rear panel

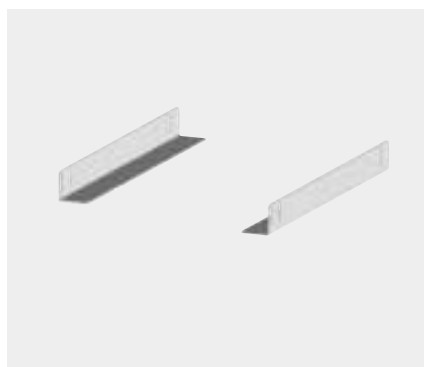


- ventilated or not ventilated
- incl. assembly material

Finish: RAL 7035 light grey

Desc.	Part no.	
	not ventilated	ventilated
3 U	19-5023-00	19-5023-10
4 U	19-5024-00	19-5024-10
6 U	19-5026-00	19-5026-10

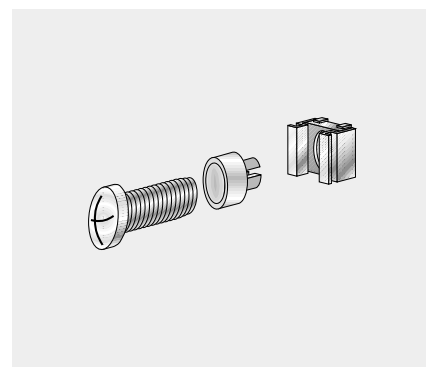
Sliding rails, adjustable height



- incl. assembly material

Description	Part no. (pair)
for D=350mm	19-5382-00
for D=450mm	19-5482-00
for D=550mm	19-5582-00

19" M5 screw set



- includes:
50 captive nuts, M5
50 screws, M5 x 12
50 decorative washers, M5 with collar

Description	Part no.
50 pc.	630-991

Model 2 - desktop enclosure

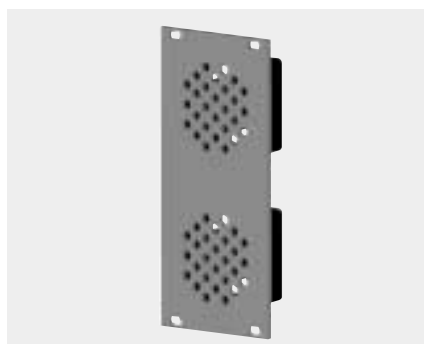
Front panel, 95 HP



Finish: anodized

Description	Part no.
3 U	19-5395-00
4 U	19-5495-00
6 U	19-5695-00

Fan unit, 11 HP



- for front installation
- with 2 built-in 12V fans
- flow rate: 2 x 13.5m³/h
- noise level: 29dB(A)

Description	Part no.
3 U	19-5083-20
4 U	19-5084-20
6 U	19-5086-20

Card guide



- for 160mm- and 220mm-deep
Europe cards
- Finish:**
similar to RAL 7035 light grey (D = 160mm)
black (D = 220mm)
- Material:**
plastic, listed according to UL V-1
(D=160mm)

For card depths	Part no.
D = 160mm	240-401
D = 220mm	240-406



Accessories

Models 1-4 - general

Door with plexiglass pane, plug-in

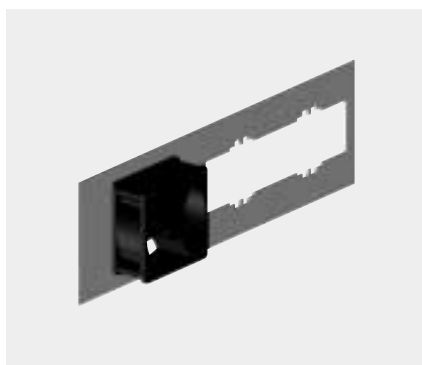


- with plexiglass pane
- with cylinder sash fastener

Finish: RAL 7035 light grey

Description	Part no.
3 U	19-5073-00
4 U	19-5074-00
6 U	19-5076-00

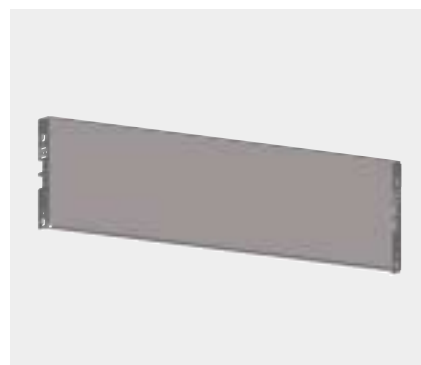
Fan support with 12V fan



- plugs into the side wall
- high-quality **PAPST** -fan fan features:
flow rate: 40m³/h
noise level: 40dB (A)

Description	Part no.
for D=350mm	19-5380-10
for D=450mm	19-5480-10
for D=550mm	19-5480-10

Mounting plate, plug-in



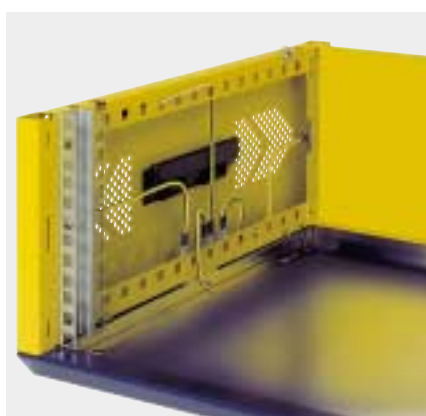
- for vertical installation
- adjustable plug-in depth

Note:

The 3 U mounting plate can also be installed horizontally in all sizes of enclosures.

Description	Part no.
3 U	19-5063-02
4 U	19-5064-02
6 U	19-5066-02

Earthing kit



- for earthing all enclosure components in compliance with VDE

Description	Part no.
19" enclosure	19-5080-10
Desktop enclosure	19-5080-12
Universal enclosure	19-5080-12

Blind cover set



- for extension components installed 50mm towards the rear
- includes 2 horizontal and 2 vertical panels
- self-locking, no assembly material required

Description	Part no.
3 U	19-5083-10
4 U	19-5084-10
6 U	19-5086-10

Wall mounting set



- fits models 1-3
- no tools required for mounting brackets to the enclosure

Description	Part no.
for D=350mm	19-5380-00
for D=450mm	19-5480-00
for D=550mm	19-5580-00

Innovation and Design ZENITH for the Future



... the perfect shell for valuable electronics

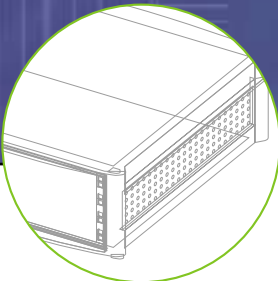


Highest functionality

The 19" "Zenith" enclosure system provides highest functionality with an elegant design.



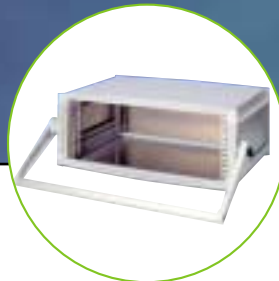
Features



Invisible ventilation in the side walls ensures that the enclosure is IP protected and ventilated. Your components will be protected from external influences and overheating.



A patented stacking adapter allows you to stack several enclosures safely and easily.



An integrated handle bar allows you to transport the enclosure comfortably. A practical prop-up and carrying handle is available as an accessory.

All individual pieces of the frame construction are designed for easily handling and high flexibility.

When developing these enclosures, apra-norm focused on long lifetime and solid construction and protecting components from external influences. The advanced design with a high recognition rate and functionality distinguishes this enclosure and sets the standard for its competition.

The exceptional processing, which ranges from technical sophistication to quality details, supplements this optimum enclosure design.

19" ZENITH enclosure system

- future-oriented, functional design
- integrated side handle bar
- EMC-compliant basic design, upgradable
- integrated "invisible" ventilation
- customizable inner partitions
- stackable
- modular construction
- can be used as a 19" cabinet system up to 24 U
- wide range of accessories
- also available in a 1/2-19" version
- installation dimensions in compliance with IEC 297-1

Matching 19" plug-in units

see p. 4.1

Matching 19" subracks

see p. 5.1



19" ZENITH enclosure system

Application:

19" plug-in units, shelves and 19" subracks can be installed in the enclosure. Since it can have up to 24 U of space, it can also be used as a cabinet system.

