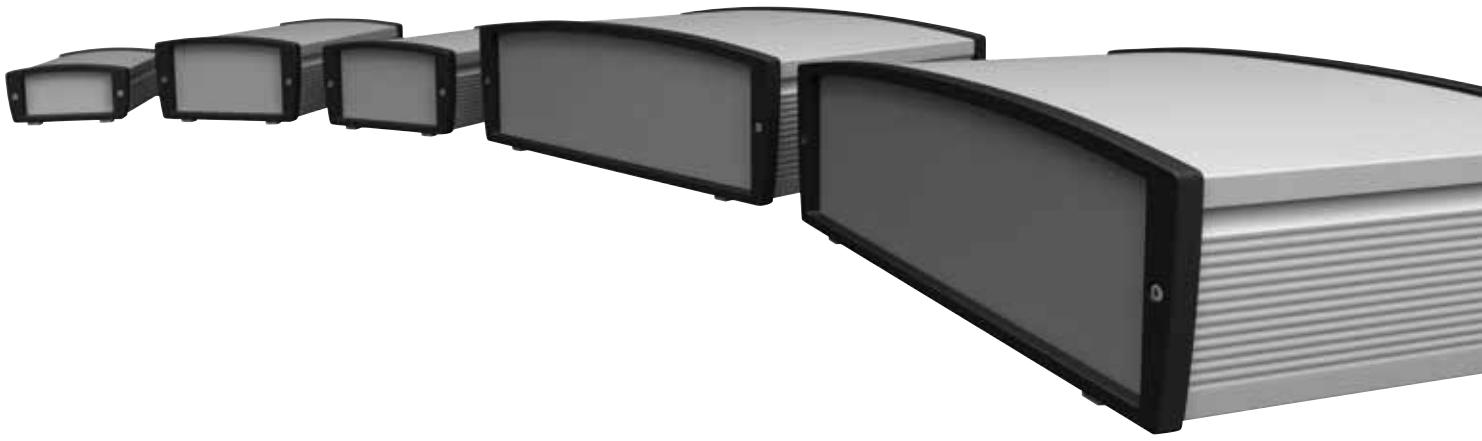
#01 PRODUCTS
CASES

// 19" Rackmount/desktop cases for plug-in units // Desktop cases for plug in units
// 19" Desktop cases // Small equipment cases



SmarTEC

leading.technology

POLY RACK TECH-GROUP

FreeTEC

19" rackmount/desktop case – which won the "if product design award"

#01 CONTENTS
CASES

Cases

19" Rackmount/desktop cases for plug-in units

#01 CONTENTS
CASES

Desktop cases for plug-in units

19" Desktop cases

Small equipment cases

PanelPC
Panel case

#01 CASES
GENERAL INFORMATION

// Overview

POLYRACK cases basically differ according to their application. Here particular attention is paid to the related technical specifications but also to the design of the case.

	Configuration with 19" Subracks	Configuration with plug-in modules	Configuration with custom components	Mounting in 19" racks
19" Rackmount/desktop cases for plug in units	–	●	●	●
Desktop cases for plug in units	–	●	●	–
19" Desktop cases	●	–	●	–
Small equipment cases	–	–	●	o

o Depending on the series

GENERAL INFORMATION

// Overview

19" Rackmount/desktop cases for plug-in units
For mounting plug-in units or customized configurations.
Cases from the FreeTEC, Magic and Space Series can be used as desktop cases or 19“ rackmount cases.

The illustration shows a FreeTEC case with plug-in units, assembled card cage and backplane.

Desktop cases for plug-in units
For mounting plug-in units or customized configurations.

The illustration shows a Series 84 case with plug-in units, assembled card cage and backplane.

19" Desktop cases
For mounting 19" subracks.

The illustration shows a Basic case with 19" subrack.

Small equipment Cases
For mounting plug-in modules and non-standard board formats or customized assemblies.
Series for special requirements, e.g. rail mounting or increased IP protection, are also available.

The illustration shows a SmarTEC case with processed front panel.

// Questions?

We are happy to help you. Please contact us.

HOTLINE Europe
+49.(0)800-POLYRACK (+49.(0)800-76597225)
sales@polyrack.com

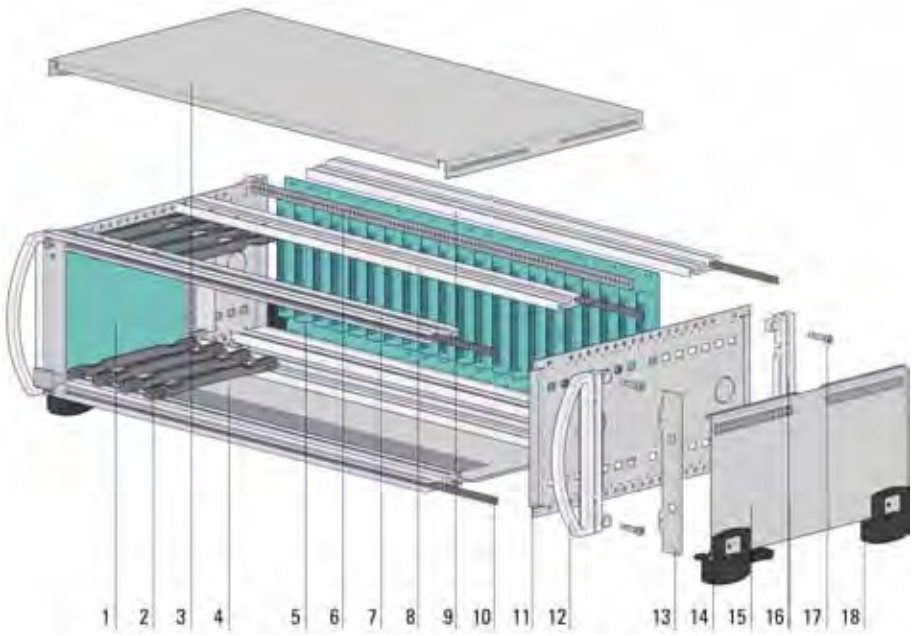
HOTLINE North America
+1.401.770.1500
polyrack_us@polyrack.com

Space
19" rackmount/desktop case

#01 CONTENT
CASES

19" Rackmount/desktop cases for plug-in units

GENERAL INFORMATION



// Application

19" subrack/desktop cases from POLYRACK for mounting plug-in units, typically in single or double Eurocard format.

// Configuration example

The diagram shows the configuration of a 19" rackmount/desktop case using the FreeTEC Series (Basic Unit type B) as an example.

1 Plug-in unit
2 Card guide*
3 Cover plate, top
4 Cover plate, bottom
5 Backplane*
6 Isolating strip*
7 Front rail, front
8 Rear rail B*
9 Front rail, rear
10 Threaded inserts*
11 Side plate
12 Corner bracket with special-design handle
13 19" adapter
14 Special-design tilt foot, hinged
15 Side cover
16 Corner bracket
17 Assembly hardware
18 Special-design tilt foot, rear

Parts marked with * are not included in the scope of delivery of the basic unit.

// Notes on standards, units of measurement and mounting/overall dimensions

Inner and outer dimensions
– IEC 60297-3-101
– IEC 60297-3-102
– IEC 60297-3-103

Unit of height U
Measurement unit for height in 19" rack systems
1 U = 44.45 mm

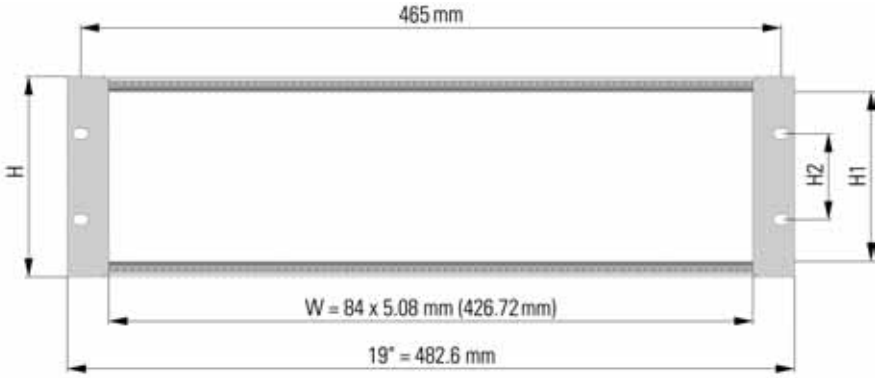
Increment unit HP
Measurement unit for width in 19" rack systems
1 HP = 5.08 mm

Dimensions specified in ordering tables
The dimensions, in particular those given in U and HP, are specified in relation to the application:

Height H = (n (U) x 44.45 mm) - 0.8 mm

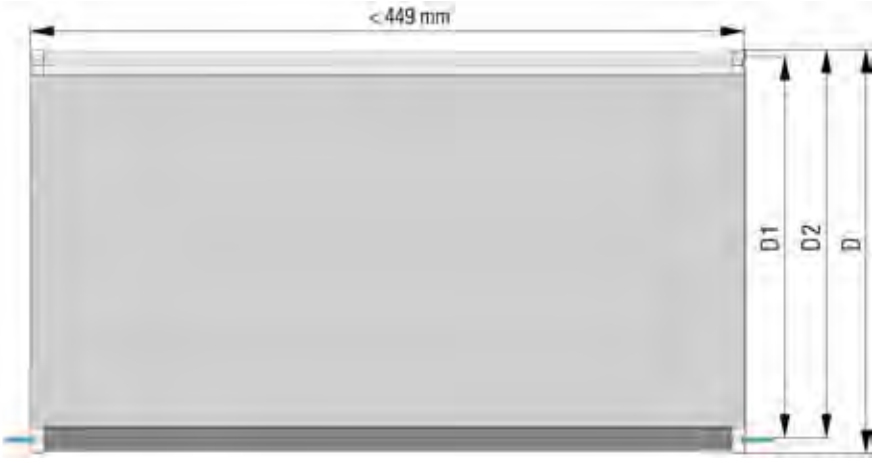
Usable width W = (n (HP) x 5.08 mm)
Actual rail dimension = usable width W + 5.08 mm

The depth D (in mm) indicates the total depth of the case without handles, feet, etc.

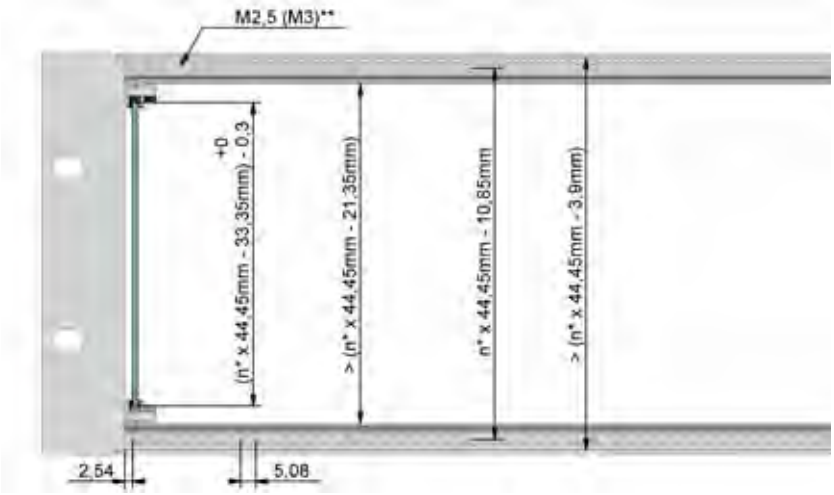


Mounting dimensions (mm)

	H	H1	H2
1 U	= 43.6	≤ 23.1	= 31.7
2 U	= 88.1	≤ 67.5	= 76.2
3 U	= 132.5	≤ 112.0	= 57.1
4 U	= 177.0	≤ 156.45	= 101.6
6 U	= 265.9	≤ 245.35	= 190.5

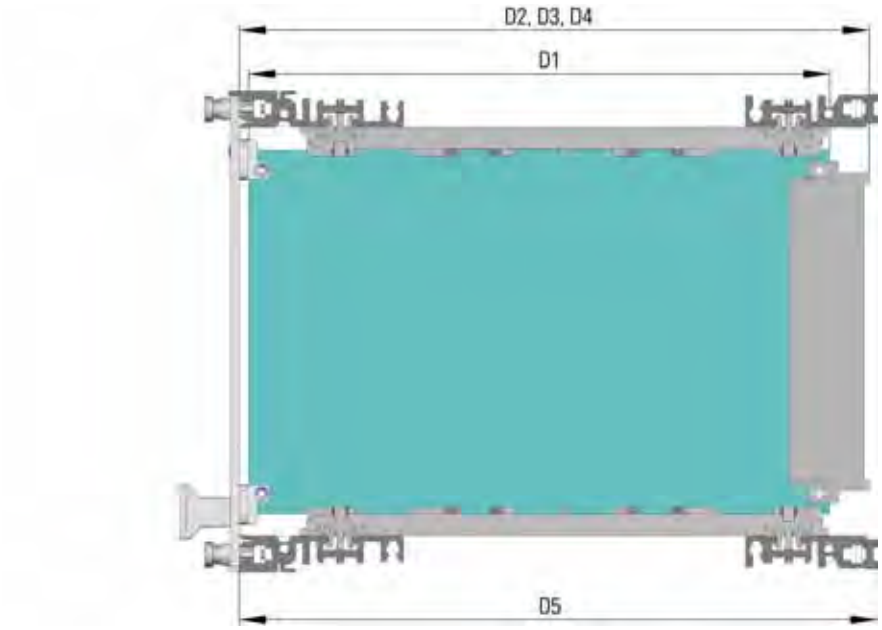


D = overall depth
D1 = usable internal dimension
D2 = mounting depth in 19" rack



* (U)
** Mounting holes for front panels

GENERAL INFORMATION

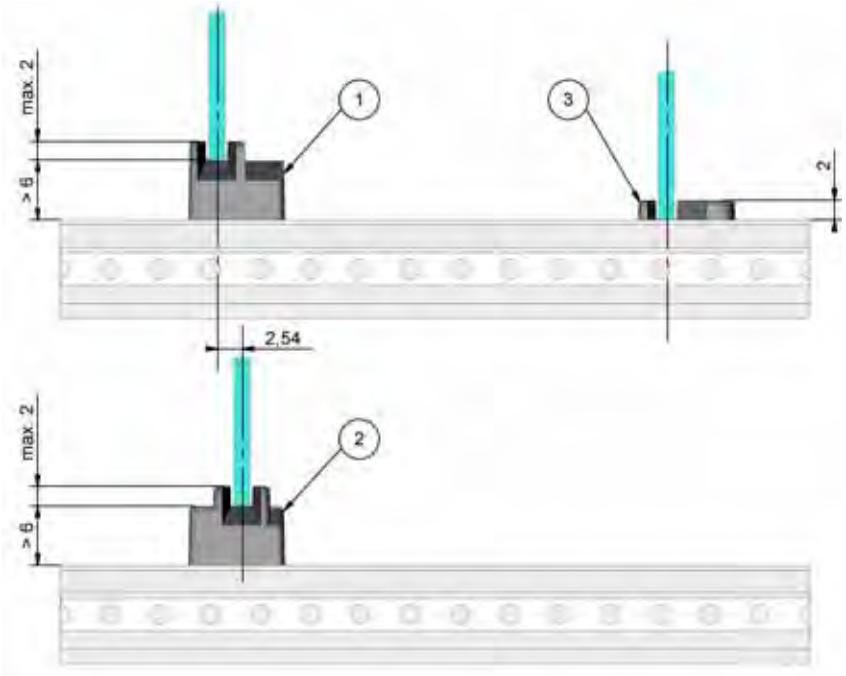


Dimensions for plug-in modules (mm)

D1*	D2 ± 0.4**	D3 ± 0.4***	D4 ± 0.4****
80.00	89.93	91.93	91.74
100.00	109.93	111.93	111.74
160.00	169.93	171.93	171.74
220.00	229.93	231.93	231.74
280.00	289.93	291.93	291.74

* PCB depth
** Insertion depth for IEC 60603-2 connectors, styles B, C, D and IEC 61076-4-113
*** Insertion depth for IEC 60603-2 connectors, styles F, G, H
**** Insertion depth for IEC 61076-4-101 connectors

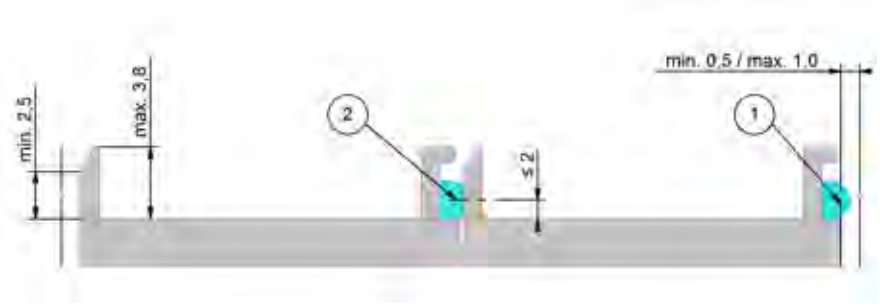
D5 = D1 + 15.5 mm

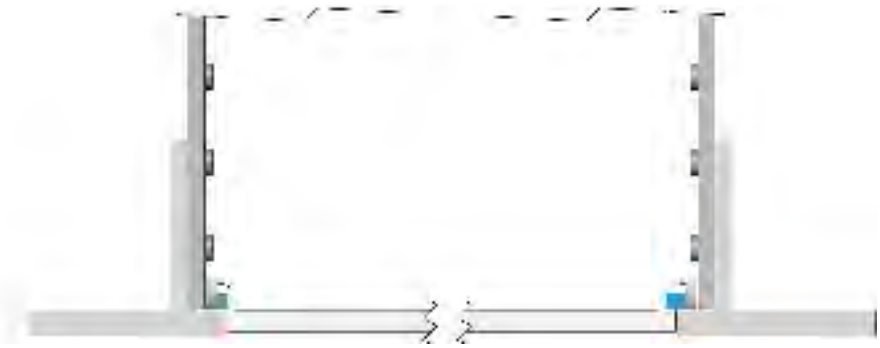


Card guides - front view

1 Card guide, standard
2 Card guide 2.54 mm offset
3 Card guide 4.4" (111.7 mm)

Slot width – depending on type – choice of 2 or 2.4 mm





EMC fabric shielding concept - front panel
In terms of a standardized contact point (contact level), this is defined as part of IEEE.1101.10.