Construction:

It has a solid structure consisting of front and rear Al die-cast frames (die-cast zinc in 1/2-19" versions) and extruded sections. The side walls and top panels are simply clipped on. An "invisible", passive ventilation system is built into all enclosures. The EMC version has additional perforated EMC protective panels on the side.

Finish:

Frames and top panels:
RAL 7035 light grey
Vertical extrusions and side panels:
RAL 7038 agate grey

Degree of protection:

IP 51 (solid rear panel)
IP 20 (ventilated rear panel)

Standards:

installation dimensions in compliance with IEC 297-1

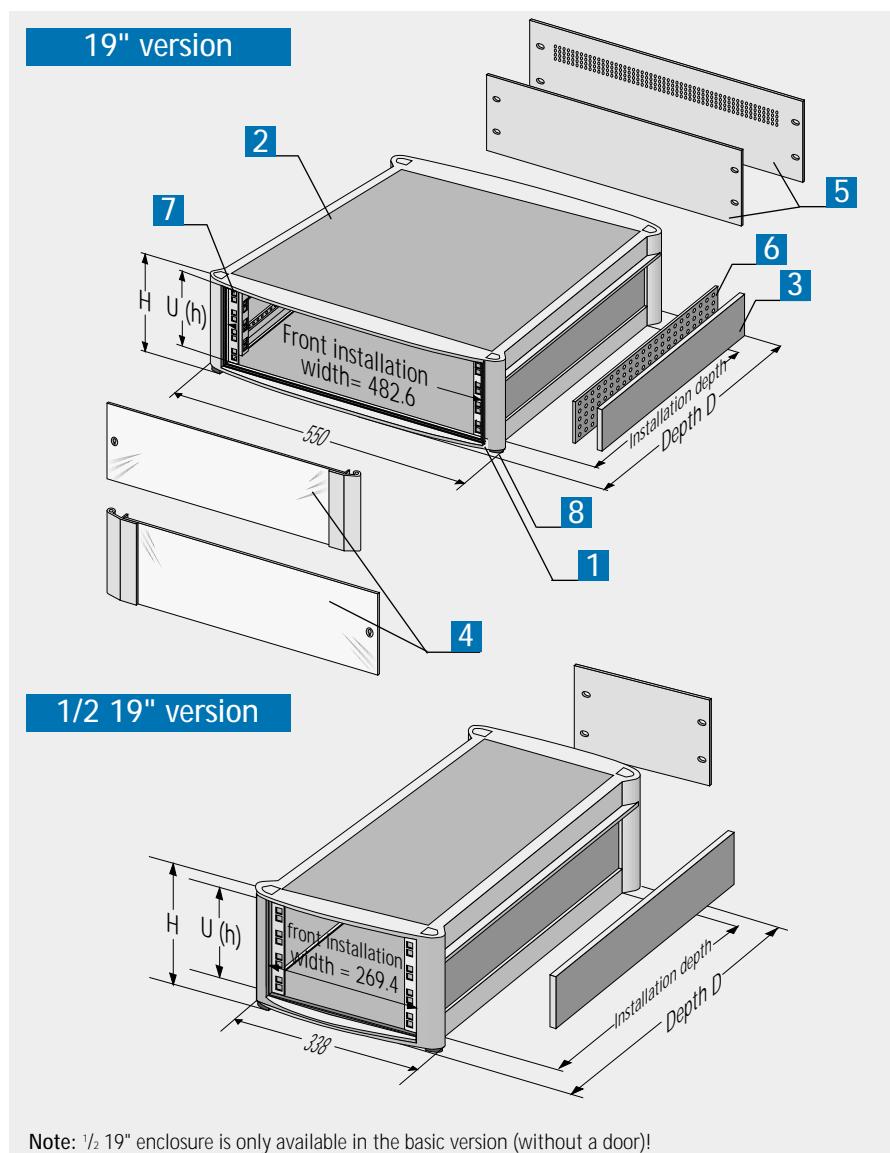
Delivery:

assembled

Note:

Enclosures with a door have an 50mm shorter installation depth because the mounting brackets are recessed 50mm. Doors can also be hinged on the right upon request. Please specify when ordering!

Specifications



Included in delivery

Item	Description	Item	Description
1	Frame	5	Rear panel (ventilated/not ventilated)
2	Top/bottom panel	6	EMC panel
3	Side panel	7	Vertical mounting
4	Door (safety glass pane)	8	Enclosure foot

Available sizes

19"			Installation height								
			3 U	4 U	6 U	7 U	9 U	12 U	15 U	18 U	24 U
		h in mm	132.5	177	265.9	310.5	399.2	532.5	666	800	1066
		H in mm	170.6	215.1	304.1	348.6	437.1	570.6	703.3	836.8	1102.8
d mm	350	D mm	425	425	425						
	450		525	525	525	525					
	550			625	625		625	625	625	625	625

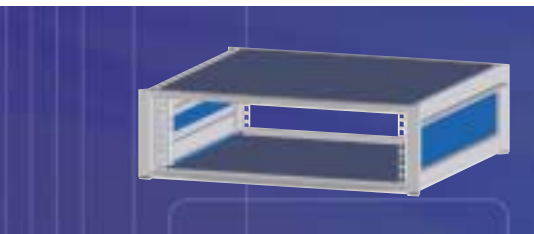
1/2-19"			Installation height		
			3 U	4 U	6 U
		h in mm	132.5	177	265.9
		H in mm	170.6	215.1	304.1
d mm	350	D mm	425	425	425
	450		525	525	525
	550			625	625



160 • 19" ZENITH enclosure system



Included in delivery



19" basic enclosure

Degree of protection: IP 20

Pc.	Description
1	Chassis with side panels and top/bottom panels
4	Vertical mounting
4	Enclosure feet



1/2 19" basic enclosure

Construction: similar to basic enclosure but as a 1/2 19" model.

Note: Available as a basic version only.

Degree of protection: IP 20

Pc.	Description
1	Chassis with side panels and top/bottom panels
4	Vertical mounting
4	Enclosure feet

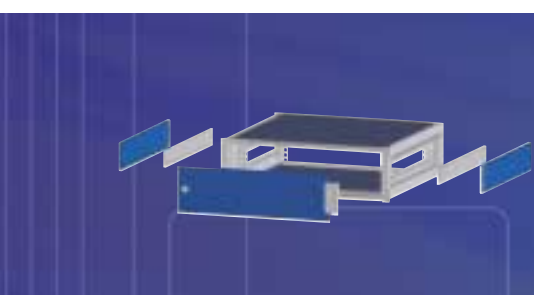


19" enclosure with door

Construction: similar to basic enclosure but with glass door and sealing material

Degree of protection: IP 42

Pc.	Description
1	Chassis with side panels and top/bottom panels
4	Vertical mounting, recessed
4	Enclosure feet
1	Safety glass door with lock and sealing material



19" EMC enclosure

Construction: similar to basic enclosure but with sheet steel door, additional EMC panels and EMC sealing material

Degree of protection: IP 42

Pc.	Description
1	Chassis with side panels and top/bottom panels
4	Vertical mounting, recessed
4	Enclosure feet
1	Steel door with lock and EMC sealing material
2	EMC panels, side



Sample configuration

Order information

U	Size	19" basic enclosure	1/2-19"- basic enclosure	19" enclosure with door	19" EMC enclosure ventilated	19"- rear panel ventilated	19"- rear panel not ventilated	1/2-19"- rear panel ventilated	1/2-19"- rear panel not ventilated
	D mm								
3	425	16-0403-00	16-0433-00	16-0403-50	16-0403-55	16-0010-02	16-0011-02	16-0020-02	16-0021-02
	525	16-0503-00	16-0533-00	16-0503-50	16-0503-55				
4	425	16-0404-00	16-0434-00	16-0404-50	16-0404-55	16-0010-04	16-0011-04	16-0020-04	16-0021-04
	525	16-0504-00	16-0534-00	16-0504-50	16-0504-55				
	625	16-0604-00	16-0634-00	16-0604-50	16-0604-55				
6	425	16-0406-00	16-0436-00	16-0406-50	16-0406-55	16-0010-06	16-0011-06	16-0020-06	16-0021-06
	525	16-0506-00	16-0536-00	16-0506-50	16-0506-55				
	625	16-0606-00	16-0636-00	16-0606-50	16-0606-55				
7	525	16-0507-00		16-0507-50	16-0507-55	16-0010-08	16-0011-08	Important note: Rear panels cannot be added because they are higher than the standard measurements!	
9	525	16-0509-00		16-0509-50	16-0509-55	16-0010-10	16-0011-10		
	625	16-0609-00		16-0609-50	16-0609-55				
12	625	16-0612-00		16-0612-50	16-0612-55	16-0010-12	16-0011-12		
15	625	16-0615-00		16-0615-50	16-0615-55	16-0010-16	16-0011-16		
18	625	16-0618-00		16-0618-50	16-0618-55	16-0010-18	16-0011-18		
24	625	16-0624-00		16-0624-50	16-0624-55	16-0010-24	16-0011-24		

Note: Rear panel not included in delivery. Please order separately!