The diagram shows excerpts from the IEEE 1101.10 standard based on EMC fabric.

1 Non-compressed shielding
2 Compressed shielding

ESD contact area
The electrostatic discharge is via a contact clip which is mounted in the front of the card guide. To ensure faultless performance, the ESD clip must make contact with the grounded sections of the card cage and the conductive section of the board.

*ESD contact area

// Manufacturing tolerances

All parts are subject to POLYRACK's factory specifications, whereby:

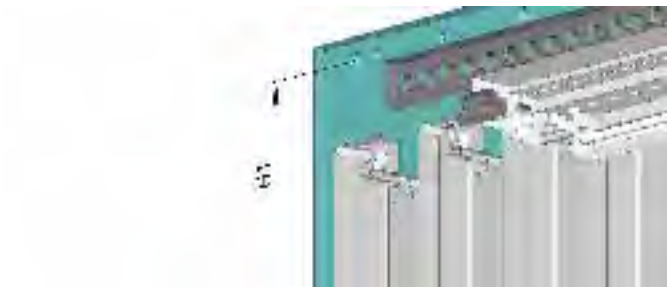
Extrusion specifications comply with
DIN EN 12020-1

Punched parts comply with
DIN ISO 6930-1/6930-2 and DIN 6932

GENERAL INFORMATION

// Basic units

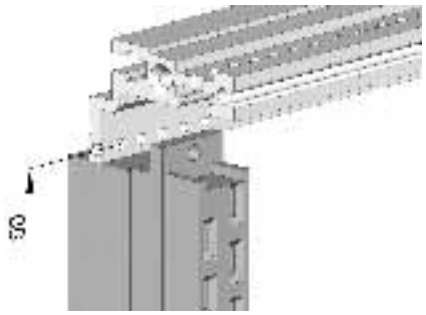
There is a choice between 3 basic units, depending on the application.



Basic unit B
For indirect mounting of backplanes with isolating strips or for mounting Z-rails.

The dimensions for backplane mounting are calculated as follows:
H1 = n x U - 10.85 mm

Calculation example for 3 U:
H1 = 3 x 44.45 mm - 10.85 mm = 122.5 mm



Basic unit C
With integrated Z-rail for connectors according to IEC 60603-2.

Basic unit E
For direct mounting of backplanes without isolating strips or for mounting perforated rails, extrusion width + 3 mm compared to basic unit B.

The dimensions for backplane mounting are calculated as follows:
H1 = n x U - 10.85 mm

Calculation example for 3 U:
H1 = 3 x 44.45 mm - 10.85 mm = 122.5 mm

// Overview of series

Series	Surface Alodined	Powder-coated	EMC shielding concept	Front rail with pitch perforation (IEEE 1101.1/.10)	Features
FreeTEC	–	●	●	●	19" adapter can be retrofitted "Special-design front" version for front panel without screws Optimized assembly time
Magic	–	●	●	–	Special-design side extrusion for high stability Top/bottom covers can be removed separately
Space	●	–	●	–	Can be used for all purposes on basis of a side extrusion For individual configurations (chassis plate)

// Custom designs

Custom designs are possible in various widths and depths and with individual processing to your specifications.

// Individual assembly

Components are available for your individual assembly.

// Assembly service

Our assembly service is available to you on request.

// Supplementary products

#01 FRONT PANELS AND PLUG-IN MODULES
⇨ Front panels, PCB holders, plug-in modules and cassettes

#01 SYSTEMS TECHNOLOGY
⇨ Backplanes

// Questions?

We are happy to help you. Please contact us.

HOTLINE Europe
+49.(0)800-POLYRACK (+49.(0)800-76597225)
sales@polyrack.com

HOTLINE North America
+1.401.770.1500
polyrack_us@polyrack.com

FreeTEC
19" rackmount/desktop case

FreeTEC

Product information

The cases of the series awarded the „iF product design award“ can be used as a desktop or a 19" rackmount case. Typical is the configuration with standardized plug-in units, but also with custom electronics or assemblies.
In the case version with "special-design front" the front panel is mounted without screws and is therefore suitable e.g. for membrane keyboards.
The cases are suitable for use under EMC criteria and can be upgraded as required with additional shielding material. The frame construction is self-supporting, the covers (top/bottom covers, side covers) are quick to assemble.
Perforation in the bottom cover, side covers and rear panel provides for heat dissipation of the assemblies.

Standards

– Mounting dimensions in accordance with IEC 60297-2
– IP20 rating in accordance with IEC 60529

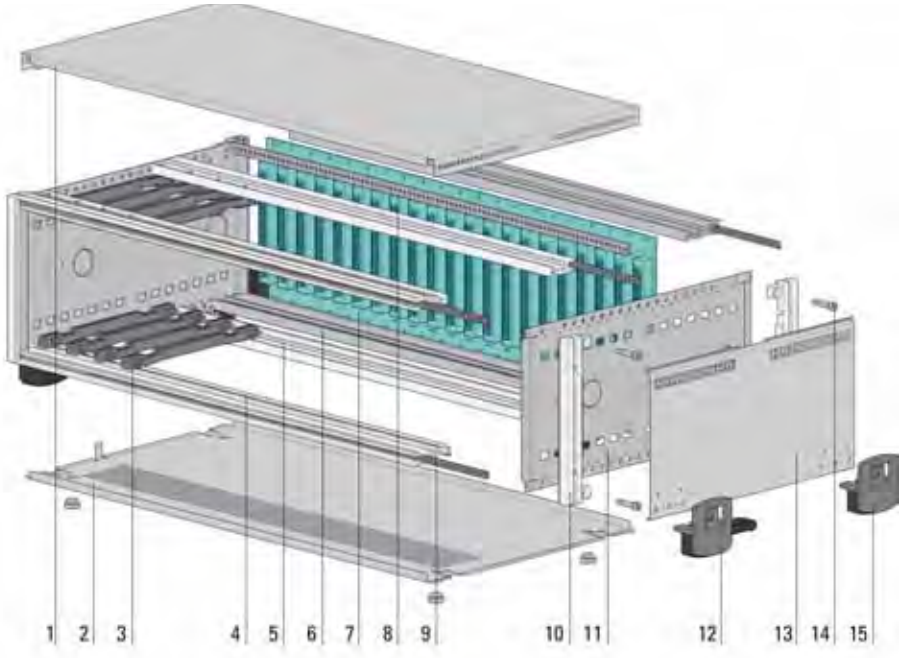
Notes

– “IEEE” version: Front rail(s) with pitch perforation according to IEEE 1101.10
– Rails are positioned in 10 mm increments
– Grounding tabs integrated into the top/bottom covers and side covers.

Overview

Basic units	H in U					W in HP		D in mm		Page
	1	2	3	4	6	42	84	253	353	
- Standard	●					●	●	●	–	CAS 01.13
		●	●			●	●	●	●	CAS 01.13
				●	●	–	●	●	●	CAS 01.13
- IEEE	–	–	●	–		●	●	●	●	CAS 01.13
	–	–		–	●	–	●	●	●	CAS 01.13
- Special-design front	●					●	●	●	–	CAS 01.14
		●	●			●	●	●	●	CAS 01.14
				●	●	–	●	●	●	CAS 01.14

// Product information



Configuration example

The diagram shows the configuration of a Free-TEC Series desktop case (Basic Unit type B).

1 Cover plate, top
2 Card guide*
3 Cover plate, bottom
4 Front rail, front
5 Rear rail B*
6 Front rail, rear
7 Backplane*
8 Isolating strip*
9 Threaded inserts
10 Corner bracket
11 Side plate
12 Special-design tilt foot, hinged
13 Side cover
14 Assembly hardware
15 Special-design tilt foot, rear

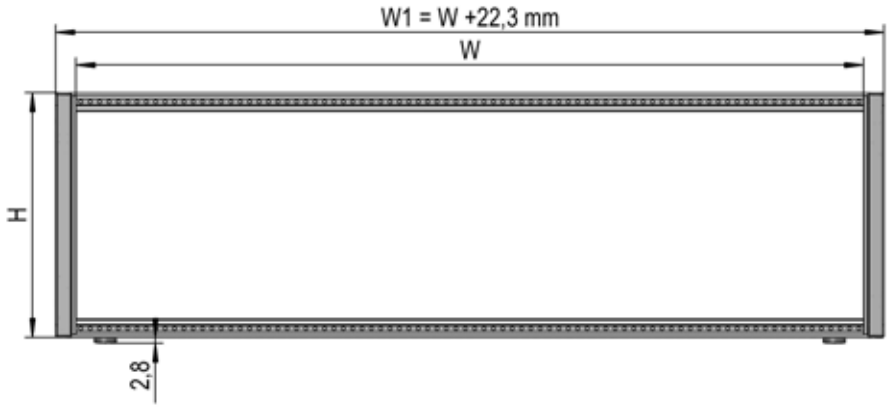
Parts marked with * are not included in the scope of delivery of the basic unit, i. e. must be ordered separately.

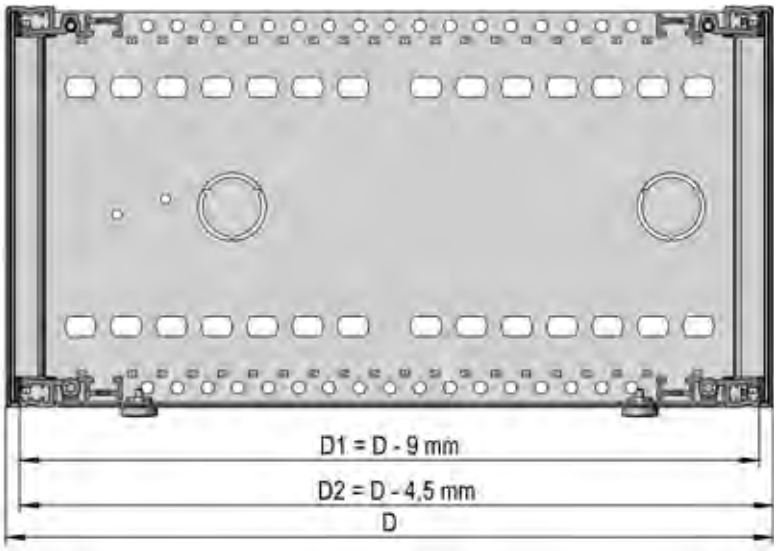
Surface finishing

– Bezels powder-coated „sand metallic“
– Covers powder-coated „dark blue“

Dimension diagrams

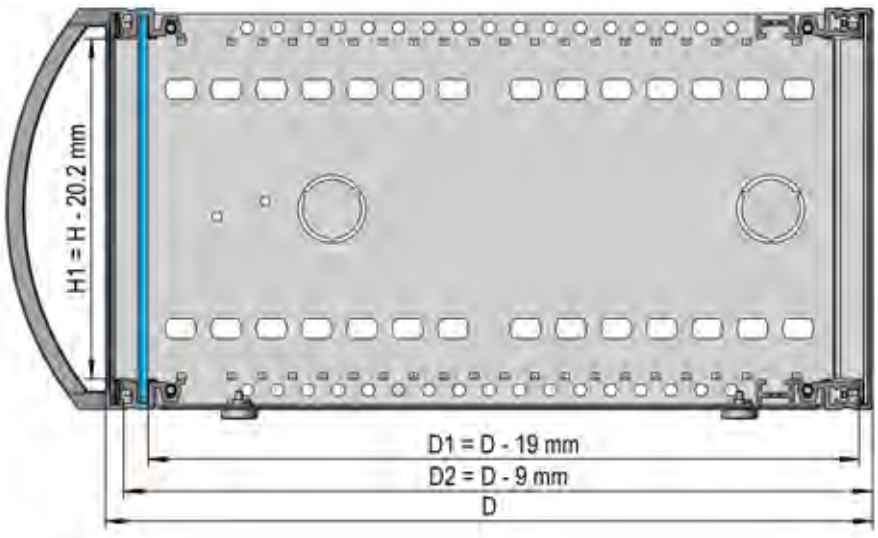
Front view





Side view, standard

D = overall depth
D1 = usable internal dimension
D2 = mounting depth in 19" rack



Side view, special-design front

D = overall depth
D1 = usable internal dimension
D2 = mounting depth in 19" rack

(front panel shown in blue)

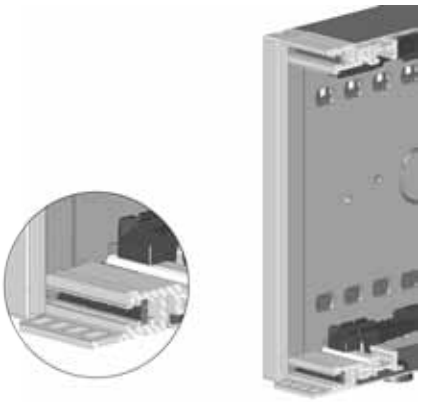
// Basic units

Basic units

The FreeTEC Series cases are available in 3 basic versions. These are by default designed as desktop cases. The 19" adapters required for assembly in 19" racks must be ordered separately. Further configurations can be made by combining different components as required

Features of the basic units

Standard



IEEE

Special-design front

FreeTEC case, standard

Scope of delivery

Cover plate, bottom	1 pc
Cover plate, top	1 pc
Side plate	2 pcs
Side cover	2 pcs
Corner bracket	4 pcs
Front rail	4 pcs
Threaded insert	4 pcs
Rubber foot, self-adhesive 20 x 20 x 8 mm	4 pcs
Plug-in foot ø12 x 3 mm	4 pcs
Assembly kit	1 pc

Delivery form

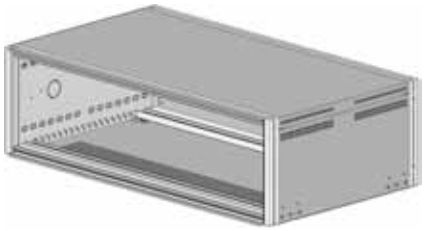
Individual components in units for self-assembly

Notes

– Conversion kits (choice of B or E) and threaded inserts must be ordered separately
– The 19" adapters required for assembly in 19" racks must be ordered separately

Ordering table

H	W	H in mm	W1 in mm	D = 253 mm	D = 353 mm
1 U	42 HP	43.6	235	**24 11 00 01**	–
1 U	84 HP	43.6	449	**24 11 00 03**	–
2 U	42 HP	88.1	235	**24 11 00 04**	**24 11 00 19**
2 U	84 HP	88.1	449	**24 11 00 06**	**24 11 00 21**
3 U	42 HP	132.5	235	**24 11 00 07**	**24 11 00 22**
3 U	84 HP	132.5	449	**24 11 00 09**	**24 11 00 24**
4 U	42 HP	177	235	–	–
4 U	84 HP	177	449	**24 11 00 12**	**24 11 00 27**
6 U	42 HP	266	235	–	–
6 U	84 HP	266	449	**24 11 00 15**	**24 11 00 30**



FreeTEC case, IEEE

Scope of delivery

Cover plate, bottom	1 pc
Cover plate, top	1 pc
Side plate	2 pcs
Side cover	2 pcs
Corner bracket	4 pcs
Front rail	4 pcs
Threaded insert	4 pcs
Rubber foot, self-adhesive 20 x 20 x 8 mm	4 pcs
Plug-in foot ø12 x 3 mm	4 pcs
Assembly kit	1 pc

Delivery form

Individual components in units for self-assembly

Notes

– Conversion kits (choice of B or E) and threaded inserts must be ordered separately
– The 19" adapters required for assembly in 19" racks must be ordered separately

Ordering table

H	W	H in mm	W1 in mm	D = 253 mm	D = 353 mm
3 U	42 HP	132.5	235	**24 11 00 31**	**24 11 00 37**
3 U	84 HP	132.5	449	**24 11 00 33**	**24 11 00 39**
6 U	42 HP	266	235	–	–
6 U	84 HP	266	449	**24 11 00 36**	**24 11 00 42**

FreeTEC

// Basic units

FreeTEC case, special-design front

Scope of delivery

Cover plate, bottom	1 pc
Cover plate, top	1 pc
Side plate	2 pcs
Side cover	2 pcs
Corner bracket with handle	2 pcs
Corner bracket, rear	2 pcs
Front rail for handle	2 pcs
Front rail (rear)	2 pcs
Threaded insert	4 pcs
Special-design tilt foot	4 pcs
Assembly kit	1 pc

Delivery form

Individual components in units for self-assembly

Note

– Special-design front panel and threaded inserts (rear front rail) must be ordered separately

Ordering table

H	W	H in mm	W1 in mm	D = 253 mm	D = 353 mm
1 U	42 HP	43.6	235	24 10 00 01	–
1 U	84 HP	43.6	449	24 10 00 03	–
2 U	42 HP	88.1	235	24 10 00 04	24 10 00 19
2 U	84 HP	88.1	449	24 10 00 06	24 10 00 21
3 U	42 HP	132.5	235	24 10 00 07	24 10 00 22
3 U	84 HP	132.5	449	24 10 00 09	24 10 00 24
4 U	42 HP	177	235	–	–
4 U	84 HP	177	449	24 10 00 12	24 10 00 27
6 U	42 HP	266	235	–	–
6 U	84 HP	266	449	24 10 00 15	24 10 00 30

Conversion kits

Extruded channels are provided for self-forming M4 screws for mounting to the side plate. Front and rear rails include incremented holes for the insertion of card guides.

Conversion kit, basic unit B – FreeTEC

For indirect mounting of backplanes with isolating strips or for mounting Z-rails

Material
Aluminum extrusion, alodined

Scope of delivery

Rear rail B	2 pcs
Center rail B (6 U only)	1 pc
Assembly kit	1 pc

Delivery form
In units for self-assembly

Note
– Threaded inserts and card guides must be ordered separately

Ordering table

H	42 HP	84 HP
1 - 4 U	24 12 00 20	24 12 00 24
6 U	24 12 00 21	24 12 00 25

Conversion kit, basic unit E – FreeTEC

For direct mounting of backplanes without isolating strips or for mounting perforated rails, extrusion width + 3 mm compared to basic unit B

Material
Aluminum extrusion, alodined

Scope of delivery

Rear rail E	2 pcs
Center rail E (6 U only)	1 pc
Assembly kit	1 pc

Delivery form
In units for self-assembly

Note
– Threaded inserts and card guides must be ordered separately

Ordering table

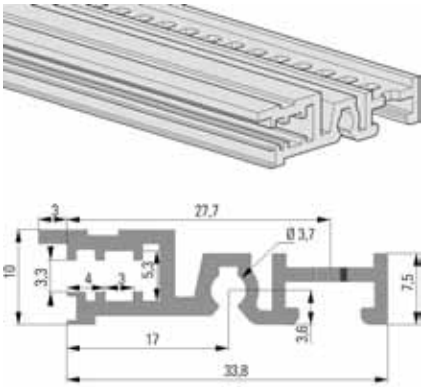
H	42 HP	84 HP
1 - 4 U	24 12 00 26	24 12 00 30
6 U	24 12 00 27	24 12 00 31

// Single components

Front rails

Extruded channels are provided for self-forming M4 screws for mounting to the side plate. Front rails include incremented holes for the insertion of card guides.

The „special-design front rail“ is an exception; this is designed for insertion of the front panel and does not include incremented holes.



Front rail, standard – FreeTEC

For mounting plug-in units or front panels

Material
Aluminum extrusion alodined, visible side powder-coated "sand metallic"

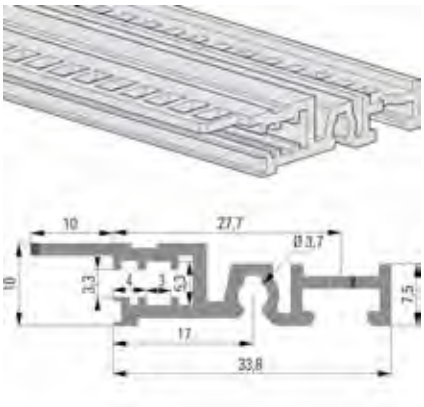
Scope of delivery
Front rail, standard 1 pc

Delivery form
In units for self-assembly

Note
– Secured with one screw

Ordering table

W	Alodined / powder-coated
42 HP	**24 12 00 01**
84 HP	**24 12 00 02**



Front rail, IEEE – FreeTEC

For mounting plug-in units in compliance with IEEE 1101.1/IEEE 1101.10

Material
Aluminum extrusion alodined, visible side powder-coated "sand metallic"

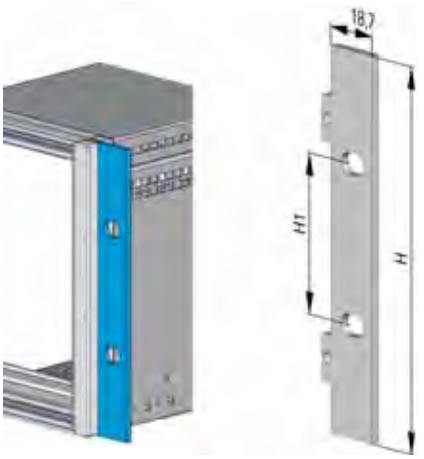
Scope of delivery
Front rail, IEEE 1 pc

Delivery form
In units for self-assembly

Notes
– Secured with one screw
– Corners notched

Ordering table

W	Alodined / powder-coated
42 HP	**24 12 00 03**
84 HP	**24 12 00 04**



19"-Adapter – FreeTEC

Enables mounting in 19" racks

Material
Aluminum 3 mm, powder-coated "sand metallic"

Scope of delivery
19“ adapter 1 PU (10 pcs)

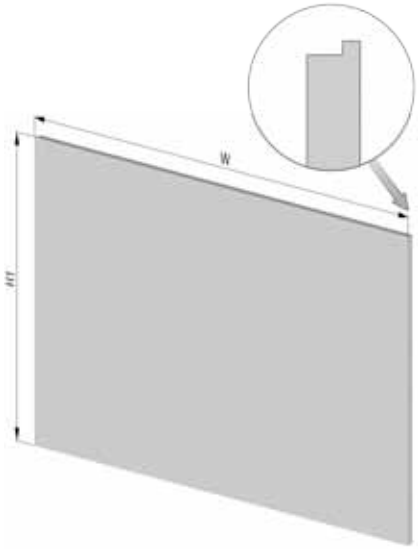
Delivery form
In units for self-assembly

Note
– Assembly hardware contained in FreeTEC assembly kit

Ordering table

H	H1 in mm	Powder-coated
1 U	31.75	**24 12 00 10**
2 U	76.20	**24 12 00 11**
3 U	57.15	**24 12 00 12**
4 U	101.60	**24 12 00 13**
6 U	190.50	**24 12 00 14**

Special-design front panel, rear panel



Special-design front panel – FreeTEC

For screwless mounting to front rail with special-design front

Material
Aluminum 3 mm, front anodized/rear alodined

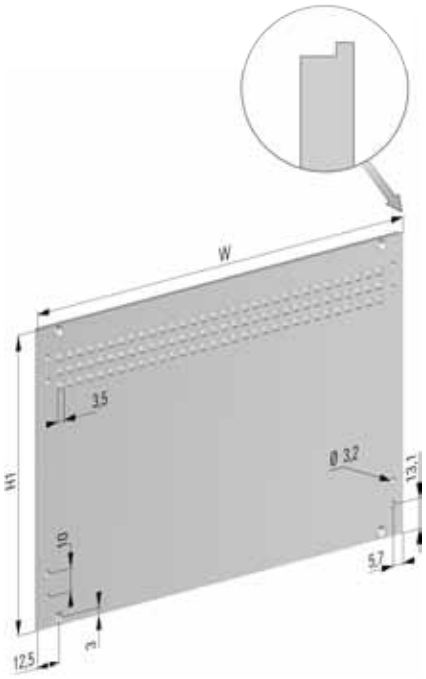
Scope of delivery
Special-design front panel 1 pc

Delivery form
Individual components in units for self-assembly

Notes
– Can only be used in conjunction with special-design front rail
– Prepared for fixation of EMC shielding D

Ordering table

H	H1 in mm	W = 42 HP	W = 84 HP
1 U	40.1	24 13 00 20	24 13 00 30
2 U	84.5	24 13 00 21	24 13 00 31
3 U	129.0	24 13 00 22	24 13 00 32
4 U	173.4	–	24 13 00 33
6 U	262.3	–	24 13 00 34



Rear panel – FreeTEC

With ventilation slits for better heat dissipation

Material
Aluminum 2.5 mm, front anodized/rear alodined

Scope of delivery
Rear panel 1 pc

Delivery form
Individual components in units for self-assembly

Notes
– Prepared for fixation of EMC shielding D
– Prepared for assembly of tilt feet

Ordering table

H	H1 in mm	W = 42 HP	W = 84 HP
1 U	39.6	–	–
2 U	84.1	–	–
3 U	128.5	24 13 00 03	24 13 00 13
4 U	173.0	–	24 13 00 14
6 U	261.9	–	24 13 00 15

// Single components

Tilt feet

The special-design tilt feet and the mounting feet for the rear panel were specially designed for the FreeTEC case. Adhesive rubber feet are also available. These are included in the FreeTEC assembly kit or can be ordered separately as accessories.

Special-design tilt foot – FreeTEC

When used as desktop case

Material
TPE, black

Scope of delivery

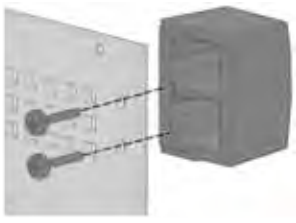
Foot, rear	2 pcs
Tilt foot, front	2 pcs
Assembly kit	1 pc

Delivery form
As kit for self-assembly

Notes
– Max. load 5 kg
– Tilt angle of case 10°

Ordering table

Order no.
24 12 00 41



Mounting foot for rear panel – FreeTEC

For mounting and for cable bend protection

Material
TPE, black

Scope of delivery

Mounting feet	4 pcs
Assembly kit	1 pc

Delivery form
In units for self-assembly

Ordering table

Order no.
24 12 00 40

Carrying/support handle

To convert the cases for mobile use.

Carrying /support handle – FreeTEC

Can be mounted at a later point in time, only the side covers of the case need to be replaced.

Material
Side legs PA 6, RAL 9005 (deep black)
Handle bar, aluminum, anodized
Side covers, sheet steel 0,8 mm, hot-dip galvanized

Scope of delivery

Handle side legs	2 pcs
Handle bar	1 pc
Side cover left/right	2 pcs
Assembly kit	1 pc

Delivery form
As kit for self-assembly

Notes
– Max. load 30 kg
– Adjustable in steps of 30°

Ordering table

H	W	D = 253 mm	D = 353 mm
2 U	42 HP	**24 10 01 00**	**24 10 01 12**
2 U	84 HP	**24 10 01 02**	**24 10 01 14**
3 U	42 HP	**24 10 01 03**	**24 10 01 15**
3 U	84 HP	**24 10 01 05**	**24 10 01 17**
4 U	42 HP	–	–
4 U	84 HP	**24 10 01 08**	**24 10 01 20**
6 U	42 HP	–	–
6 U	84 HP	**24 10 01 11**	**24 10 01 23**

// Single components

EMC shielding material

To ensure that the electronic products function satisfactorily in an electromagnetic environment i. e. that the electromagnetic compatibility (EMC) of the products is guaranteed, shielding material is required, dependent on the electronics and the ambient conditions.

EMC shielding is used to establish contact with mechanical components and thus protect plug-in units and electronics against radio frequency interference.

EMC fabric shielding material – FreeTEC

The EMC shielding material D is used to establish contact between
– Side plate and top/bottom cover
– Front/rear rail and top/bottom cover
– Front/rear rail and front/rear panel
– Front/rear panel and side plate

Material
Conductive fabric, 1.5 x 2 mm, CuNi coated

Scope of delivery
by length (L = 1000 mm) 1 pc

Delivery form
In units for self-assembly

Notes
– Single sided adhesive (peel-off film)
– Thermal resistance: -40°C to +100°C
– Fire resistance rating: UL 94V0

Ordering table

Order no.
23 10 04 32

Assembly kit – FreeTEC

The assembly kit is required for customized configuration of FreeTEC cases.

Notes

– The assembly kit is supplied with every FreeTEC basic unit
– Individual components cannot be ordered separately

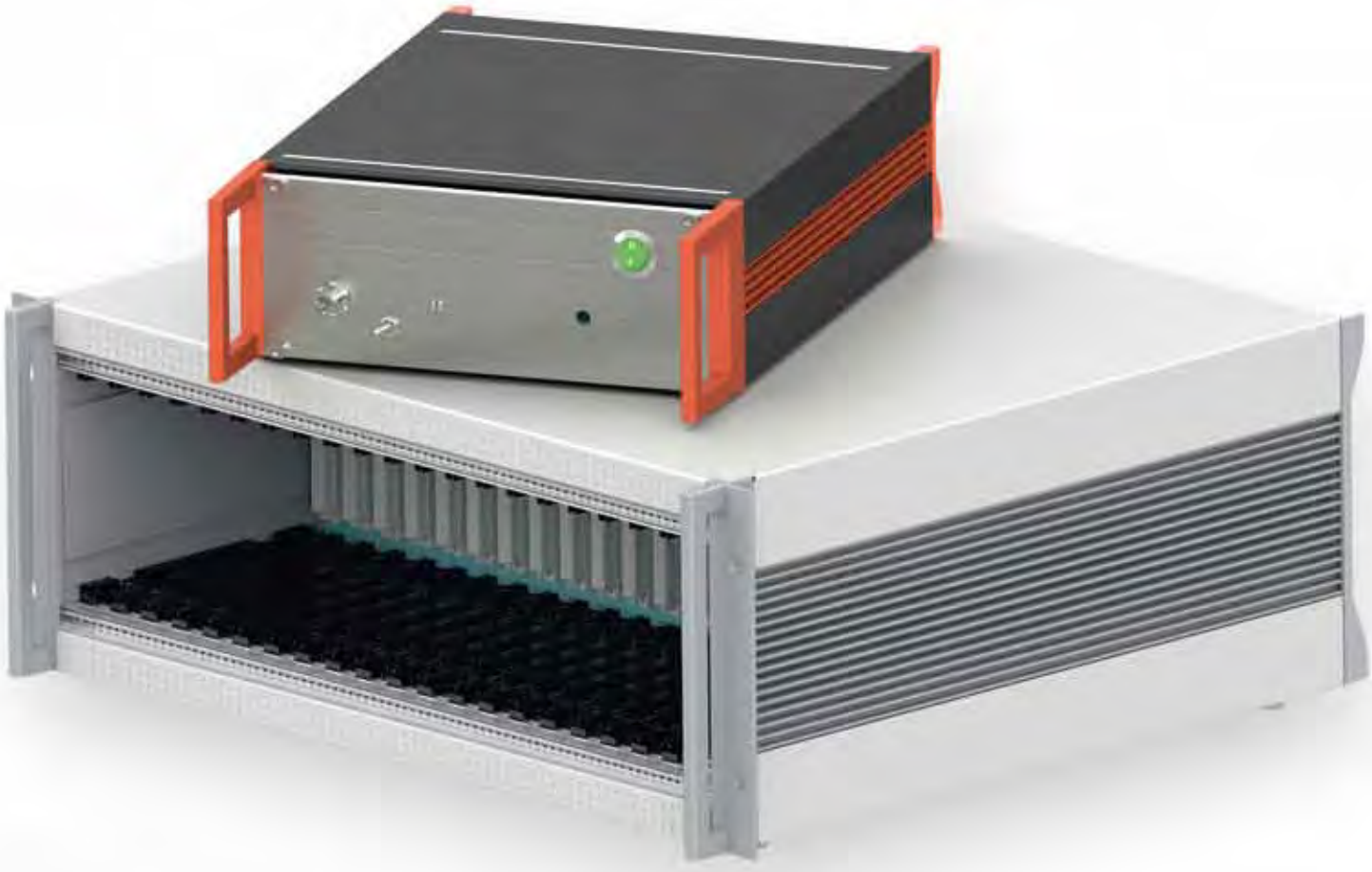
Scope of delivery

	Usage	Description	Version/material	Standard	Quantity
	Mounting bottom cover to side cover	Countersunk head screw with Torx T8	M2.5 x 6 mm Steel zinc-plated	similar to DIN 965	4 pcs
	Connecting extrusions to side plate and corner bracket	Cylinder head screw, eco-syn with Torx T20	M4 x 20 mm Steel zinc-plated	ISO 7049	8 pcs
	Mounting 19" adapter on corner bracket	Hex socket set screw with cup point	M4 x 12 mm Steel zinc-plated	DIN 916	4 pcs
	Insertion into bottom cover	Rubber plug-in foot	ø12 x 3 mm Hytrel, black UL 94 V0		4 pcs
	For affixing to bottom cover	Rubber foot, self-adhesive	20 x 20 x 8 mm PUR, black UL 94 HB		4 pcs

Ordering table

Order no.
24 12 00 86

Magic
19" rackmount/desktop case



Magic

Product information

The Magic case series features an esthetically pleasing design, functionality and stability. The frame construction with side extrusions is self-supporting. The top and bottom covers can be removed individually, thus ensuring excellent accessibility.
Designed to accommodate plug-in modules and non-standard components, the cases serve as desktop cases or, in conjunction with the 19" mounting brackets, as rackmount cases in 19" racks.
Heat is dissipated via ventilation slits in the region of the card cage and via the rear panel. The ribbed structure of the side extrusions supports heat dissipation and brings out the design.

The cases are suitable for use under EMC criteria and can be upgraded as required with additional gasketing material.