Accessories

Prop-up and carrying handle



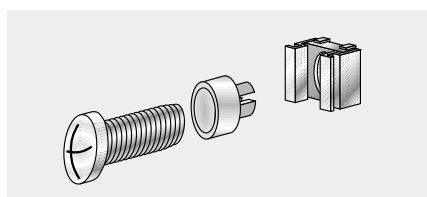
- handle can be set 30° by pressing a button to snap it into place
- **Carrying capacity:** up to 50kg

Finish: RAL 7035 light grey

Delivery: mounted to enclosure

Part no.	
19" Zenith	1/2 19" Zenith
16-0100-84	16-0100-42

M5 screw set



Included in delivery:

- 50 screws, M5 x 12
- 50 captive nuts, M5-8
- 50 decorative washers, M5 with collar

Description	Part no.
50 pc.	630-991

Carrying handle



Carrying capacity: approx. 60kg/pair of handles

Finish: RAL 7035 light grey

Delivery: mounted to enclosure

Description	Part no. (pair)
for D=425mm	16-0014-44
for D=525mm	16-0014-45
for D=625mm	16-0014-46

Shelf, fixed



Carrying capacity: approx. 30kg

Finish: RAL 7035 light grey

***Note:** for use with 50mm recessed vertical mountings.

Description	Part no.
for D=525mm	16-0015-40
for D=625mm	16-0015-30
for D=525mm	16-0015-80*
for D=625mm	16-0015-70*

Shelf, extractable



Carrying capacity: approx. 30kg

Finish: RAL 7035 light grey

Note: also for use with 50mm recessed vertical mountings.

Description	Part no.
for D=525mm	16-0015-20
for D=625mm	16-0015-10

Stacking adapter



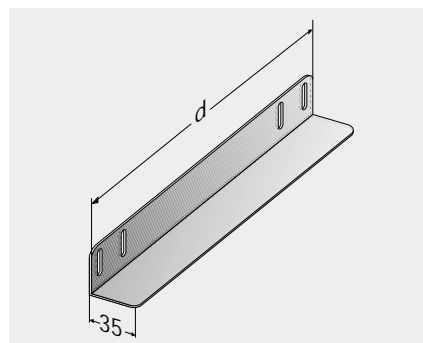
Stacking adapters allow you to stack 19" enclosures safely. Enclosures can be stacked and locked together using a bayonet fitting.

Material: plastic with a metal pin

Finish: RAL 7035 light grey

Part no. (4 pieces)
16-0001-08

Sliding rails



Model 1

Sliding rails for basic enclosure

Material: sheet steel, galvanized

Description	Available depth d mm	Part no. (pair)
for D=425mm	266	16-0012-42
for D=525mm	366	16-0012-52
for D=625mm	466	16-0012-62

Model 2

Sliding rails for enclosures with door or EMC door and mounting brackets moved 50mm towards the rear

Description	Available depth d mm	Part no. (pair)
for D=425mm	216	16-0012-46
for D=525mm	316	16-0012-56
for D=625mm	416	16-0012-66

Castor set

- 2 guide rollers, and 2 castor wheels
- incl. assembly material

Carrying capacity per castor: 40kg

Castor diameter: 50mm

Delivery: mounted to enclosure

Part no.
16-0014-80

Earthing kit

Height	Part no.
3-7 U	16-0033-00
9-15 U	16-0039-00
18-24 U	16-0048-00



Modern design with a traditional background

apra-norm's flexible "Berlin" enclosure series—a modern design with a traditional background. The column construction combines classical structures with advanced designs and new ideas.

BERLIN



Sample configurations

19" Berlin enclosure system

- modern design
- light construction
- stackable
- integrated handle bar
- mounting system with adjustable depth
- installation dimensions in compliance with IEC 297-1

The apra-norm "Berlin" enclosure is characterized by its variable system construction. The side aluminium extrusions have integrated handle bars. Bottom panels and the rear panel are available solid or with anti-tamper ventilation slots.

The mounting system allows you to install the 19" mount at different depths. The modular system allows for numerous models and expansion options. Enclosures can be stacked on top of each other using the stacking foot. They can also be screwed together. In addition to stationary feet, adjusting feet and castors are available. Our wide range of accessories offers countless application options.

Matching 19" plug-in units

see p. 4.1

Matching 19" subracks

see p. 5.1



Specifications

Application:

19" plug-in units, shelves and 19" subracks can be installed in the enclosure. Because the enclosure is available in different sizes up to 24 U, it can also be used as a light cabinet system.

Construction:

An anodized aluminium extrusion frame forms the basic structure of the enclosure. Side and top panels are inserted into grooves.

Finish:

Extrusions: anodized
Cover parts:
RAL 7035 light grey

Degree of protection:

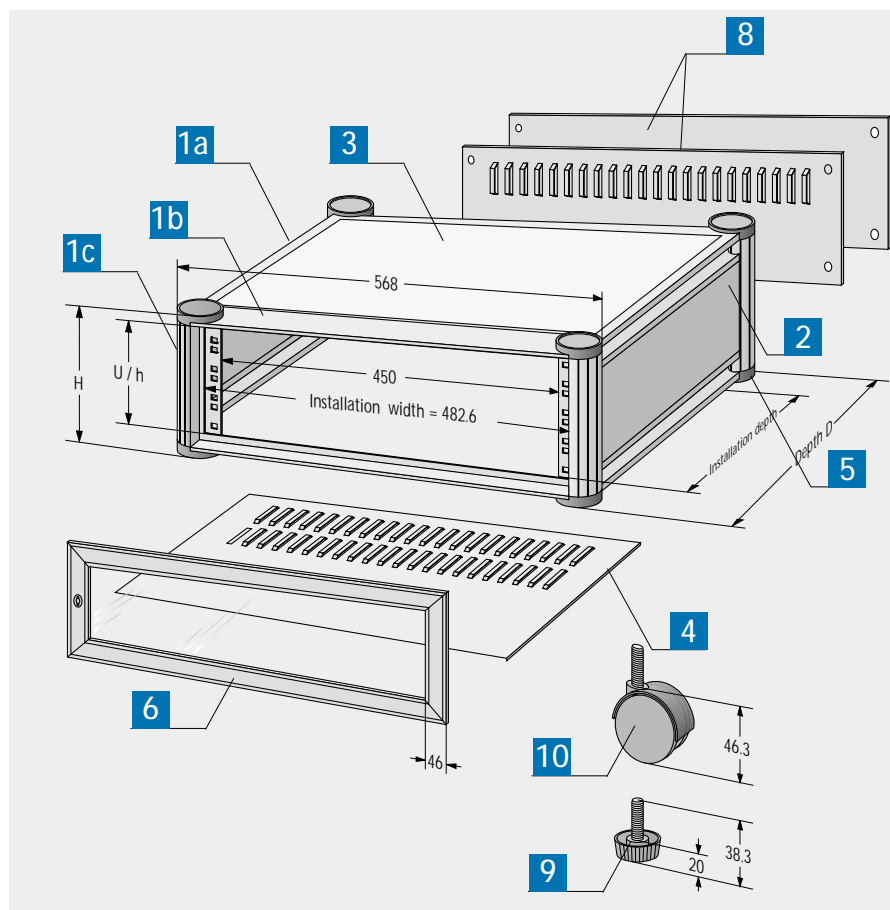
IP 30 (not ventilated)
IP 20 (ventilated)

Standards:

installation dimensions in compliance with IEC 297-1

Delivery:

assembled



Item	Description
1	Enclosure frame consisting of:
1a	Depth strut
1b	Horizontal strut
1c	Vertical strut
2	Side panel
3	Top panel
4	Bottom panel (ventilated/not ventilated)

Item	Description
5	Enclosure foot
6	Glass door with lock
7	Assembly material
8	Rear panel (ventilated/not ventilated)
9	Adjusting foot (see accessories)
10	Double castor (see accessories)

Available sizes

Installation height			3 U	4 U	6 U	7 U	9 U	12 U	15 U	18 U	24 U
Installation height h mm			132.5	177	265.9	310.5	399.2	532.5	666	800	1066
Enclosure height H mm			203	247	336	381	470	603	736	870	1136
Installation depth d mm	275	Enclosure depth D mm	320	320	320	-	-	-	-	-	-
	335		380	380	380	380	380	380	-	-	-
	395		-	-	440	440	440	440	440	440	-
	455		-	-	-	-	-	500	500	500	500
	555		-	-	-	-	-	-	-	600	600

Note: The installation depth in models with a door is reduced by 60mm because the vertical mountings are recessed.