Standards

- Mounting dimensions in accordance with IEC 60297-2
- IP20 rating in accordance with IEC 60529

Notes

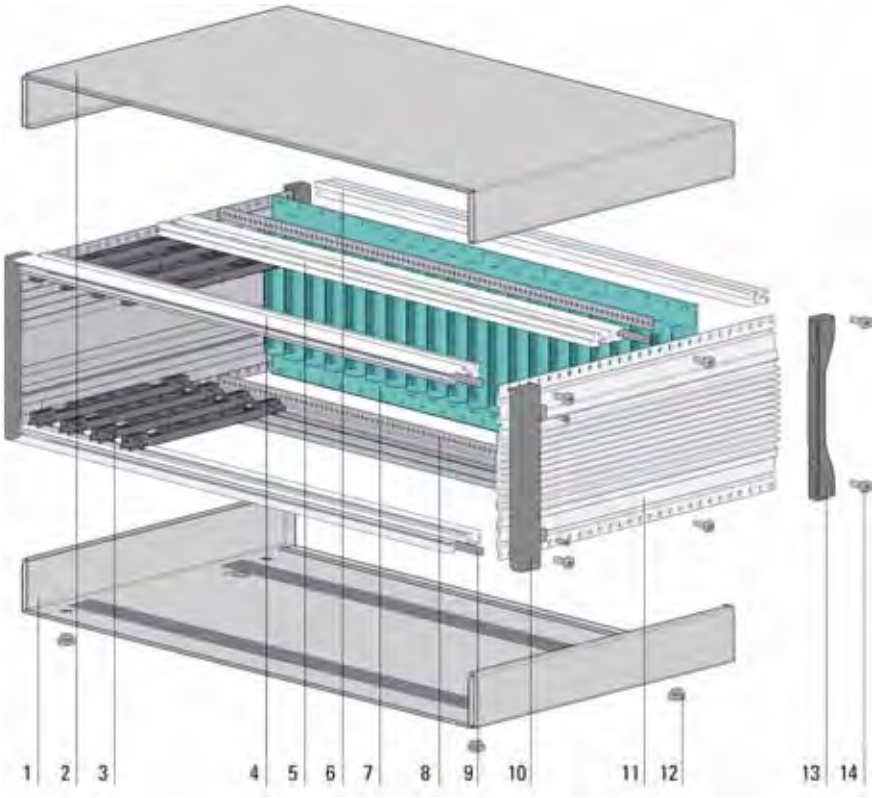
- "IEEE" version: Front rail(s) with pitch perforation according to IEEE 1101.10
- Rails are positioned in 10 mm increments
- Grounding tabs in top/bottom covers; Grounding tabs for side extrusions are included in the assembly kit.

Overview

Basic units	H in U				W in HP		D1 in mm			Page
	2	3	4	6	42	84	279	359	439	
- Standard	●				●	●	●	●	–	CAS 01.29
		●	●	●	●		●	●	–	CAS 01.29
		●	●	●		●	●	●	●	CAS 01.29
- With carrying/support handle	●				●	●	●	●	–	CAS 01.29
		●	●	●	●		●	●	–	CAS 01.29
		●	●	●		●	●	●	●	CAS 01.29

Magic

// Product information



Configuration example

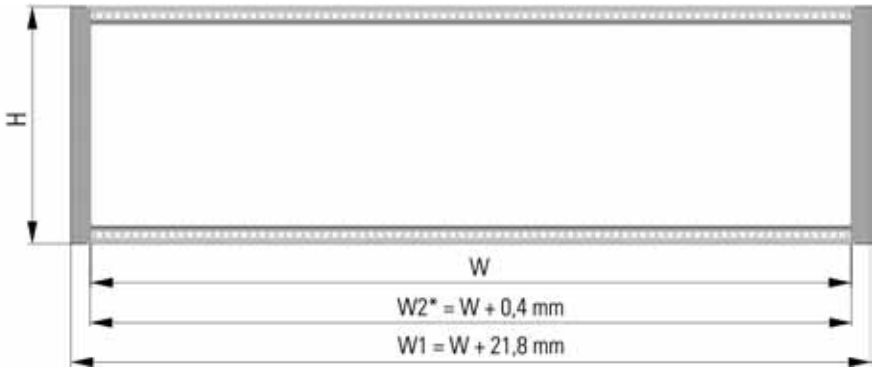
The diagram shows the configuration of a 19" Magic Series rackmount/desktop case (Basic Unit type B)

1 Bottom cover
2 Top cover
3 Card guide*
4 Front rail
5 Rear rail B*
6 Rear rail with M3 threads
7 Backplane*
8 Isolating strip*
9 Threaded inserts*
10 Corner bracket*
11 Side extrusion
12 Plug-in foot
13 Corner bracket
14 Assembly hardware

Parts marked with * are not included in the scope of delivery of the basic unit, i. e. must be ordered separately.

Surface finishing

– Bezel and extrusions powder-coated RAL 7001 (silver gray)
– Top and bottom cover powder-coated RAL 7035 (light gray)



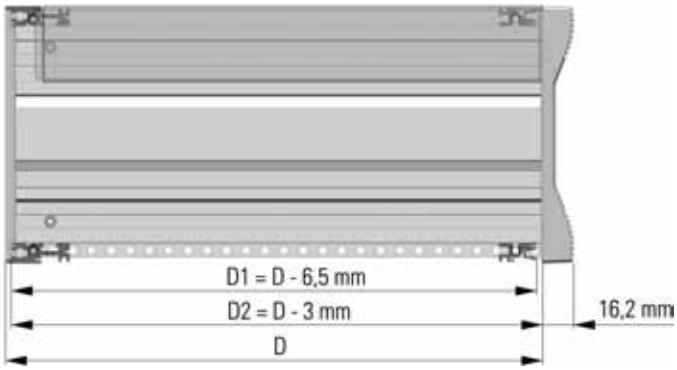
Dimension diagrams

Front view

* W2 = inner mounting dimension

Note

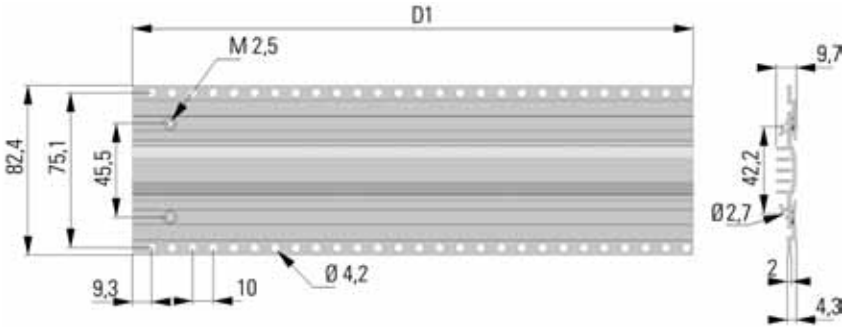
– To prevent electric spark-over from the PC board to the side plate in the 1st slot, use an isolating mat if necessary



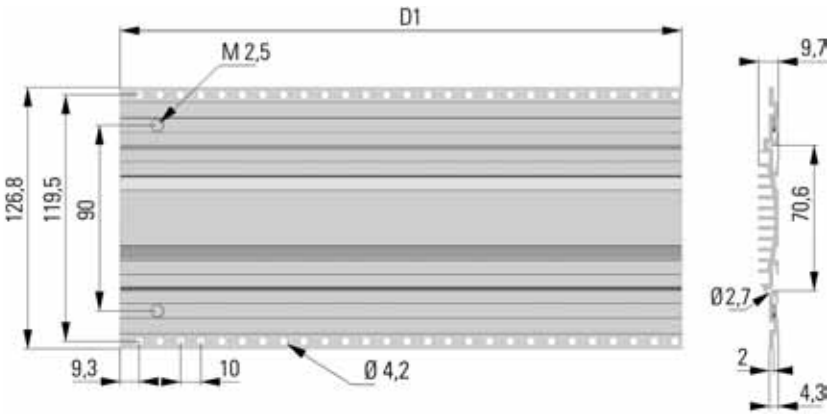
Side view

D = overall depth
D1 = usable internal dimension
D2 = mounting depth in 19" rack

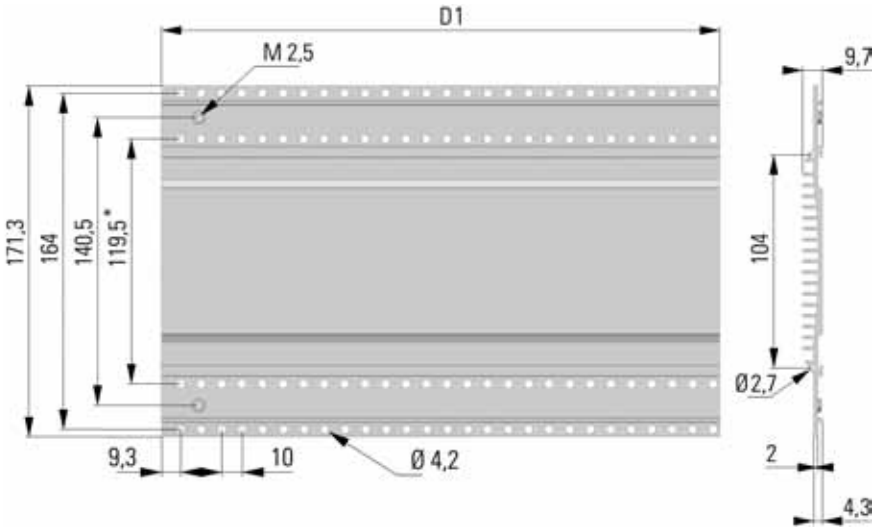
// Product information



Side extrusion 2 U

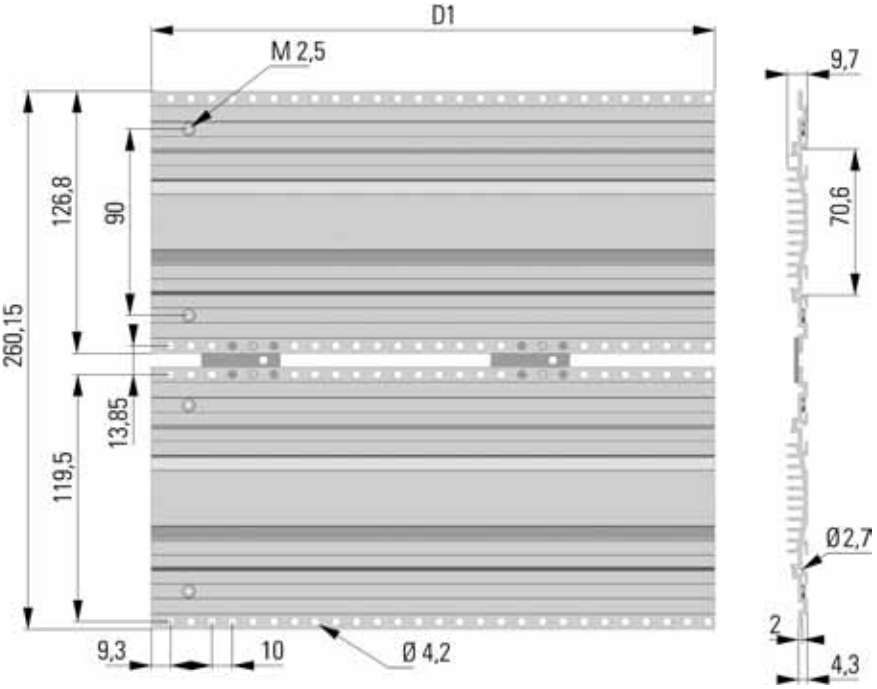


Side extrusion 3 U



Side extrusion 4 U

* (3 U)



Side extrusion 6 U (2 x 3 U)

With connecting plates

Magic

Basic units

The Magic series cases are available in two basic versions. The corner brackets and the 19" mounting brackets are not supplied as standard; these must be ordered separately.
The model with the carrying/support handle is ideal for use as a desktop case or for mobile use.
Further configurations can be made by combining different components as required

Features of the basic units

Standard
"Standard corner brackets – Magic" are not included in the scope of delivery of the basic units.

With carrying/support handle
"Standard corner brackets – Magic" are not included in the scope of delivery of the basic units.

Magic case, standard

Scope of delivery

Bottom cover	1 pc
Top cover	1 pc
Front rail	2 pcs
Side extrusion	2 pcs
Rear rail with M3 thread	2 pcs
Corner bracket	2 pcs
Plug-in foot ø12 x 3 mm	4 pcs
Assembly kit	1 pc

Delivery form

Individual components in units for self-assembly

Notes

- Corner brackets and 19" mounting brackets for assembly in 19" racks must be ordered separately
- Conversion kits (choice of B, C or E) and threaded inserts must be ordered separately
- Max. tightening torque for "rear rail with M3 thread" is 0.75 Nm

Ordering table

H	W	H in mm	W1 in mm	D = 279 mm	D = 359 mm	D = 439 mm
2 U	42 HP	88.1	235	22 10 00 01	22 10 00 04	–
2 U	84 HP	88.1	449	22 10 00 03	22 10 00 06	–
3 U	42 HP	132.5	235	22 10 00 10	22 10 00 13	–
3 U	84 HP	132.5	449	22 10 00 12	22 10 00 15	22 10 00 18
4 U	42 HP	177	235	22 10 00 19	22 10 00 22	–
4 U	84 HP	177	449	22 10 00 21	22 10 00 24	22 10 00 27
6 U	42 HP	266	235	22 10 00 28	22 10 00 31	–
6 U	84 HP	266	449	22 10 00 30	22 10 00 33	22 10 00 36

Magic case with carrying/support handle

Scope of delivery

Bottom cover	1 pc
Top cover	1 pc
Front rail	2 pcs
Side extrusion	2 pcs
Rear rail with M3 thread	2 pcs
Corner bracket	2 pcs
Carrying/support handle	1 pc
Plug-in foot ø12 x 3 mm	4 pcs
Assembly kit	1 pc

Delivery form

Individual components in units for self-assembly

Notes

- Corner brackets must be ordered separately
- Conversion kits (choice of B, C or E) and threaded inserts must be ordered separately
- Max. tightening torque for "rear rail with M3 thread" is 0.75 Nm
- Max. carrying load of the handle is 30 kg

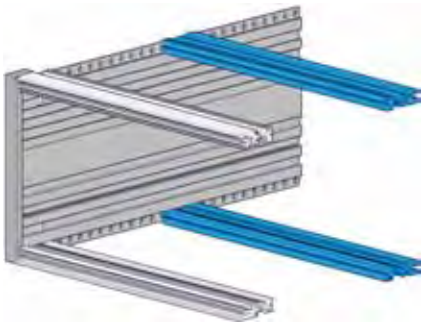
Ordering table

H	W	H in mm	W1 in mm	D = 279 mm	D = 359 mm	D = 439 mm
2 U	42 HP	88.1	235	22 10 00 50	22 10 00 53	–
2 U	84 HP	88.1	449	22 10 00 52	22 10 00 55	–
3 U	42 HP	132.5	235	22 10 00 59	22 10 00 62	–
3 U	84 HP	132.5	449	22 10 00 61	22 10 00 64	22 10 00 67
4 U	42 HP	177	235	22 10 00 68	22 10 00 71	–
4 U	84 HP	177	449	22 10 00 70	22 10 00 73	22 10 00 76
6 U	42 HP	266	235	22 10 00 77	22 10 00 80	–
6 U	84 HP	266	449	22 10 00 79	22 10 00 82	22 10 00 85

// Single components

Conversion

Front-end M4 threads are provided for mounting to side plate. Rear rails include incremented holes for the insertion of card guides.
Center rails do not have incremented holes and are used solely for mounting backplanes, either directly or indirectly, or for mounting Z-rails or perforated rails in 6 U cases.



Conversion kit, basic unit B – Magic

For indirect mounting of backplanes with isolating strips or for mounting Z-rails

Material
Aluminum extrusion, alodined

Note
– Assembly hardware contained in case assembly kit

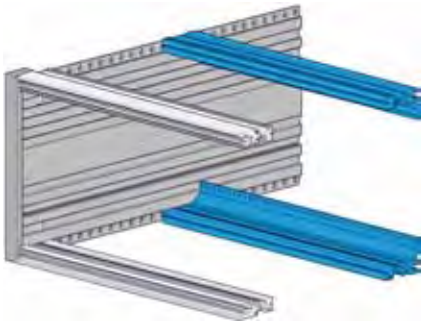
Scope of delivery

Rear rail B	2 pcs
Center rail B (6 U only)	1 pc
Side plate connection (6 U only)	2 pcs

Delivery form
In units for self-assembly

Ordering table

H	W = 42 HP	W = 84 HP
2 - 4 U	80 21 70 10	80 21 70 01
6 U	22 10 01 53	22 10 01 55



Conversion kit, basic unit C – Magic

With integrated Z-rail for connectors according to IEC 60603-2

Material
Aluminum extrusion, alodined

Note
– Assembly hardware contained in case assembly kit

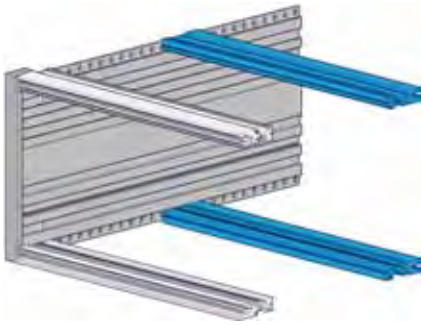
Scope of delivery

Rear rail C	2 pcs
Center rail C (6 U only)	1 pc
Side plate connection (6 U only)	2 pcs

Delivery form
In units for self-assembly

Ordering table

H	W = 42 HP	W = 84 HP
2 - 4 U	22 10 04 28	22 10 04 30
6 U	22 10 01 63	22 10 01 65



Conversion kit, basic unit E – Magic

For direct mounting of backplanes without isolating strips or for mounting perforated rails

Material
Aluminum extrusion, alodined

Note
– Assembly hardware contained in case assembly kit

Scope of delivery

Rear rail E	2 pcs
Center rail E (6 U only)	1 pc
Side plate connection (6 U only)	2 pcs

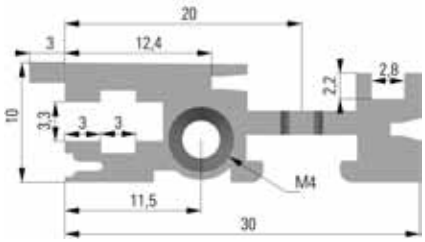
Delivery form
In units for self-assembly

Ordering table

H	W = 42 HP	W = 84 HP
2 - 4 U	80 21 70 12	80 21 70 00
6 U	22 10 01 70	22 10 01 72

Front and rear rails

Front-end M4 threads are provided for mounting to side plate.