150 • 19" **BERLIN** enclosure system



Order information



Included in delivery, enclosure without door

Item	Pc.	Description
1	1	Enclosure frame
2	2	Side panels
3	1	Top panel
4	1	Bottom panel (ventilated/not ventilated)
5	4	Enclosure feet
6		Assembly material

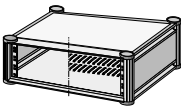
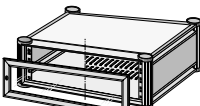


Order rear panels separately.

- rear panel, not ventilated or ventilated
- rear panels can be combined in larger enclosures
- in enclosures with a door, the door is hinged on the left, and the vertical mountings are installed 60mm towards the rear



Included in delivery, enclosure with door

Item	Pc.	Description
1	1	Enclosure frame
2	2	Side panels
3	1	Top panel
4	1	Bottom panel (ventilated/not ventilated)
5	4	Enclosure feet
6	1	Glass door with lock
7		Assembly material

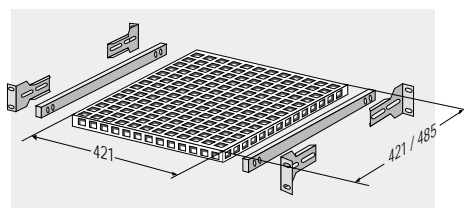
Size		Basic enclosure		Enclosure with door		8	8
		not ventilated	ventilated floor	not ventilated	ventilated floor	Rear panel	Rear panel
							
U	D mm	Part no.	Part no.	Part no.	Part no.	not ventilated	ventilated
3	320	150-203	150-233	15-0203-40	15-0233-40	150-703	150-713
	380	150-303*	150-333*	15-0303-40*	15-0333-40*		
4	320	150-204	150-234	15-0204-40	15-0234-40	150-704	150-714
	380	150-304	150-334	15-0304-40	15-0334-40		
6	320	150-206	150-236	15-0206-40	15-0236-40	150-706	150-716
	380	150-306	150-336	15-0306-40	15-0336-40		
	440	150-406*	150-436*	15-0406-40*	15-0436-40*		
7	380	150-307	150-337	15-0307-40	15-0337-40	150-707	150-717
	440	150-407	150-437	15-0407-40	15-0437-40		
9	380	150-309	150-339	15-0309-40	15-0339-40	150-709	Combination of different rear wall heights (U) ventilated or not ventilated
	440	150-409	150-439	15-0409-40	15-0439-40		
12	380	150-312	150-342	15-0312-40	15-0342-40		
	440	150-412	150-442	15-0412-40	15-0442-40		
	500	150-512	150-542	15-0512-40	15-0542-40		
15	440	150-415	150-445	15-0415-40	15-0445-40		
	500	150-515	150-545	15-0515-40	15-0545-40		
18	440	150-418	150-448	15-0418-40	15-0448-40		
	500	150-518	150-548	15-0518-40	15-0548-40		
	600	150-618	150-648	15-0618-40	15-0648-40		
24	500	150-524	150-554	15-0524-40	15-0554-40		
	600	150-624	150-654	15-0624-40	15-0654-40		



Accessories

Perforated shelf, extractable

Finish: RAL 7035 light grey
Carrying capacity: approx. 30kg



Included in delivery

Pc.	Description
1	Perforated shelf
2	Extraction rails
4	Mounting bracket
	Assembly material

- for enclosures with D = 600mm only
- also fits when the depth is reduced by 60mm

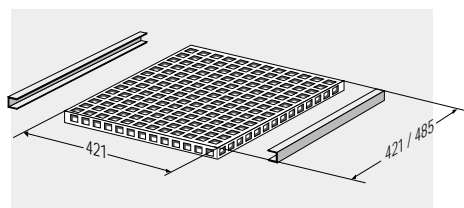
Part no.
150-091

- for enclosures D = 500mm only

Part no.
110-430

Perforated shelf, fixed

Finish: RAL 7035 light grey
Carrying capacity: approx. 50kg



Included in delivery

Pc.	Description
1	Perforated shelf
2	Mounting bracket
	Assembly material

- for enclosures with D = 600mm only
- also fits when the depth is reduced by 60mm

Part no.
150-092

- for enclosures with D = 600mm only

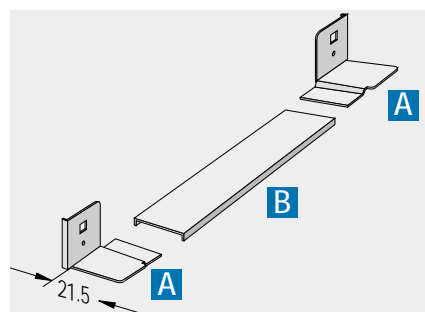
Part no.
150-093



Sample configurations

Mounting device, hinged

- with middle part for customized length



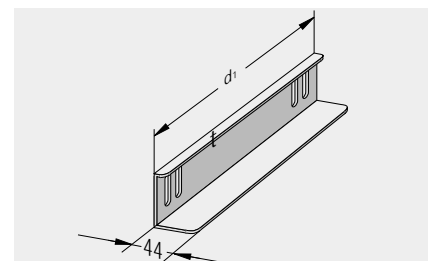
A Mounting device

Part no. (pair)
150-103

B Middle part, can be cut to required length (1000mm)

Part no.
15-0103-00

Sliding rail



*Note: shorter sliding rails must be used in enclosures with recessed vertical mountings.

D mm	d1 mm	Part no. (pair)
320	145*	15-0103-11
320	205	15-0103-17
380	265	15-0103-23
440	325	15-0103-29
500	385	15-0103-35
600	485	15-0103-45
600	425*	15-0103-39



150 • 19" **BERLIN** enclosure system



Accessories

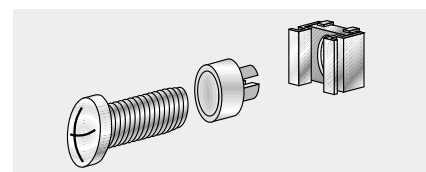


Earthing kit

Height	Part no.
3-9 U	15-0030-09
12-24 U	15-0030-24

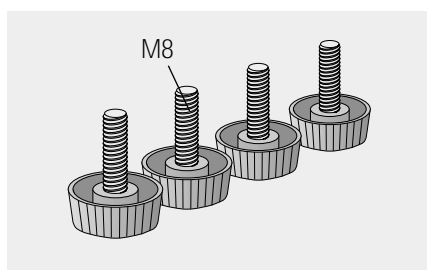
M5 screw set

- 50 screws, M5 x 12
- 50 captive nuts, M5-8
- 50 decorative washers, M5 with collar



Description	Part no.
50 pc.	630-991

9 Adjusting feet



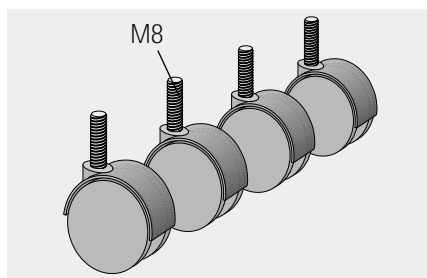
Delivery: mounted to enclosure

Note: cannot be retrofitted

Piece	Part no.
4	150-156

10 Double castors

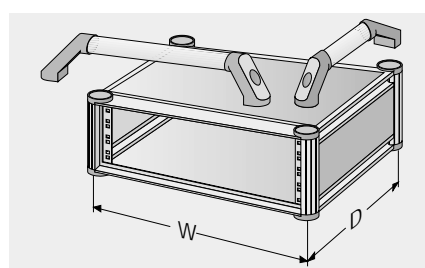
Carrying capacity: approx. 30kg per castor