Front rail, double-level – Magic

For conversion of Magic case 6 U (2 x 3 U) or 4 U (1 x 3 U/ 2 x 0.5 U)

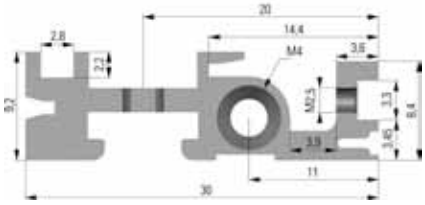
Material
Aluminum extrusion, alodined

Scope of delivery
Front rail, double-level 1 pc

Delivery form
In units for self-assembly

Ordering table

W	Alodined
42 HP	22 10 02 21
84 HP	22 10 02 25



Rear rail, dual, with M2.5 thread – Magic

For rear mounting of plug-in units
Is used in place of the rear rail with thread

Material
Aluminum extrusion, alodined

Scope of delivery
Rear rail, dual 1 pc

Delivery form
In units for self-assembly

Note
– Threaded insert not required

Ordering table

W	Alodined
42 HP	22 10 02 01
84 HP	22 10 02 05

// Single components

Corner brackets

Standard corner bracket – Magic

For front trimming of case

Material
Die-cast aluminum, powder-coated in RAL 7001 (silver gray), contact points uncoated

Scope of delivery
Corner bracket, standard 1 pc

Delivery form
In units for self-assembly

Note
– Assembly hardware contained in Magic assembly kit

Ordering table

H	Powder-coated
2 U	22 10 01 00
3 U	22 10 01 01
4 U	22 10 01 02
6 U	22 10 01 03

Corner bracket with handle – Magic

For front trimming of case

Material
Die-cast aluminum, powder-coated in RAL 7001 (silver gray), contact points uncoated

Scope of delivery
Corner bracket with handle 1 pc

Delivery form
In units for self-assembly

Note
– Assembly hardware contained in Magic assembly kit

Ordering table

H	Powder-coated
2 U	22 10 01 04
3 U	22 10 01 05
4 U	22 10 01 06
6 U	22 10 01 07

19" mounting bracket

19" mounting bracket – Magic

Enables mounting in 19" racks

Material
Die-cast aluminum, powder-coated in RAL 7001 (silver gray), contact points uncoated

Scope of delivery
19" mounting bracket 1 pc

Delivery form
In units for self-assembly

Note
– Assembly hardware contained in Magic assembly kit

Ordering table

H	H1 in mm	Powder-coated
2 U	76.20	**22 10 01 08**
3 U	57.15	**22 10 01 09**
4 U	101.60	**22 10 01 10**
6 U	190.50	**22 10 01 11**

19" mounting bracket with handle – Magic

Enables mounting in 19" racks

Material
Die-cast aluminum, powder-coated in RAL 7001 (silver gray), contact points uncoated

Scope of delivery
19" mounting bracket with handle 1 pc

Delivery form
In units for self-assembly

Note
– Assembly hardware contained in Magic assembly kit

Ordering table

H	H1 in mm	Powder-coated
2 U	76.20	**22 10 01 12**
3 U	57.15	**22 10 01 13**
4 U	101.60	**22 10 01 14**
6 U	190.50	**22 10 01 15**

Magic

// Single components

Front/rear panels, EMC, rear panel

Front/rear panels – Magic

With grooves for mounting EMC springs

Material
Aluminum 2.5 mm, alodined

Scope of delivery
Front/rear panel 1 pc

Delivery form
In units for self-assembly

Note
– Shielding material and assembly kit must be ordered separately

Ordering table

H	H1 in mm	W = 42 HP	W = 84 HP
2 U	40.1	22 10 03 00	22 10 03 02
3 U	129.0	22 10 03 03	22 10 03 05
4 U	173.4	22 10 03 06	22 10 03 08
6 U	262.3	22 10 03 09	22 10 03 11

Assembly kit for EMC rear panels – Magic

For rear mounting of standard front panels and EMC rear panels
Maximum tightening torque 0.75 Nm

Material
Plastic sleeve PA 6 gray
Pan head screw M3: Brass, nickel-plated

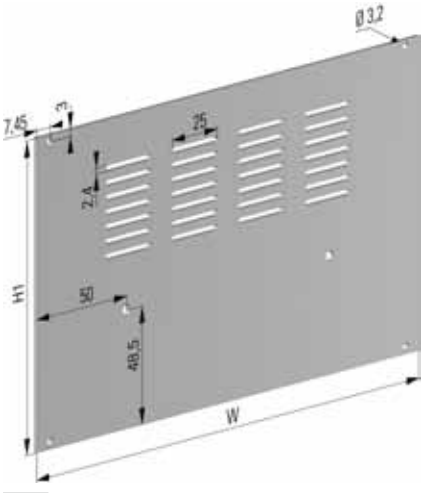
Scope of delivery
Plastic sleeve 8 pcs
Pan head screw M3, captive 8 pcs

Delivery form
Packed as kit

Note
– Can only be used for rear rail with M3 thread

Ordering table

	Order no.
Assembly kit	22 10 03 20



Rear panel – Magic

With ventilation slits for better heat dissipation

Material
Aluminum 1.5 mm, clear anodized/cutting edges raw

Scope of delivery
Rear panel 1 pc

Delivery form
In units for self-assembly

Note
– Assembly hardware contained in Magic assembly kit

Ordering table

H	H1 in mm	W = 42 HP	W = 84 HP
2 U	84.1	22 10 02 40	22 10 02 42
3 U	128.5	22 10 02 43	22 10 02 45
4 U	173.0	22 10 02 46	22 10 02 48
6 U	261.9	22 10 02 49	22 10 02 51

Carrying/support handle, corner bracket

Carrying/support handle – Magic

For mobile use, for mounting on "Magic standard cases", cannot be added later.

Material
Side legs PA 6, RAL 9005 (deep black)
Handle bar, aluminum, anodized

Scope of delivery

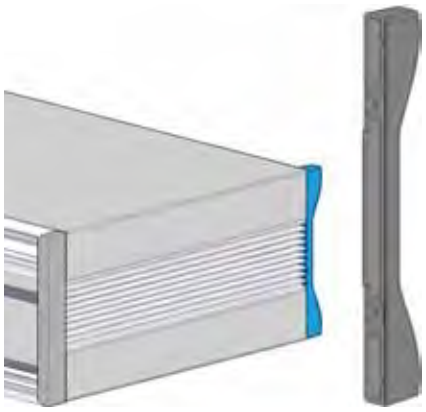
Handle side legs	2 pcs
Handle bar	1 pc
Assembly kit	1 pc

Delivery form
As kit for self-assembly

Notes
– Max. load 30 kg
– Adjustable in steps of 30°

Ordering table

H	W = 42 HP	W = 84 HP
2 U	22 10 03 80	22 10 03 82
3 U, 4 U, 6 U	22 10 03 83	22 10 03 85



Corner bracket – Magic

For rear trimming of case

Material
Plastic PA

Scope of delivery

Corner bracket	1 pc

Delivery form
In units for self-assembly

Ordering table

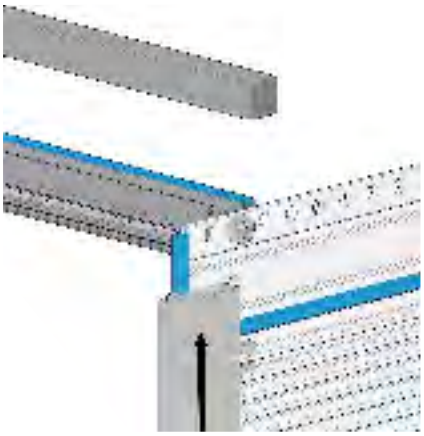
H	H in mm	RAL 7001	Black
2 U	88.1	22 10 04 40	22 10 04 45
3 U	132.5	22 10 04 41	22 10 04 46
4 U	177.0	22 10 04 42	22 10 04 47
6 U	266.0	22 10 04 43	22 10 04 48

// Single components

EMC shielding material

To ensure that electronic products function satisfactorily in an electromagnetic environment i. e. that the electromagnetic compatibility (EMC) of the products is guaranteed, shielding material is required, dependent on the electronics and on the ambient conditions.

EMC shielding materials are used to establish contact with mechanical components and thus protect plug-in units and electronics against radio frequency interference.



EMC fabric shielding material – Magic

The 3 x 3 mm EMC shielding material is used to establish contact between
– Side extrusion and top/bottom cover
– Front/rear rail and top/bottom cover
– Corner bracket/19" mounting bracket and side extrusion

Material
Conductive fabric, 3 x 3 mm, CuNi coated

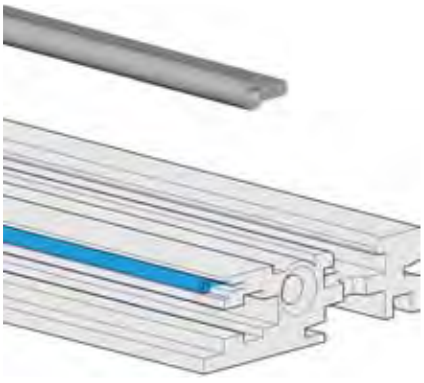
Scope of delivery
By length (L = 2500 mm) 1 pc

Delivery form
In units for self-assembly

Notes
– Single sided adhesive (peel-off film)
– Thermal resistance: -40°C to +200°C
– Fire resistance rating: UL 94V0

Ordering table

Order no.
22 10 04 10



EMC shielding material for vertical front mount – Magic

The EMC shielding material is used to establish contact between
– Front rail and front panels

Material
Silicone with silver-coated particles, 55 Shore

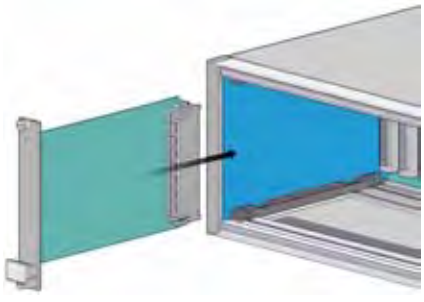
Scope of delivery
By length (L = 1000 mm) 1 pc

Delivery form
In units for self-assembly

Note
– Thermal resistance: -55°C to +160°C

Ordering table

Order no.
22 10 04 15



Isolating mat – Magic

For prevention of electric sparkover to the side plates in compliance with VDE 340 Part 3
– Side extrusion and PCB, solder side

Material
Polyester mat 0.12 mm
240 x 111.5 mm

Scope of delivery
Isolating mat 1 pc

Delivery form
In units for self-assembly

Notes
– Single sided adhesive (peel-off film)
– 2 ea. are required for 6 U

Ordering table

H	Order no.
2 - 6 U	22 10 04 21

Magic

19" rackmount/desktop case with front panel

Space
19" rackmout/desktop case

Space

Product information

The Space Series cases are typically used for configuration with custom electronics and accessories. Conversion kits are available for horizontal PCB mount of plug-in modules in single or double Eurocard format .
Depending on the choice of front panel, the cases can be used as desktop or 19" rackmount cases. Use of front panel "Type B"" in conjunction with 19" mounting brackets also enables recessed mounting in 19" racks.
The cases are suitable for use under EMC criteria and can be upgraded as required with additional shielding material.

Standards

– Mounting dimensions in accordance with IEC 60297-2
– IP rating in accordance with IEC 60529
IP20 when perforated top covers are used,
IP40 when non-perforated top/bottom covers are used

Note

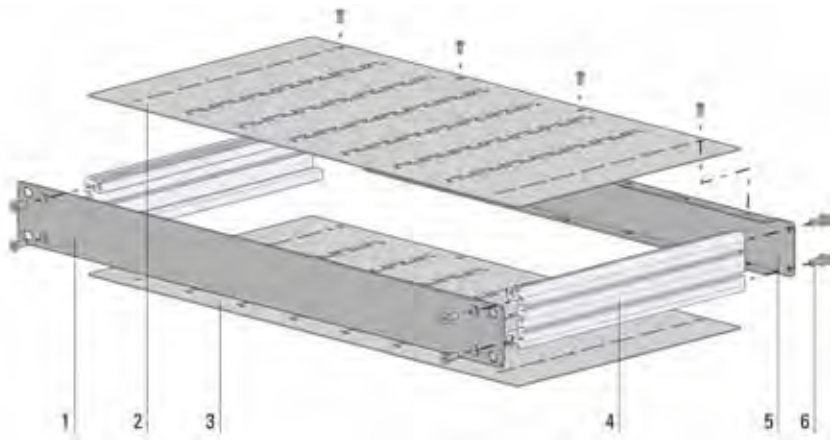
– No grounding tabs, but these can be mounted individually

Overview

Basic units	H in U			W in HP	D in mm			Page
	1	2	3	84	224	284	344	
- Type A	●	●	●	●	●	●	●	CAS 01.45
- Type B	●	●	●	●	●	●	●	CAS 01.45

Space

// Product information

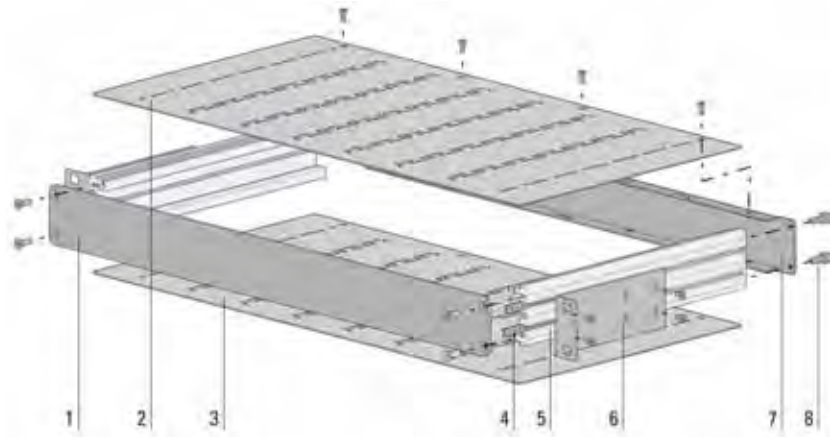


Configuration examples

The diagram shows the configuration of a 19" Space Series type A rackmount case

1 Front panel
2 Top/bottom cover* perforated (option of non-perforated)
3 Top/bottom cover* perforated (option of non-perforated or chassis plate)
4 Side extrusion
5 Rear panel
6 Assembly hardware

Parts marked with * are not included in the scope of delivery of the basic unit, i. e. must be ordered separately.



The diagram shows the configuration of a 19" Space Series type B rackmount case

1 Front panel
2 Top/bottom cover* perforated (option of non-perforated)
3 Top/bottom cover* perforated (option of non-perforated or chassis plate)
4 Threaded inserts*
5 Side extrusion
6 19"mounting bracket
7 Rear panel*
8 Assembly hardware

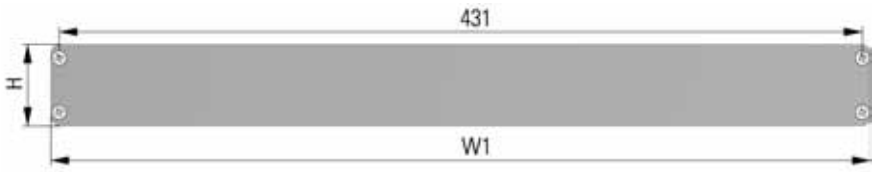
Parts marked with * are not included in the scope of delivery of the basic unit, i. e. must be ordered separately.