Note: cannot be retrofitted

Piece	Part no.
4	150-158

Handle



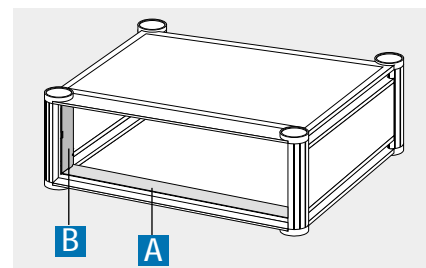
Material:

- handle shank is made from heavy-duty, black polyamide
- connecting pipe is made from aluminium, polished and natural colour anodized

Note: cannot be retrofitted

For enclosures	Part no.
W = 528 (19") mm	615-261
D = 320 mm	615-262
D = 380 mm	615-263
D = 440 mm	615-264
D = 500 mm	615-265
D = 600 mm	615-266

Blind covers



- used with 60mm recessed vertical mountings

Material: anodized aluminium

A Panel, upper/lower

Width	Part no. (pair)
19"	150-060

B Panel, side

U	Part no. (pair)
3	150-063
4	150-064
6	150-066
7	150-067
9	150-069
12	150-072
15	150-075
18	150-078
24	150-084

Universal enclosure system for use as a 19" enclosure and as a desktop enclosure

The apraline enclosure system was designed as a 19" enclosure for installing 19" subracks and other 19" plug-in devices.



apra line



apraline has a future-oriented design and optimum functionality. Its elegant lines set it apart from the usual rectangular shaped enclosures.

The apraline product family is completed by a desktop enclosure with the same design (see the section on desktop enclosures on page 6.14).

19" **apra** line enclosure system

- impressive design with elegant lines and two-tone surface
- ergonomic recessed handles
- easy-to-maintain and cost-saving design principle: all facing panels can be easily removed from the assembled enclosure
- optimum heat dissipation through ventilated bottom and back pieces
- earthing kit for VDE-compliant earth connection in accordance with VDE 0100/05.73, DIN EN 60204 Part 1 and DIN 46008
- installation dimensions in compliance with IEC 297-1

Matching 19" plug-in units

see p. 4.1

Matching 19" subracks

see p. 5.1



140 • 19" apra line enclosure system



Specifications

19" apraline enclosure system

Application:

19" plug-in units, shelves and 19" subracks can be installed in the enclosure.

Construction:

The identical front and rear frames with a variable width consist of two lateral plastic pieces, which are connected with aluminium extrusions. These frames are connected by solid extrusions and screwed on to the mounting rails. Ergonomic recessed handles and grooves for using mounting nuts are integrated into the extrusions. The top and bottom shells and rear panel are made of aluminium and can be ventilated.

Finish:

Cover panels: RAL 7035 light grey
Frame and side sections: RAL 7001 silver grey

Degree of protection:

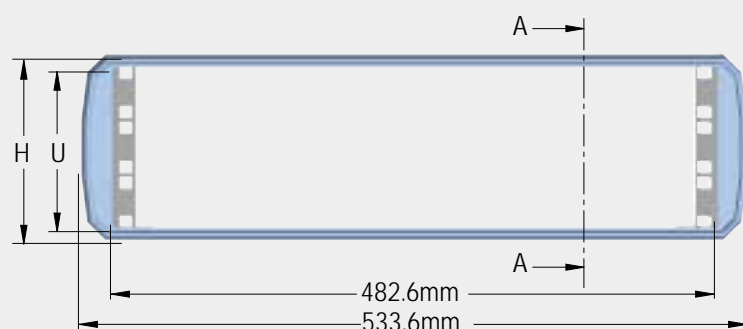
IP 30/20

Delivery:

assembled

Sample configuration with computer plug-in unit

Sample configuration with subracks



Front view



Cross section A-A



Included in delivery

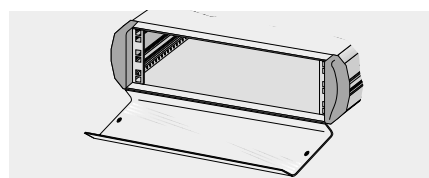
Item	Pc.	Description
1	2	Enclosure frame
2	4	Vertical mountings
3	2	Side panels
4	1	Top shell
5	1	Bottom shell (ventilated/not ventilated)
6	1	Rear panel (ventilated/not ventilated)
7	2	Sliding rails
8		Assembly material

Order information

Dimensions			Enclosure without vents				
U	h mm	H mm	D = 262 mm	D = 302 mm	D = 342 mm	D = 382 mm	D = 482 mm
2	88	105	140-201	140-211	-	-	-
3	132.5	150	140-301	140-311	140-321	140-331	140-341
4	177	194	140-401	140-411	140-421	140-431	140-441
6	266	283	140-601	140-611	140-621	140-631	140-641
7	310.5	328	-	-	140-721	140-731	140-741
8	354.5	372	140-801	140-811	140-821	140-831	140-841
9	399	416.5	140-901	140-911	140-921	140-931	140-941
			Enclosure with vents				
2	88	105	140-251	140-261	-	-	-
3	132.5	150	140-351	140-361	140-371	140-381	140-391
4	177	194	140-451	140-461	140-471	140-481	140-491
6	266	283	140-651	140-661	140-671	140-681	140-691
7	310.5	328	-	-	140-771	140-781	140-791
8	354.5	372	140-851	140-861	140-871	140-881	140-891
9	399	416.5	140-951	140-961	140-971	140-981	140-991

Accessories

Plexiglass front door, hinged

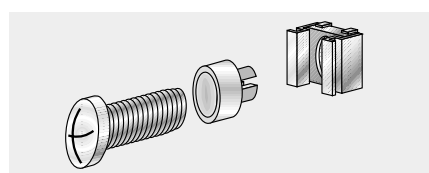


- with 2 quick-release locks
(plastic sash fastener)

Delivery: mounted to the enclosure

	3 U	4 U	6 U
19"	140-300	140-400	140-600

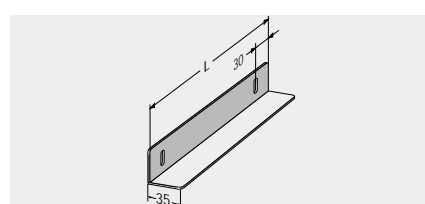
M5 screw set



- 50 screws, M5 x 12
- 50 captive nuts, M5-8
- 50 decorative washers, M5 with collar

Description	Part no.
50 pc.	630-991

Sliding rails



Note: for 8 U-high enclosures
Specify order no. followed by -01 when
ordering (for example, 14-0020-01)

Description	L mm	Part no. (piece)
for D=262 mm	140	140-020
for D=302 mm	140	140-020
for D= 342 mm	220	140-022
for D=382 mm	220	140-022
for D=482 mm	360	140-024

Earthing kit

- for earthing of all enclosure parts in
compliance with VDE

Height	Part no.
2 U	140-032
3 U	140-033
4 U	140-034
6 U	140-036
7 U	140-037
8 U	140-038
9 U	140-039

Prop-up and carrying handle



- handle can be set 30° by pressing a
button to snap it into place

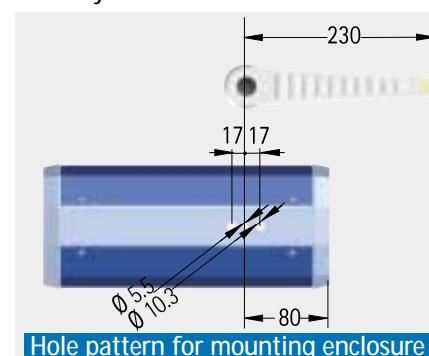
Carrying capacity:

up to 50kg

Finish:

RAL 9011 graphite black

Delivery: mounted to the enclosure



Hole pattern for mounting enclosure

Part no.
14-0100-84

Tamago!

19" and Desktop Enclosure System



... the perfect shell for valuable electronics



... simply advanced

Tamago!



excellent features



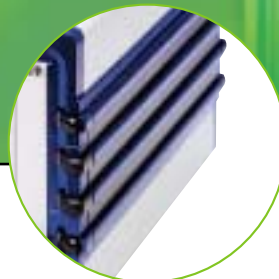
apra-lock locking system

The "apra-lock" patented locking system allows you to access your built-in components quickly without using tools.