Surface finishing

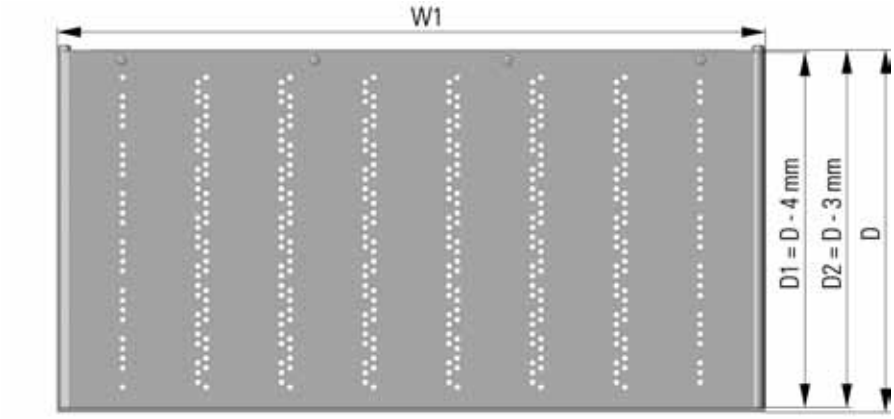
– Alodined
– Front panel: front anodized/rear alodined

Dimension diagrams

Front view, type A



Front view, type B



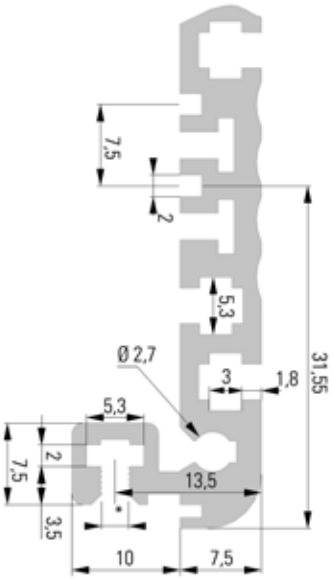
Top view (type A and B)

D = overall depth
D1 = usable internal dimension
D2 = mounting depth in 19" rack when 19" mounting brackets are used (optional)

Side view with top/bottom cover

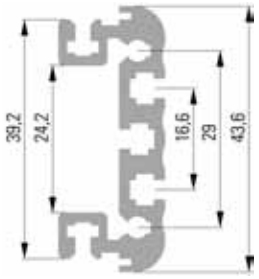
Space

// Product information

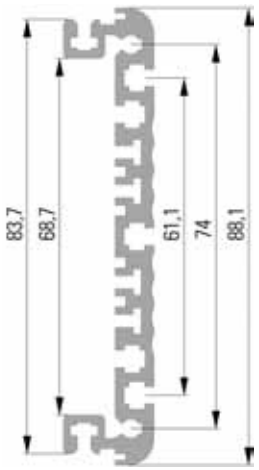


Side extrusions 1 U, 2 U, 3 U

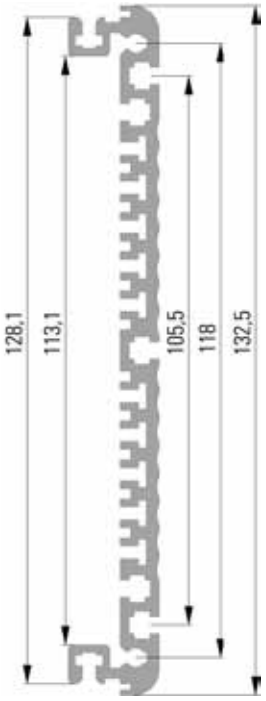
* M3 thread
(Maximum tightening torque 0.75 Nm)



Side extrusion 1 U



Side extrusion 2 U



Side extrusion 3 U

Space

// Basic units

Basic units

With the Space Series you have a choice between two basic units. "Type A" cases are used as 19" Rackmount cases, "Type B" cases are used as desktop cases.

Features of the basic units

Type A with 19" front panel

Type B

Type B with 19" mounting brackets (optional)

Appropriate positioning of the 19" mounting brackets enables recessed mounting to a depth of up to 60 mm.

Space case, type A

Scope of delivery

Side extrusion	2 pcs
19" front panel	1 pc
Rear panel	1 pc
Assembly kit	1 pc

Delivery form

Individual components in units for self-assembly

Notes

– Top/bottom covers or chassis plates must be ordered separately
– Conversion kits (choice of B, C or E) and threaded inserts must be ordered separately

Ordering table

H	W	H in mm	W1 in mm	D = 224 mm	D = 284 mm	D = 344 mm
1 U	84 HP	43.6	440	**22 30 00 20**	**22 30 00 23**	**22 30 00 26**
2 U	84 HP	88.1	440	**22 30 00 21**	**22 30 00 24**	**22 30 00 27**
3 U	84 HP	132.5	440	**22 30 00 22**	**22 30 00 25**	**22 30 00 28**

Space case, type B

Scope of delivery

Side extrusion	2 pcs
Front panel	1 pc
Rear panel	1 pc
Assembly kit	1 pc

Delivery form

Individual components in units for self-assembly

Notes

– 19" mounting brackets and top/bottom covers or chassis plates must be ordered separately
– Conversion kits (choice of B, C or E) and threaded inserts must be ordered separately

Ordering table

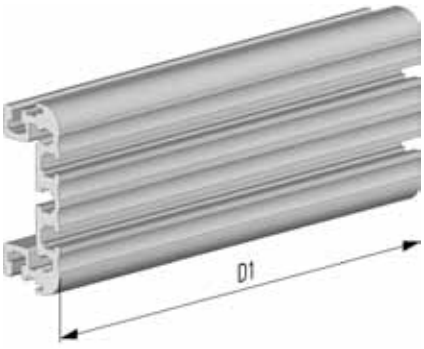
H	W	H in mm	W1 in mm	D = 224 mm	D = 284 mm	D = 344 mm
1 U	84 HP	43.6	440	**22 30 00 01**	**22 30 00 04**	**22 30 00 07**
2 U	84 HP	88.1	440	**22 30 00 02**	**22 30 00 05**	**22 30 00 08**
3 U	84 HP	132.5	440	**22 30 00 03**	**22 30 00 06**	**22 30 00 09**

Space

// Single components

Side extrusions

For mounting front panel, rear panel and top and bottom covers



Side extrusions – Space

Material
Aluminum extrusion, alodined

D1 = D - 4 mm

Scope of delivery
Side extrusion 1 pc

Delivery form
In units for self-assembly

Ordering table

H	H in mm	D = 224 mm	D = 284 mm	D = 344 mm
1 U	43.6	22 30 01 30	22 30 01 35	22 30 01 40
2 U	88.1	22 30 01 31	22 30 01 36	22 30 01 41
3 U	132.5	22 30 01 32	22 30 01 37	22 30 01 42

19" Front panels, rear panels

19" Front panel type A – Space

With grooves for mounting top/bottom covers

Material
Aluminum 3 mm, front anodized/rear alodined

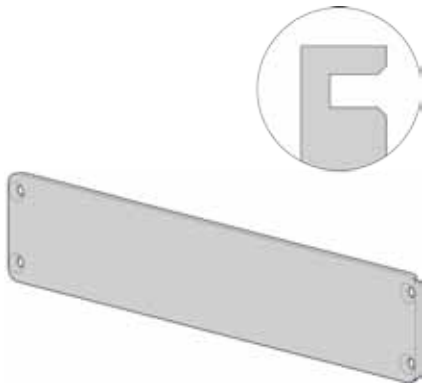
Scope of delivery
19" Front panel Space type A 1 pc

Delivery form
In units for self-assembly

Note
– Assembly hardware contained in Space assembly kit

Ordering table

H	H in mm	W = 84 HP
1 U	43.6	**22 30 01 50**
2 U	88.1	**22 30 01 51**
3 U	132.5	**22 30 01 52**



Front panel type B – Space

With grooves for mounting top/bottom covers

Material
Aluminum 3 mm, front anodized/rear alodined

Scope of delivery
Front panel Space type B 1 pc

Delivery form
In units for self-assembly

Note
– Assembly hardware contained in Space assembly kit

Ordering table

H	H in mm	W = 84 HP
1 U	43.6	**22 30 01 55**
2 U	88.1	**22 30 01 56**
3 U	132.5	**22 30 01 57**

Rear panel – Space

With EMC plates for making contact with top and bottom covers

Material
Aluminum 1.5 mm, alodined

Scope of delivery
Rear panel 1 pc

Delivery form
In units for self-assembly

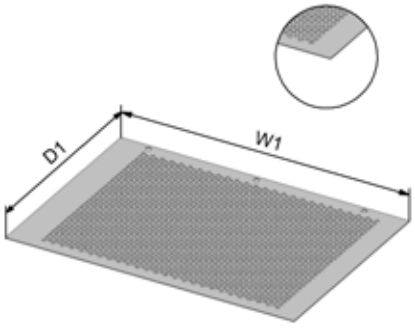
Note
– Assembly hardware contained in Space assembly kit

Ordering table

H	H in mm	W = 84 HP
1 U	43.6	**22 30 01 60**
2 U	88.1	**22 30 01 61**
3 U	132.5	**22 30 01 62**

// Single components

Top/bottom covers, chassis plate



Top/bottom cover, perforated – Space

For covering and shielding

Material
Aluminum 1 mm, alodined
Perforation Rv4-6, airflow 38.5 %

W1 = W + 1.9 mm
D1 = D - 3 mm

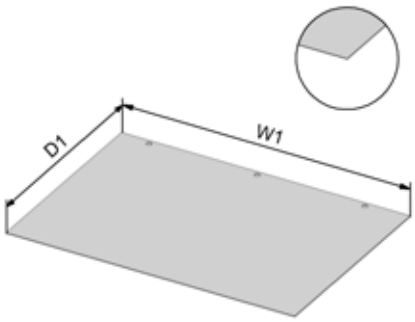
Scope of delivery
Top/bottom cover, perforated 1 pc

Delivery form
Individual components in units for self-assembly

Notes
– Assembly hardware kis contained in the Space assembly kit
– Can be used for top and bottom

Ordering table

W	D = 224 mm	D = 284 mm	D = 344 mm
84 HP	22 30 00 50	22 30 00 51	22 30 00 52



Top/bottom cover, non-perforated – Space

For covering and shielding

Material
Aluminum 1 mm, alodined

W1 = W + 1.9 mm
D1 = D - 3 mm

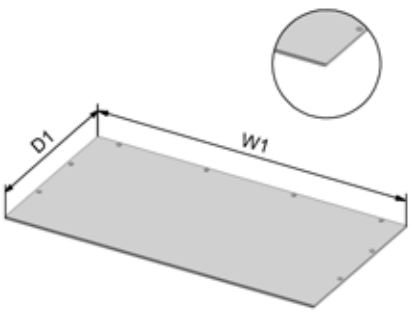
Scope of delivery
Top/bottom cover, perforated 1 pc

Delivery form
Individual components in units for self-assembly

Notes
– Assembly hardware kis contained in the Space assembly kit
– Can be used for top and bottom

Ordering table

W	D = 224 mm	D = 284 mm	D = 344 mm
84 HP	22 30 00 60	22 30 00 61	22 30 00 62



Chassis plate, heavy-duty – Space

For mounting custom components

Material
Aluminum 2 mm, alodined

W1 = W + 1.9 mm
D1 = D - 3 mm

Scope of delivery
Chassis plate 1 pc

Delivery form
Individual components in units for self-assembly

Notes
– Assembly hardware kis contained in the Space assembly kit
– Can be used as alternative to bottom cover

Ordering table

W	D = 224 mm	D = 284 mm	D = 344 mm
84 HP	22 30 00 70	22 30 00 71	22 30 00 72

19" Mounting bracket

19" Mounting bracket – Space

For mounting to Space type B cases for assembly in 19" racks.

Material
Aluminum 2 mm, alodined

Scope of delivery

19" mounting bracket	2 pcs
Threaded inserts M3, 20 HP	4 pcs
Assembly kit	1 pc

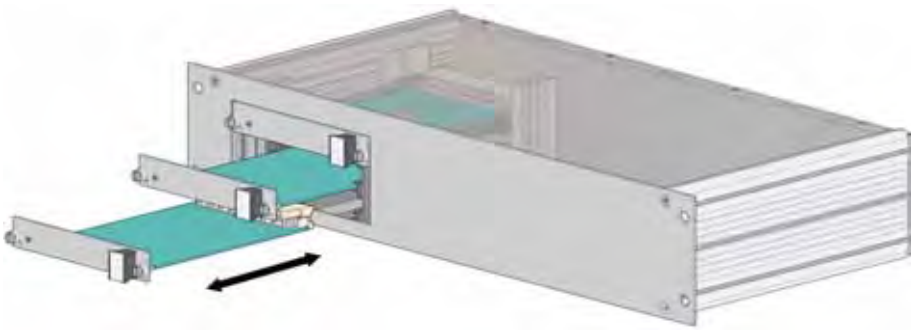
Delivery form
In units for self-assembly

Note
– Can be used for recessed mounting (up to 60 mm)

Ordering table

H	H1 in mm	H2 in mm	Alodined
1 U	76.20	16.6	**22 30 00 40**
2 U	57.15	61.1	**22 30 00 41**
3 U	101.60	105.5	**22 30 00 42**

// Single components

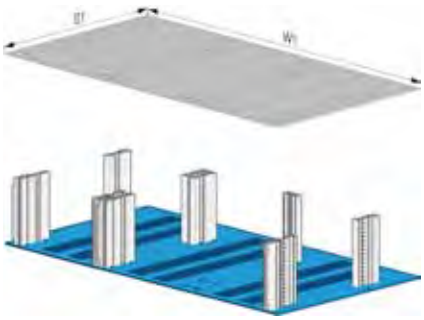


Horizontal PCB mount

Product information
For horizontal PCB mount of single and/or double Eurocards in 1 U and 2 U Space Series cases.

Standards
Mounting dimensions in accordance wtih IEC 60297-3-101

Note
– Front panels for horizontal PCB mount on request



Chassis plate for horizontal PCB mount – Space

Chassis plates are used to assemble the conversion kits required for horizontal PCB mount. They replace the bottom covers.

Material
Aluminum 2 mm, alodined

W1 = W + 1.9 mm

D1 = D + 2 mm

Scope of delivery
Chassis plate 1 pc

Delivery form
Individual components in units for self-assembly

Notes
– Additional screw connection using threaded inserts M3 (on request)
– Assembly hardware for chassis plate mounting is included in the Space assembly kit

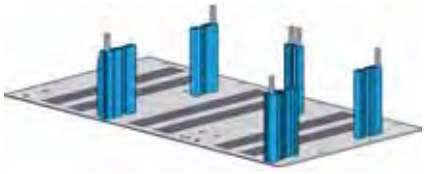
Ordering table

W	D = 224 mm	D = 284 mm	D = 344 mm
84 HP	22 30 00 80	22 30 00 81	22 30 00 82

Conversion kits for horizontal PCB mount

Conversion kits enable mounting of plug-in units. Extruded channels are provided for self-forming M4 screws for mounting on the bottom cover. Front and rear rails include incremented holes for the insertion of card guides.

Center rails do not have incremented holes and are used solely for mounting backplanes, either directly or indirectly, or for mounting Z-rails.



Conversion kit, basic unit B – Space

For indirect mounting of backplanes with isolating strips

Material
Aluminum extrusion, alodined

Note
– Isolating strips on request
– Scope of delivery for plug-in unit 6 U

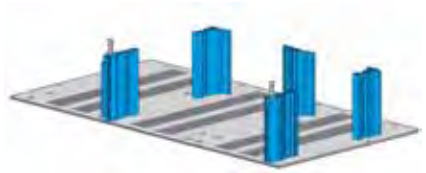
Scope of delivery

Front rail	2 pcs
Rear rail B	2 pcs
Center rail B	1 pc
Threaded inserts	6 pcs
Assembly kit	1 pc

Delivery form
In units for self-assembly

Ordering table

H	W = 84 HP
1 U	22 30 00 90
2 U	22 30 00 91



Conversion kit, basic unit C – Space

With Z-rail for connectors according to IEC 60603-2

Material
Aluminum extrusion, alodined

Note
– Scope of delivery for plug-in unit 6 U

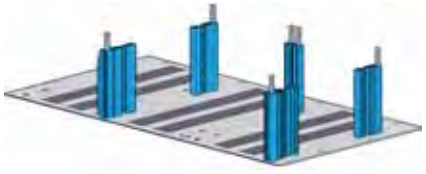
Scope of delivery

Front rail	2 pcs
Rear rail C	2 pcs
Center rail B	1 pc
Z-rail	2 pcs
Threaded inserts	2 pcs
Assembly kit	1 pc

Delivery form
In units for self-assembly

Ordering table

H	W = 84 HP
1 U	22 30 01 00
2 U	22 30 01 01



Conversion kit, basic unit E – Space

For direct mounting of backplanes without isolating strips

Material
Aluminum extrusion, alodined

Note
– Scope of delivery for plug-in unit 6 U

Scope of delivery

Front rail	2 pcs
Rear rail E	2 pcs
Center rail E	1 pc
Threaded inserts	6 pcs
Assembly kit	1 pc

Delivery form
In units for self-assembly

Ordering table

H	W = 84 HP
1 U	22 30 01 10
2 U	22 30 01 11

// Single components

EMC shielding material – Space

To ensure that electronic products function satisfactorily in an electromagnetic environment i. e. that the electromagnetic compatibility (EMC) of the products is guaranteed, shielding material is required, dependent on the electronics and on the ambient conditions.
EMC shielding materials are used to establish contact with mechanical components and thus protect plug-in units and electronics against radio frequency interference.

EMC fabric shielding material – Space

The EMC shielding material D is used to establish contact between
– Top/bottom covers or base/chassis plate and side extrusion

Material
Conductive fabric, 1.5 x 2 mm, CuNi coated

Scope of delivery
by length (L = 2500 mm) 1 pc

Delivery form
In units for self-assembly

Notes
– Single sided adhesive (peel-off film)
– Thermal resistance: -40°C to +100°C
– Fire resistance rating: UL 94V0

Ordering table

Order no.
22 30 01 20

Assembly kit – Space

The assembly kit is required for customized configuration of Space cases.