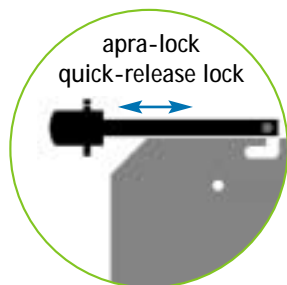
Stylish design

The system was awarded at the Rhineland-Palatinate 2001 Design Award, thus qualifying it for the 2002 national competition.

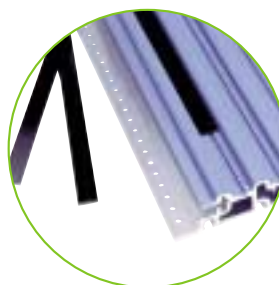


Trim pieces

You can customize your enclosure's design by clipping trim pieces onto the sides. Trim pieces in different colours are available on request.



apra-lock quick-release lock



19" *Tamago* enclosure system

- advanced design
- handle bar can be integrated
- easy handling
- patented "apra-lock" locking system
- clip-on trim pieces for custom design
- diverse accessories (e.g., prop-up and carrying handle, sliding rails)
- also available as a desktop enclosure

Matching 19" plug-in units

see p. 4.1

Matching 19" subracks

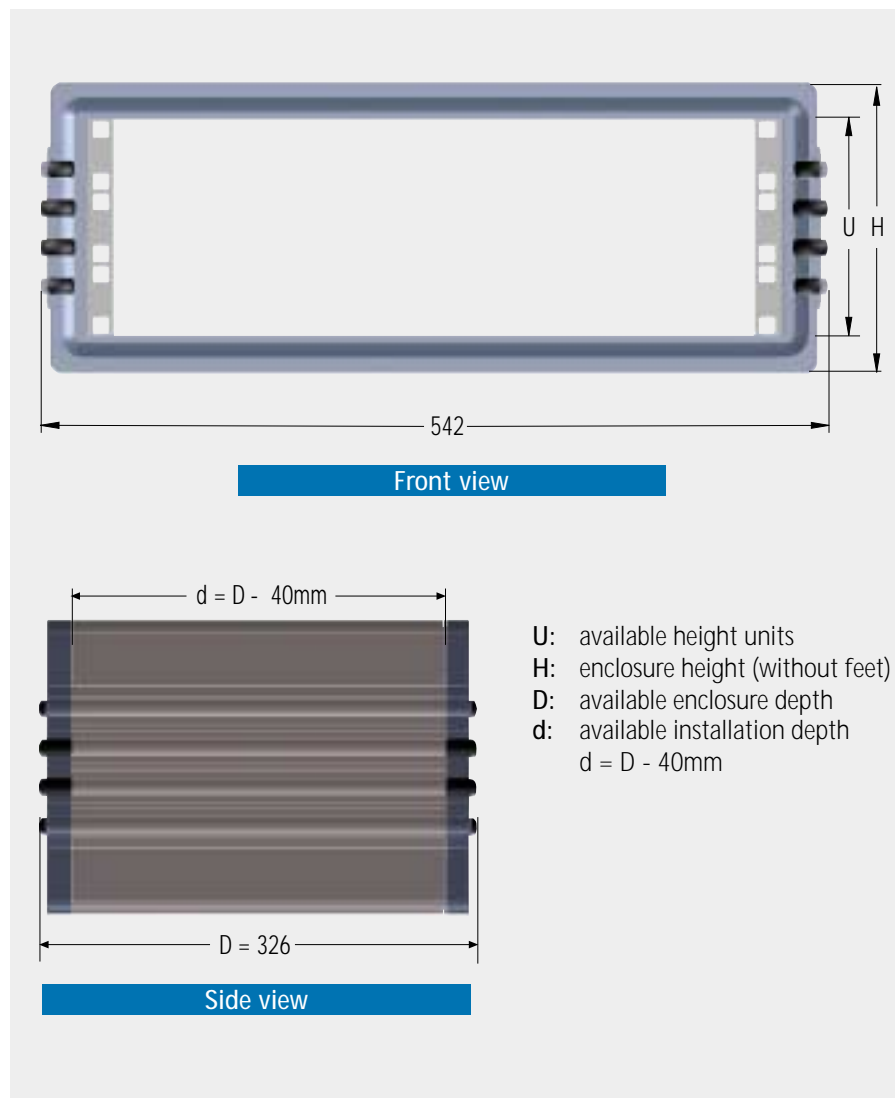
see p. 5.1



185 • 19" *Tamago* enclosure system



Specifications



Application:

19" plug-in units, shelves and 19" subracks can be installed in the enclosure.

Construction:

Stylish aluminium extrusions and zinc die-cast parts form the stable basic structure of this enclosure system. The top and bottom shells and rear panels are made of aluminium and are available in ventilated or non-ventilated versions.

Finish:

Frame and side extrusion:

RAL 7001 silver grey

Vertical mountings:

clear chromated

Top/bottom shell:

RAL 7035 light grey

Locks and decorative knobs:

RAL 9005 deep black

Material:

Frame: zinc die-cast/aluminium extrusion

Side panels: aluminium extrusions

Top/bottom shell:

aluminium panel, 1.5mm

Locks: die-cast zinc

Decorative knobs: plastic

Feet: rubber/plastic

Delivery:

partially assembled

incl. assembly instructions

Degree of protection: IP 40/20

Standards:

installation dimensions in compliance with IEC 297-1

Order information

U	Dimensions		Part no.		
	h mm	H mm	D = 326 mm	Rear panel not ventilated	Rear panel ventilated
3	132.5	179.5	18-5311-30	17-9203-47	17-9223-47
4	177	224	18-5411-30	17-9204-47	17-9224-47
6	266	313	18-5611-30	17-9206-47	17-9226-47

Note: Additional types of enclosures available on request!

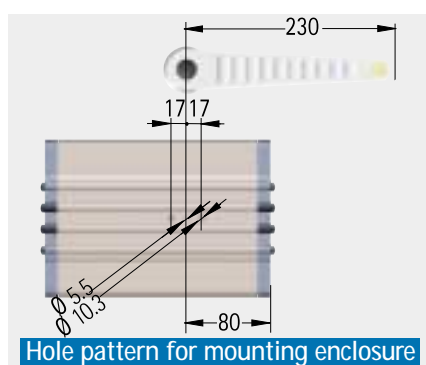
Included in delivery

Item	Pc.	Description
1	2	Side panels
2	2	Enclosure frame
3	4	Vertical mountings
4	1	Top shell, not ventilated
5	1	Bottom shell, not ventilated
6	8	Locks
7	8/20/32	Decorative knobs
8	4	Feet, non-skidding
9	1	Assembly set



Accessories

Prop-up and carrying handle



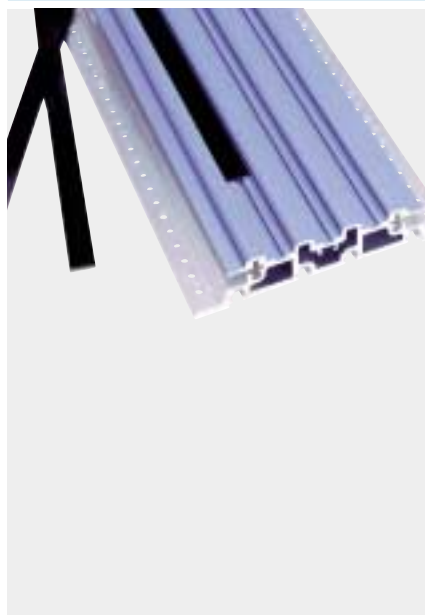
- handle can be set 30° by pressing a button to snap it into place

Carrying capacity: up to 50kg

Finish: RAL 7035 light grey

84 HP	Part no. 63 HP	42 HP
28-5100-84	28-5100-63	28-5100-42

Trim pieces, clippable

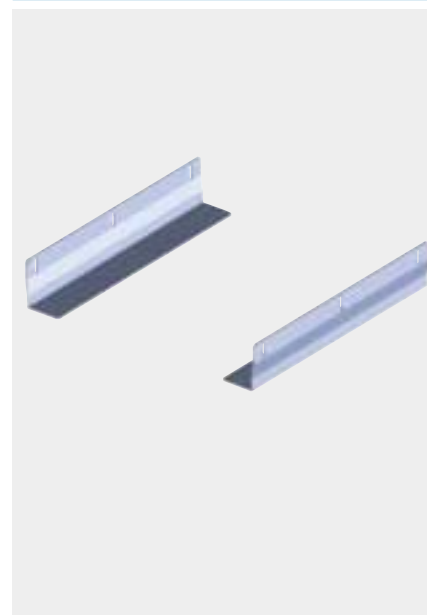


Standard colour: black

Material: plastic

Part no.
28-5010-02

Sliding rails (set)