Note

– The assembly kit is supplied with every Space basic unit
– Individual components cannot be ordered separately

Scope of delivery

Usage	Description	Version/material	Standard	Quantity
Mounting top/bottom covers to rear panel	Cross-recessed countersunk head screw	M3 x 6 mm Steel blue zinc-plated	DIN 7500	8 pcs
Mounting the chassis plate to side extrusion	Cross-recessed countersunk head screw	M3 x 6 mm Steel nickel-plated	DIN 965	16 pcs
Mounting front panel to side extrusion	Cross-recessed countersunk head screw	M4 x 12 mm Steel blue zinc-plated	DIN 7500	4 pcs
Mounting rear panel to side extrusion	Cross-recessed pan head screw	M4 x 12 mm Steel blue zinc-plated	DIN 7500	4 pcs

Ordering table

Order no.
22 30 01 65

Accessories
Various card guides and handles

ACCESSORIES

// Content

ACCESSORIES

//Threaded inserts

Threaded inserts

Enable mounting of plug-in units or backplanes
on horizontal rails

Threaded inserts

Material
Steel 5 x 2 mm, white zinc-plated

Scope of delivery
Threaded inserts 1 PU (10 pcs)

Delivery form
In units for self-assembly

Note
– Option of M2.5 or M3 thread

Ordering table

W	M2.5 thread	M3 thread
20 HP	79 32 18 00	79 33 18 00
42 HP	79 32 14 00	79 33 14 00
63 HP	79 32 16 00	79 33 16 00
84 HP	79 32 17 00	79 33 17 00

Card guides

For mounting Eurocards in the card cage of the case. They are clipped into the incremented holes of the rails and are also used for positioning.

Notes

– Slot width 2 mm for PCB thickness of 1.6 mm
  NEW: Slot width 2.4 mm for PCB thickness of 2.0 mm
– Fire resistance rating
  ABS: UL 94 V0
  PC: NF F 16-101/102 class F1, I2
  PBT: UL 94 V0
  PPO: UL 94 V0
– The 3-piece card guide accepts PCBs of all depths.

Overview

Board depth	Slot width	Version	Material	Color	FreeTEC	Magic	Space	Order no.	Page
EC 100 mm	2.0 mm	Standard	PPO	Black		●		**79 31 40 00**	CAS 01.63
EC 160 mm	2.0 mm	Standard	PPO	Black	●		●	**23 10 04 29**	CAS 01.62
	2.0 mm	Standard	PPO	Gray	●		●	**23 10 04 34**	CAS 01.62
	2.0 mm	Standard	PPO	Black		●		**79 31 00 00**	CAS 01.63
	2.0 mm	Heavy-duty version	PPO	Black	●		●	**23 10 04 02**	CAS 01.62
	2.0 mm	Heavy-duty version	PPO	Black		●		**79 31 04 00**	CAS 01.63
	2.0 mm	Heavy-duty version	PC	Gray	●****		●****	**23 10 04 04**	CAS 01.62
NEW	2.4 mm	Heavy-duty version	PPO	Black	●		●	**23 10 04 43**	CAS 01.62
	2.0 mm	1/2 HP/IEEE	PBT	Green				**23 10 04 38**	CAS 01.63
		Card grid, 7-piece							
	2.0 mm	Standard	PPO	Black		●		**79 31 91 00**	CAS 01.64
		4.4" **							
	2.0 mm	Standard	PPO	Black	●			**79 31 05 00**	CAS 01.63
	2.0 mm	Standard	PPO	Black		●		**79 31 03 00**	CAS 01.63
EC 220 mm	2.0 mm	Heavy-duty version	PPO	Black	●		●	**23 10 04 03**	CAS 01.62
	2.0 mm	Heavy-duty version	PPO	Black		●		**79 31 12 00**	CAS 01.63
	2.0 mm	Heavy-duty version	PC	Gray	●****		●****	**23 10 04 05**	CAS 01.62
	2.0 mm	Heavy-duty version	AL	Clear	●		●	**23 10 04 40**	CAS 01.62
		4.4" **							
	2.0 mm	Standard	PPO	Black	●			**79 31 06 00**	CAS 01.63
EC 280 mm	2.0 mm	Heavy-duty version	PPO	Black	●			**23 10 04 37**	CAS 01.62
	2.0 mm	Heavy-duty version	AL	Clear	●			**23 10 04 41**	CAS 01.62
EC variable		Card guide, 3-piece							
	2.0 mm	End pieces (1 pair)	PPO	Black	●	●	●	**79 31 62 00**	CAS 01.64
	2.0 mm	Extrusion (l = 2750 mm)***	AL	Clear	●	●	●	**90 16 00 00**	CAS 01.64
	2.0 mm	Extrusion (l = 2750 mm)***	ABS	Black	●	●	●	**90 42 40 01**	CAS 01.64

** For board formats 111.7 mm x 160 mm and 111.7 mm x 220 mm
*** Extrusion length adjusted to PCB depth (for Magic Series = EC - 49 mm; for FreeTEC, Space Series = EC - 58 mm) on request
**** Required for French SNCF railway applications

ACCESSORIES

// Card guides

Card guide – FreeTEC/Space

Material
PPO or PC

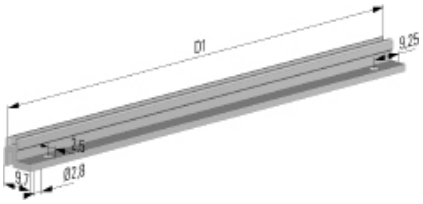
Scope of delivery
Card guide 1 PU (50 pcs)

Delivery form
In units for self-assembly

Notes
– Can in addition be screwed into place
– Possible to include ESD springs

Ordering table

Board depth	Slot width	Material	Color	Standard	Heavy-duty version
160 mm	2.0 mm	PPO	Black	**23 10 04 29**	**23 10 04 02**
160 mm	2.0 mm	PPO	Gray	**23 10 04 34**	–
160 mm	2.4 mm	PPO	Black	–	**23 10 04 43**
220 mm	2.0 mm	PPO	Black	–	**23 10 04 03**
160 mm	2.0 mm	PC	Gray	–	**23 10 04 04**
220 mm	2.0 mm	PC	Gray	–	**23 10 04 05**



Card guide Al-extrusion – FreeTEC/Space

Material
Aluminum extrusion, raw

Scope of delivery
Card guide extrusion 1 PU (50 pcs)

Delivery form
In units for self-assembly

Note
– Can only be screwed into place

Ordering table

Board depth	Slot width	D1	Standard	Heavy-duty version
220 mm	2.0 mm	202 mm	–	**23 10 04 40**
280 mm	2.0 mm	262 mm	–	**23 10 04 41**

Card guide Eurocard 280 mm – FreeTEC

Material
PPO

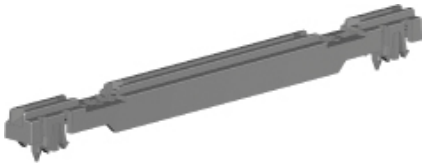
Scope of delivery
Card guide 1 PU (50 pcs)

Delivery form
In units for self-assembly

Note
– Can only be clipped into place

Ordering table

Board depth	Slot width	Color	Standard	Heavy-duty version
280 mm	2.0 mm	Black	–	**23 10 04 37**



Card guide 1/2 HP/IEEE – FreeTEC

With 1/2 HP lateral offset for applications according to IEEE 1101.1/IEEE 1101.10
For mounting CompactPCI power supplies and SMD assembled plug-in units

Material
PBT

Scope of delivery
Card guide 1 PU (50 pcs)

Delivery form
In units for self-assembly

Notes
– Can in addition be screwed into place
– Possible to include ESD springs

Ordering table

Board depth	Slot width	Color	Standard	Heavy-duty version
160 mm	2.0 mm	Green	**23 10 04 38**	–

Card guide 4.4" – FreeTEC/Magic

For card height 4.4" (111.7 mm)

Material
PPO

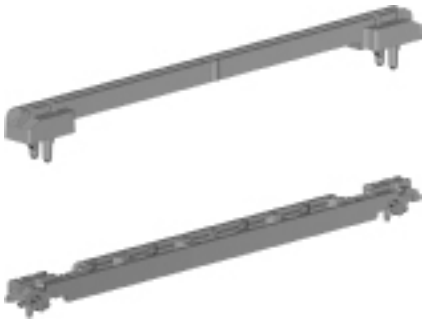
Scope of delivery
Card guide 1 PU (50 pcs)

Delivery form
In units for self-assembly

Note
– Can only be clicked into place

Ordering table

Board depth	Slot width	Series	Color	Standard	Heavy-duty version
160 mm	2.0 mm	FreeTEC	Black	**79 31 05 00**	–
220 mm	2.0 mm	FreeTEC	Black	**79 31 06 00**	–
160 mm	2.0 mm	Magic	Black	**79 31 03 00**	–



Card guide – Magic

Material
PPO

Scope of delivery
Card guide 1 PU (50 pcs)

Delivery form
In units for self-assembly

Notes
– Heavy-duty version screwed into place
– Inclusion of ESD springs only possible with heavy-duty version

Ordering table

Board depth	Slot width	Color	Standard	Heavy-duty version
100 mm	2.0 mm	Black	**79 31 40 00**	–
160 mm	2.0 mm	Black	**79 31 00 00**	**79 31 04 00**
220 mm	2.0 mm	Black	–	**79 31 12 00**

ACCESSORIES

// Card guides

Card grid – Magic

Card grid, 7-piece, in 4 HP increments

Material
PPO

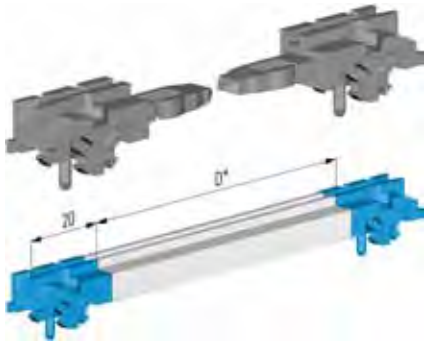
Scope of delivery
Card grid 1 PU (25 pcs)

Delivery form
In units for self-assembly

Note
– Can only be clipped into place

Ordering table

Board depth	Slot width	Color	Standard	Heavy-duty version
160 mm	2.0 mm	Black	**79 31 91 00**	–



Card guide, 3-piece – FreeTEC/Magic/Space

Card guide, 3-piece, for customized board depth

Material
See ordering table

Scope of delivery
See ordering table

Delivery form
In units for self-assembly

Notes
– End pieces can in addition be screwed into place
– ESD springs cannot be used

Ordering table

Version	Slot width	Material	Color	Scope of delivery	Order no.
End pieces (pair)	2.0 mm	PPO	Black	1 PU (50 pairs)	**79 31 62 00**
Card guide extrusion	2.0 mm	Aluminum	Anodized	2750 mm	**90 16 00 00**
Card guide extrusion	2.0 mm	ABS	Black	2750 mm	**90 42 40 01**

Extrusion length D* adjusted to PCB depth (for Magic Series = EC - 49 mm) on request
Extrusion length D* adjusted to PCB depth (for FreeTEC/Space Series = EC - 58 mm) on request

Board retainers

Board retainers are used to secure the boards in the case, typically in applications without front panels.

Note
– Fire resistance rating
PC: NF F 16-101/102 class F1, I2
PPO: UL 94 V0

Board retainer – FreeTEC/Magic/Space

Used singly

Material
See ordering table

Scope of delivery
Board retainer 1 PU (50 pcs)

Delivery form
In units for self-assembly

Note
– The use of PC is required for French railway (SNCF) applications

Ordering table

Series	Color	Material	Order no.
Magic	Black	PPO	**79 31 53 00**
FreeTEC/Space	Black	PPO	**79 31 70 00**
FreeTEC/Space	Gray	PC	**79 31 70 01**

Board extractor

Used singly

Material
PC

Scope of Delivery
Board extractor 1 pc
Cylindrical pin 1 pc

Delivery Form
In units for self assembly

Notes
– Mounting either bottom or top board extractor
– Board extractor and board retainers can be used in combination

Ordering table

Order no.
79 31 51 00

ACCESSORIES

// Isolating strips, mounting clips for isolating strips

Isolating strips

Enable isolated mounting of the backplane on rear rail B and establish standard insertion depth. Mounting clips secure the isolating strip.

Isolating strips

Material
ABS

Scope of delivery
Isolating strips 1 PU (10 pcs)

Delivery form
In units for self-assembly

Note
– Fire resistance rating UL 94 V0

Ordering table

W	Color	Order no.
20 HP	Gray	**79 38 04 00**
42 HP	Gray	**79 38 01 00**
63 HP	Gray	**79 38 03 00**
84 HP	Gray	**79 38 02 00**

Mounting clips for isolating strips

For positioning and securing isolating strips to threaded inserts

Material
ABS

Scope of delivery
Mounting clips 1 PU (100 pcs)

Delivery form
In units for self-assembly

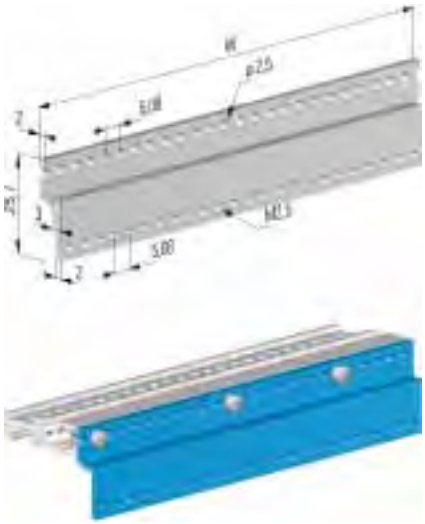
Note
– Fire resistance rating UL 94 V0

Ordering table

Color	Order no.
Gray	**79 51 50 00**

Z-rails

Enable mounting of IEC 60603-2 or IEC 60603-1 connectors on rear rail B.



Z-rails for Basic Unit B – IEC 60603-1

Material
Aluminum extrusion, choice of anodized/cutting edges raw or alodined

Scope of delivery

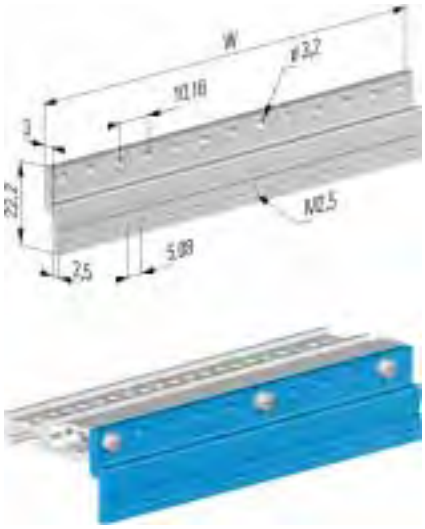
Z-rail	1 PU (10 pcs)
Assembly kit M3	1 PU (10 pcs)

Delivery form
In units for self-assembly

Notes
– Assembly also possible using threaded inserts M2.5/M3
– Screws DIN 7985 M2.5 x 8 mm must be ordered separately

Ordering table

W	Length in mm	Anodized	Alodined
20 HP	104.7	90 41 11 63	–
42 HP	216.5	90 41 11 53	90 41 11 59
63 HP	323.1	90 41 11 54	90 41 11 60
84 HP	429.8	90 41 11 55	90 41 11 61



Z-rails for Basic Unit B – IEC 60603-2

Material
Aluminum extrusion, choice of anodized/cutting edges raw or alodined

Scope of delivery

Z-rail	1 PU (10 pcs)
Assembly kit M3	1 PU (10 pcs)

Delivery form
In units for self-assembly

Notes
– Assembly also possible using threaded inserts M2.5/M3
– Screws DIN 7985 M2.5 x 8 mm must be ordered separately

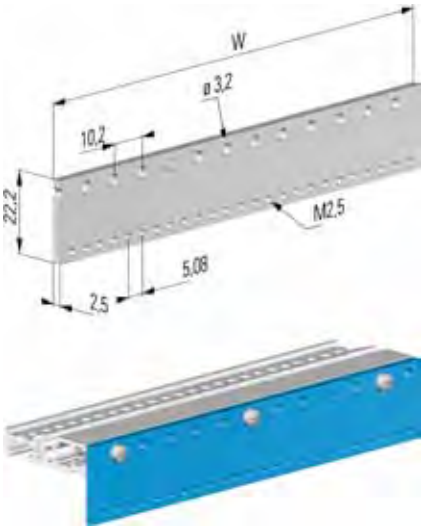
Ordering table

W	Length in mm	Anodized	Alodined
20 HP	104.7	90 41 11 62	–
42 HP	216.5	90 41 11 50	90 41 11 56
63 HP	323.1	90 41 11 51	90 41 11 57
84 HP	429.8	90 41 11 52	90 41 11 58

ACCESSORIES

Perforated rails

Enable mounting of IEC 60603-2 connectors on rear rail E.



Perforated rails for Basic Unit E – IEC 60603-2

Material
Aluminum 2.5 mm, alodined

Delivery form
In units for self-assembly

Scope of delivery

Perforated rail	1 PU (10 pcs)
Assembly kit M3	1 PU (10 pcs)

Notes
- Assembly also possible using threaded inserts M2.5/M3
- Screws DIN 7985 M2.5 x 8 mm must be ordered separately

Ordering table

W	Length in mm	Anodized	Alodined
20 HP	104.7	–	**23 11 02 48**
42 HP	216.5	–	**23 11 02 32**
63 HP	323.1	–	**23 11 02 47**
84 HP	429.8	–	**23 11 02 33**

Coding elements

Coding elements are used for labeling slots or subracks in order to prevent mistakes and hence protect the electronics.

Mounting block for coding pins – FreeTEC

For mounting coding pins in IEEE applications and, in conjunction with the ESD spring, making contact with the board via the front rail.

Material
See ordering table

Scope of delivery
Coding block 1 PU (50 pcs)

Delivery form
In units for self-assembly

Notes
– Is clipped into front rail in front of card guide
– Can be used in 4 HP increments
– Possible to include ESD spring
– Fire resistance rating
PPO: UL 94 V0
PC: NF F 16-101/102 class F1, I2

Ordering table

Position	Color	Material	Order no.
Top	Black	PPO	**23 10 01 50**
Top	Red	PPO	**23 10 04 35**
Top	Gray	PC	**23 10 04 06**
Bottom	Black	PPO	**23 10 01 51**
Bottom	Red	PPO	**23 10 04 36**
Bottom	Gray	PC	**23 10 04 07**

Coding pins IEEE – FreeTEC

Coding pins are inserted into the coding block to prevent confusion when the slots are plugged.