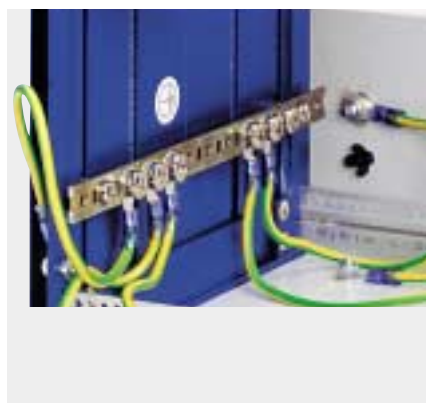


- incl. assembly material

Material: sheet steel, galvanized

Part no.
18-5013-26

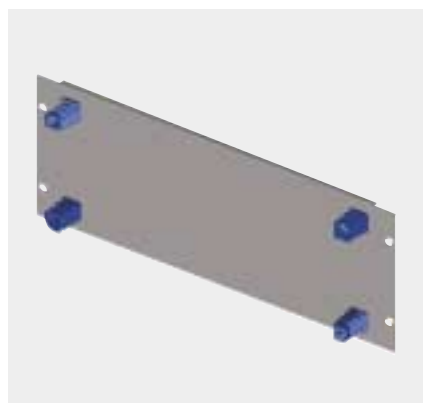
Earthing kit



- for earth connection in compliance with VDE

U	Part no.
3	28-5033-00
4	28-5034-00
6	28-5036-00

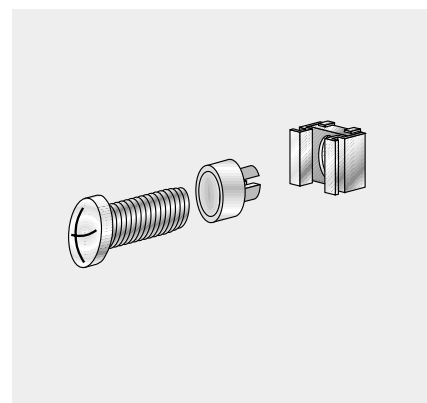
Rear wall with hinged feet



- for stable standing of the enclosure on the rear wall

U	Part no.
3	17-9233-47
4	17-9234-47
6	17-9236-47

M5 screw set



- 50 screws, M5 x 12
- 50 captive nuts, M5-8
- 50 decorative washers, M5 with collar

Description	Part no.
50 pc.	630-991



Proven quality - perfect protection

The 19" apraTEK is the ideal economical and functional enclosure.

apraTeK



Sample configuration: 20 U

The apraTEK enclosure has a welded, sturdy sheet steel construction. 19" vertical mountings are integrated into the front and rear allowing you to install 19" plug-in units and subracks in compliance with IEC 297-1.

The ventilated bottom and rear wall ensure proper ventilation in the standard enclosure, whereas the EMC version is completely enclosed and achieves a higher industrial protection.



19" **apraTeK** enclosure system

- perfect for mechanical engineering
- practical flip-up handles
- EMC version available
- IP20/IP30 degree of protection in compliance with IEC 529
- can be used as various types of enclosures, from a 19" enclosure to a 19" stand-alone enclosure
- skid-proof feet
- sliding rails are available for heavy plug-in units (please order separately)
- high stability
- installation dimensions in compliance with IEC 297-1
- extremely functional yet simple form

Matching 19" plug-in units

see p. 4.1

Matching 19" subracks

see p. 5.1



19" apraTeK enclosure system • 180/181

Specifications

Application:

19" plug-in units, shelves and 19" subracks can be installed in the enclosure. Because the enclosure is available in different sizes up to 20 U, it can also be used as a heavy-duty cabinet system in rough environments.

Construction:

The enclosure has a solid, welded sheet steel covering.

Finish: RAL 7035 light grey

Degree of protection:

IP 30 (not ventilated/EMC)

IP 20 (ventilated)

Standards:

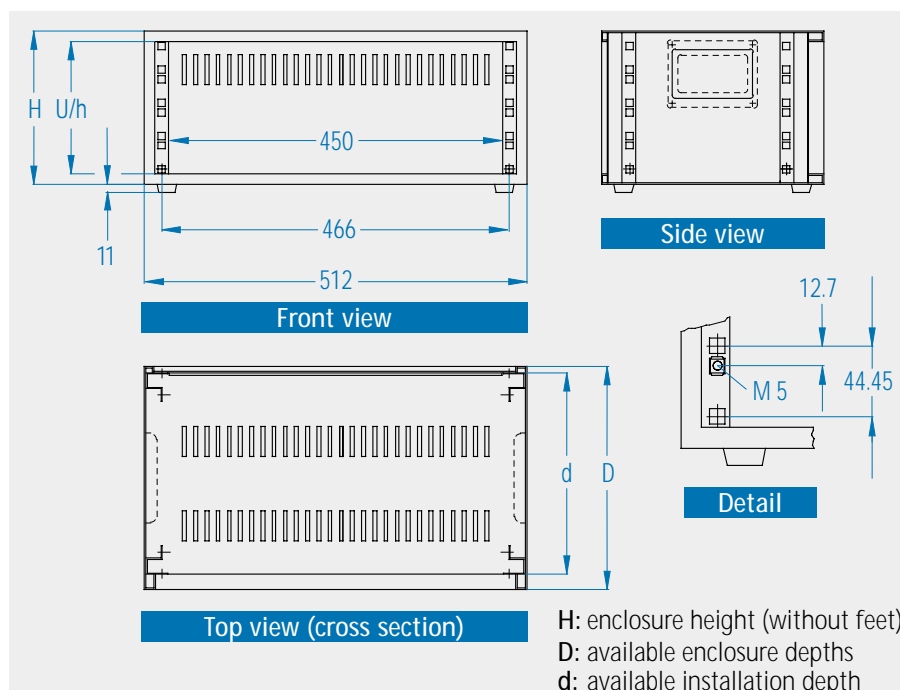
installation dimensions in compliance with IEC 297-1

Included in delivery

Item	Pc.	Description
1	1	Enclosure body, welded
2	1	Rear panel (ventilated/not ventilated)
3	2	Flip-up handle
4	4	Hinged feet
5		Assembly material
6		EMC sealing material (only in EMC model)

EMC model

The above 19" enclosure already protects against electromagnetic disturbances. If you require more protection, paint-free, galvanic pure contact surfaces and contact seals increase the shielding attenuation values.



Order information

19" enclosure apraTeK

Available height		Height	Enclosure with vents in rear panel and floor, with flip-up handles IP 20		
U	h mm	H mm	d = 270 mm D = 298 mm	d = 370 mm D = 398 mm	d = 470 mm D = 498 mm
3	132.5	160.5	180-223	180-323	-
4	177	205	180-224	180-324	180-424
5	221.5	249.5	180-225	180-325	180-425
6	266	294	180-226	180-326	180-426
7	310.5	338.5	180-227	180-327	-
8	354.5	382.5	-	180-328	-
9	399	427	-	180-329	180-429
10	444.5	472	-	181-350	181-450
12	533.5	561.5	-	181-352	181-452
14	622	650	-	181-354	181-454
16	711	739	-	181-356	181-456
18	800	828	-	181-358	181-458
20	889	917	-	181-360	181-460
Sliding (1 pair):			180-002	180-003	180-004

19" apraTeK enclosure for increased EMC protection

Available height		Height	EMC enclosure, not ventilated, IP 30 without flip-up handles		
U	h mm	H mm	d = 270 mm D = 298 mm	d = 370 mm D = 398 mm	d = 470 mm D = 498 mm
3	107	160.5	-	180-803	-
6	240	294	-	180-806	-
9	373.5	427	-	180-809	-

Note:

Because of the support angle for the RFI seals, the available mounting height is reduced to h.



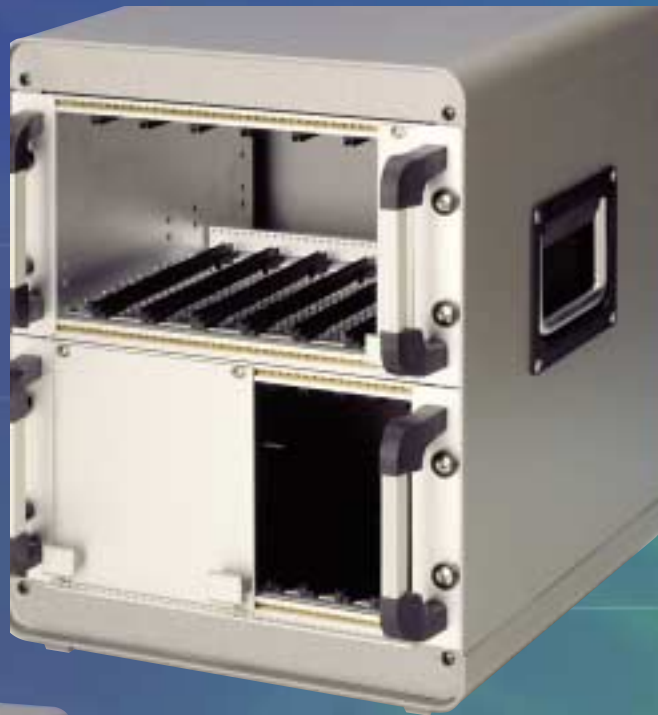
179 • 19" enclosure system



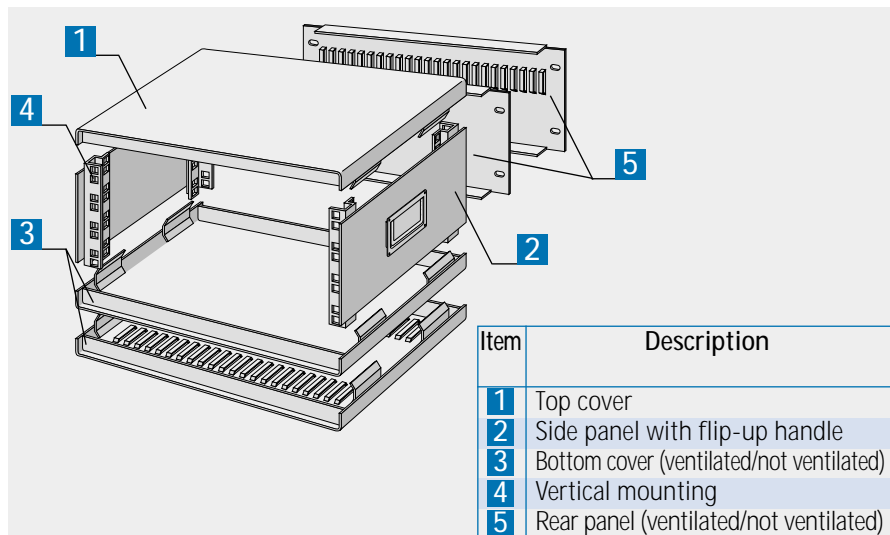
The enclosure for mobile application

19" enclosure system 179 is ideal for mobile use.

The light construction and built-in flip-up handles allow you to transport this enclosure easily. Because it only has a few screws, it can be assembled and dismantled quickly.



Specifications



19" enclosure system

- light, practical aluminium enclosure
- side flip-up handles standard
- IP 20/30 in compliance with IEC 529
- 1/2 19" version available
- dismantlable
- quick assembly using few screws
- installation dimensions in compliance with IEC 297-1

Matching 19" plug-in units

see p. 4.1

Matching 19" subracks

see p. 5.1



Specifications

Application:

19" plug-in units, shelves and 19" subracks can be installed in the enclosure.

Construction:

The enclosure has a simple construction based on side panels with built-in vertical mountings and top and bottom covers that can be assembled quickly.

Finish: RAL 7035 light grey

Degree of protection:

IP 30 (not ventilated)

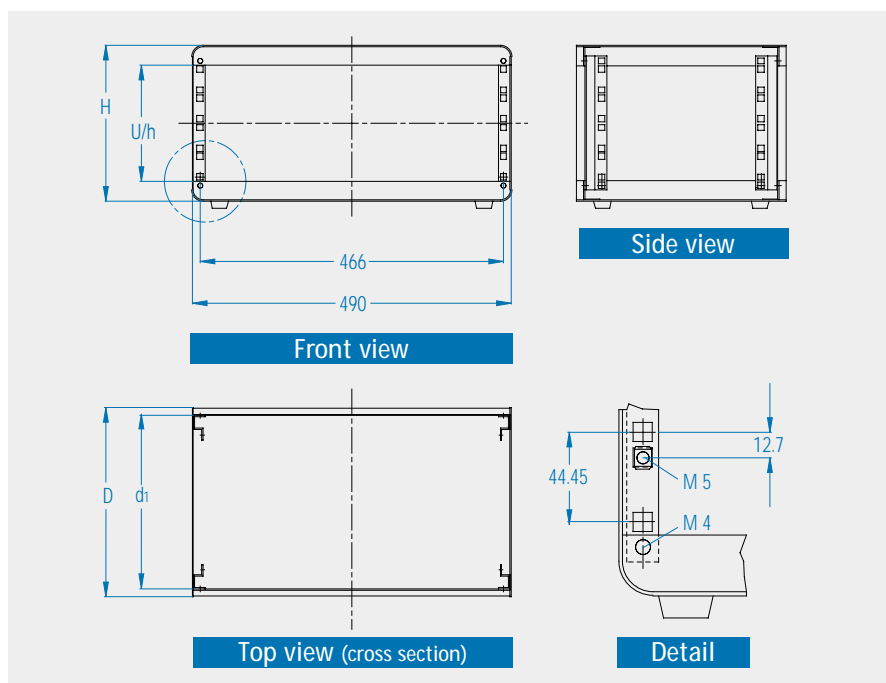
IP 20 (ventilated)

Standards:

installation dimensions in compliance with IEC 297-1

Delivery: not assembled

Order information



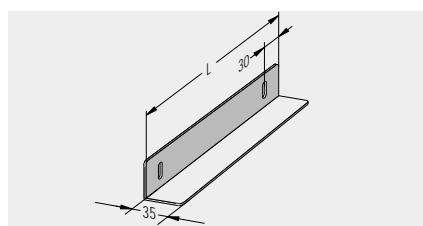
Available height		Height	19" aluminium enclosure, vents in rear panel and floor			19" aluminium enclosure, solid			1/2 19" aluminium enclosure, solid	
			Model with lateral handles							
U	h mm	H mm	d1=270 mm D=290 mm	d1=370 mm D=390 mm	d1=470 mm D=490 mm	d1=270 mm D= 290 mm	d1=370 mm D=390 mm	d1=470 mm D=490 mm	d1=270 mm D=290 mm	d1=370 mm D=390 mm
3	132.5	194.5	179-283	179-383	179-483	179-223	179-323	179-423	179-823	179-923
4	177	239	179-284	179-384	179-484	179-224	179-324	179-424	179-824	179-924
5	221.5	283.5	179-285	179-385	179-485	179-225	179-325	179-425	179-825	179-925
6	266	328	179-286	179-386	179-486	179-226	179-326	179-426	179-826	179-926
9	399	461	179-289	179-389	179-489	179-229	179-329	179-429	179-829	179-929
12	534	596	179-292	179-392	179-492	179-232	179-332	179-432		
15	668	730	179-295	179-395	179-495	179-235	179-335	179-435		
18	801	863	179-298	179-398	179-498	179-238	179-338	179-438		

Included in delivery

Item	Pc.	Description
1	1	Top shell
2	2	Side panels with flip-up handle
3	1	Bottom shell (ventilated/not ventilated)
4	4	Vertical mountings (integrated into side wall)
5	1	Rear panel (ventilated/not ventilated)
6	4	Enclosure feet
7		Assembly material

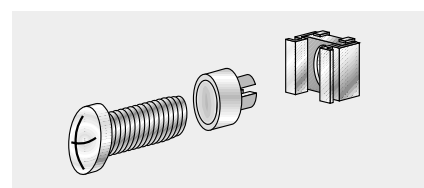
Accessories

Sliding rails



Enclosure depth D mm	Part no. (pair)
270	179-006
370	179-007
470	179-008

M5 screw set



- 50 screws, M5 x 12
- 50 captive nuts, M5-8
- 50 decorative washers, M5 with collar

Description	Part no.
50 pc.	630-991



Customized 19" enclosures



Plane table on 2 Berlin enclosures

- for lab or testing-room use



Control console with support arm system

- used as a machine control console
- integrated ventilation
- solid welded design