Material
PA

Scope of delivery
Coding pin IEEE 1 PU (50 pcs)

Delivery form
In units for self-assembly

Notes
– Can be turned to 4 positions
– Fire resistance rating
PA: UL 94 V0

Ordering table

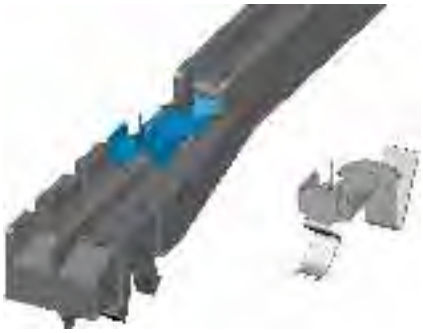
Color	Order no.
Red	**23 10 01 57**

ACCESSORIES

// ESD shielding material

ESD shielding material

ESD springs/screws are used for the discharge of static electricity. ("ESD" abbreviation for "Electrostatic Discharge").



ESD spring for card guide

Is mounted in the card guides for electrostatic discharge of the board to the case.

Material
Tin bronze, tin-plated

Scope of delivery
ESD spring 1 PU (50 pcs)

Delivery form
In units for self-assembly

Note
– Only for card guides that accept ESD springs

Ordering table

Order no.
79 41 71 02

ESD spring alignment pin

The ESD spring alignment pin is mounted in the coding block for electrostatic discharge of the board via the IEEE extractor handle with ESD pin.

Material
Tin bronze, tin-plated

Scope of delivery
ESD spring 1 PU (50 pcs)

Delivery form
In units for self-assembly

Note
– Only for IEEE extractor handle with ESD pin

Ordering table

Order no.
23 10 01 52

Identification strips

Identification strips are used for labeling the slots. The slot position is viewable through a hole in the front panel.

Identification strips – FreeTEC

Is slotted into the groove provided in the rails.

Material
Polycarbonate 0.25 mm, printed

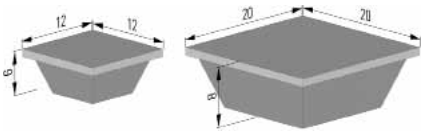
Ordering table

84 HP	Inscription	Order no.
Front	1 - 84 HP (horizontal pitch)	**79 37 00 00**
Rear	84 - 1 HP (horizontal pitch)	**79 37 10 00**
Front	1 - 21 (slot increment)	**79 37 04 21**
Rear	21 - 1 (slot increment)	**79 37 14 21**

ACCESSORIES

// Chassis feet

Chassis feet



Rubber foot, self-adhesive

Can be used for all series

Material
Hard rubber, black

Scope of delivery
Rubber foot 1 PU (20 pcs)

Delivery form
In units for self-assembly

Ordering table

Dimensions	Order no.
12 x 12 mm	79 50 00 00
20 x 20 mm	79 50 01 00

Design construction/studies, backplane layout
based on state-of-the-art CAD technologies

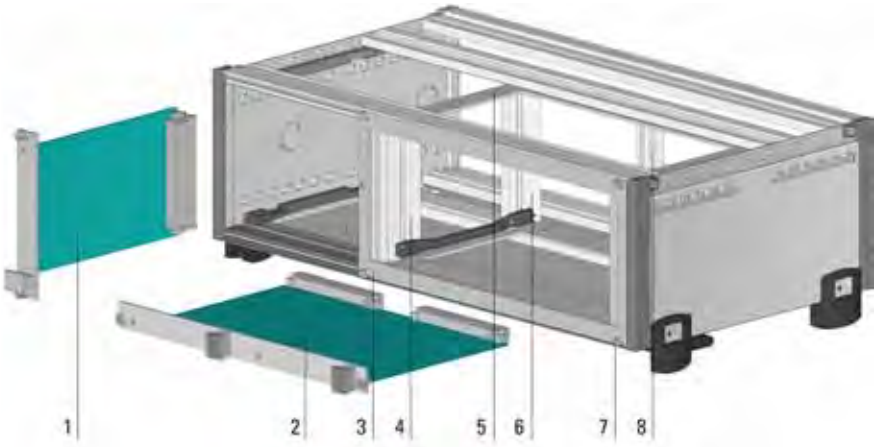
ACCESSORIES

// Horizontal PCB mount

Conversion kit for horizontal PCB mount

Product information
For horizontal PCB mount of double Eurocards in 3 U FreeTEC Series cases

Standards
Mounting dimensions in accordance wtih IEC 60297-3-101



Configuration example
The diagram shows a typical horizontal PCB mount configuration.

1 (Single Eurocard)
2 (Double Eurocard)
3 Front bezel*
4 Front rail
5 Frame top/bottom
6 Rear rail
7 Assembly hardware
8 Center rail

Parts marked with * must be ordered separately.

Mounting dimensions

H	3 U
H1	20 HP = 101.6 mm
W	84 HP
W1	28 HP
W2	56 HP = 284.1 mm
W3	6 U = 262.7 mm

Conversion kit for horizontal PCB mount, EMC – FreeTEC

Scope of delivery

Frame top/bottom	2 pcs
Front rail	2 pcs
Rear rail (B/E)	2 pcs
Center rail (B/E)	1 pc
Assembly kit	1 pc

Material
Aluminum, alodined

Delivery form
Individual components in units for self-assembly

Notes
– EMC version
– Front bezels must be ordered separately. (see below)

Ordering table

H	Basic Unit	Board depth = 160 mm	Board depth = 220 mm
3 U	B	23 10 04 50	–
3 U	E	23 10 04 51	–

Front bezel, 3 U/56 HP, EMC – FreeTEC

For trimming horizontal PCB mount

Scope of delivery

Front bezel	1 pc
Assembly kit, type A (knurled screw)	1 pc

Material
Aluminum 2.5 mm, front anodized/rear alodined

Delivery form
Individual components in units for self-assembly

Notes
– Press-fit metal sleeve
– Shielded version on request

Ordering table

H	W2	Order no.
3 U	56 HP	23 10 04 52

ACCESSORIES

// Assembly components

Ordering table

Usage		Description	Version Material	Standard	FreeTEC	Magic	Space	Order no.	PU
Mounting Z-rails, perforated rails		Cross-recessed pan head screw	M2.5 x 8 mm Steel nickel-plated	DIN 7985	●	●	●	**79 91 08 00**	1 PU (100 pcs)
Mounting card guide		Cross-recessed countersunk head screw	M2.5 x 6 mm Steel zinc-plated	WN 1413	●	●	●	**79 51 50 48**	1 PU (100 pcs)
		Cross-recessed pan head screw	M2.5 x 12 mm Steel nickel-plated	DIN 7985	●	●	●	**79 91 13 00**	1 PU (100 pcs)
		Hexagon nut	M2.5 Steel nickel-plated	DIN 934	●	●	●	**79 91 07 00**	1 PU (100 pcs)
Mounting card guide, thread-forming		Cross-recessed pan head screw	KA3.0 x 12 mm Steel zinc-plated	PT®	●	●	●	**79 51 50 47**	1 PU (100 pcs)
Mounting subrack to 19" rack		Pan head screw with Torx T30	M6 x 16 mm stainless steel	ISO 14583	●	●	●	**79 91 85 00**	1 PU (100 pcs)
		Cross-recessed pan head screw	M6 x 16 mm Steel nickel-plated	DIN 7985	●	●	●	**79 91 23 00**	1 PU (100 pcs)
		Plastic washer	d = 6.8 mm PP		●	●	●	**79 91 30 00**	1 PU (100 pcs)
		Cage nut	M6 Steel zinc-plated		●	●	●	**79 91 31 00**	1 PU (100 pcs)
Individual mounting to side plate		Insert nut	M4 stainless steel		●			**79 91 41 00**	1 PU (10 pcs)

FreeTEC
19" rackmount/desktop case

Series 83 / Series 84
Desktop cases

#01 CONTENT
CASES

Desktop cases for plug-in units

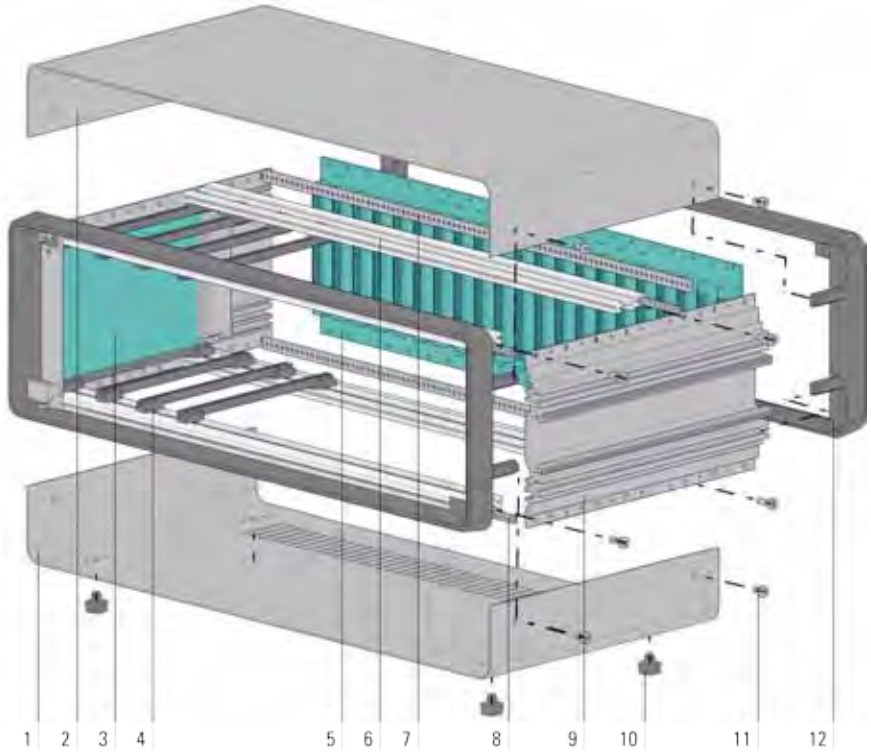
GENERAL INFORMATION

// Application

Desktop case from POLYRACK for mounting plug-in units, typically in single or double Eurocard format and for mounting non-standard components.

// Configuration example

The diagram shows the configuration of a desktop case using the Series 84 (Basic Unit type B) as an example.



1 Bottom cover with ventilation slits
2 Top cover
3 Plug-in unit*
4 Card guide*
5 Backplane*
6 Conversion kit B or C*
7 Isolating strip*
8 Threaded inserts*
9 Side extrusion
10 Plug-in foot (tilt foot* optional)
11 Assembly hardware
12 Front/rear bezel

Parts marked with * are not included in the scope of delivery of the basic unit.

// Notes on standards, units of measurement and mounting/overall dimensions

Inner dimensions
– IEC 60297-3-101
– IEC 60297-3-102

Unit of height U
Measurement unit for height in 19" rack systems
1 U = 44.45 mm

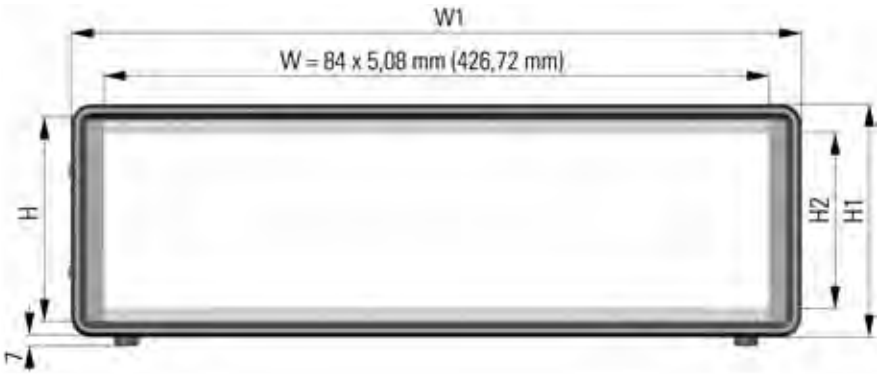
Increment unit HP
Measurement unit for width in 19" rack systems
1 HP = 5.08 mm

Dimensions specified in ordering tables
The dimensions, in particular those given in U and HP, are specified in relation to the application:

Height H = (n (U) x 44.45 mm) - 0.8 mm

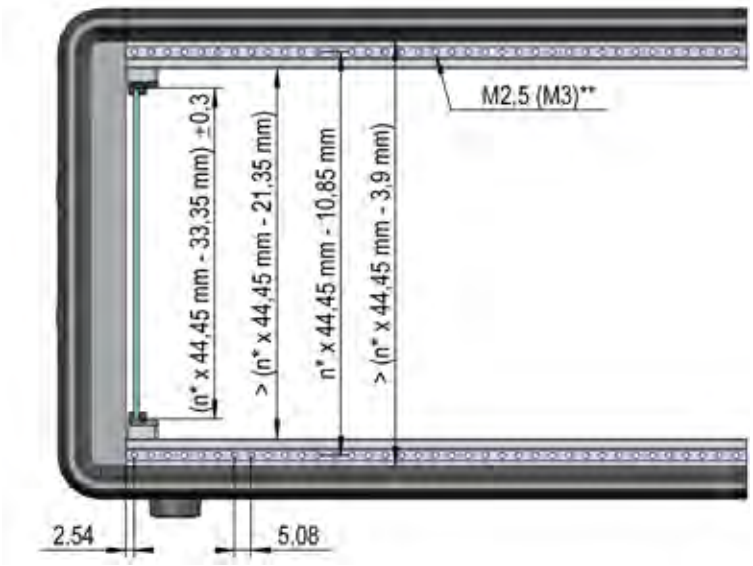
Usable width W = (n (HP) x 5.08 mm)
Actual rail dimension = usable width W + 5.08 mm

The depth D (in mm) indicates the total depth of the case without handles, feet, etc.



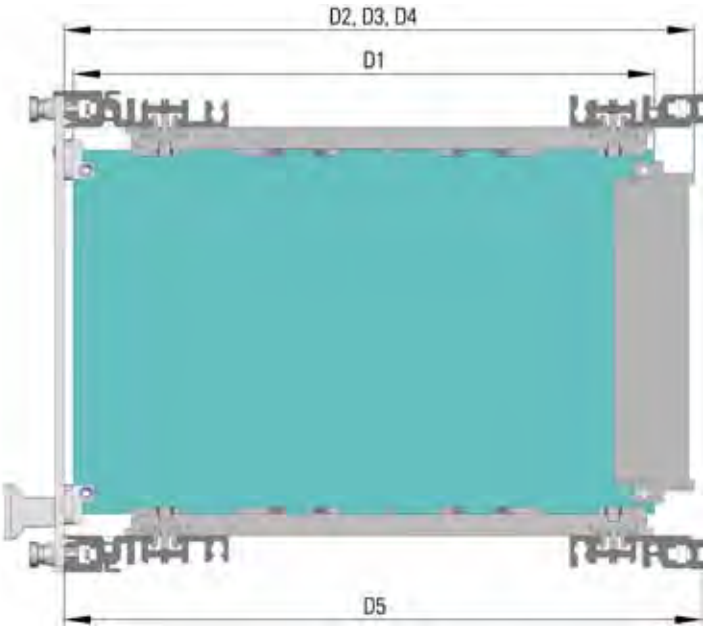
Mounting dimensions (mm)

	H	H2
2 U	= 88.1	≤ 67.5
3 U	= 132.5	≤ 112.0
4 U	= 177.0	≤ 156.45
6 U	= 265.9	≤ 245.35



* (U)
** Mounting holes for front panels

GENERAL INFORMATION

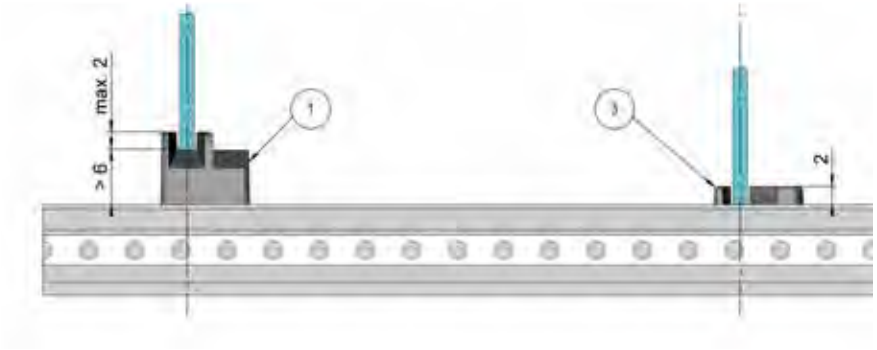


Dimensions for plug-in modules (mm)

D1*	D2 ± 0.4**	D3 ± 0.4***	D4 ± 0.4****
80.00	89.93	91.93	91.74
100.00	109.93	111.93	111.74
160.00	169.93	171.93	171.74
220.00	229.93	231.93	231.74
280.00	289.93	291.93	291.74

* PCB depth
** Insertion depth for IEC 60603-2 connectors, styles B, C, D and IEC 61076-4-113
*** Insertion depth for IEC 60603-2 connectors, styles F, G, H
**** Insertion depth for IEC 61076-4-101 connectors

D5 = D1 + 15.5 mm



Card guides - front view
1 Card guide, standard
3 Card guide 4.4" (111.7 mm)

Slot width 2 mm

// Manufacturing tolerances

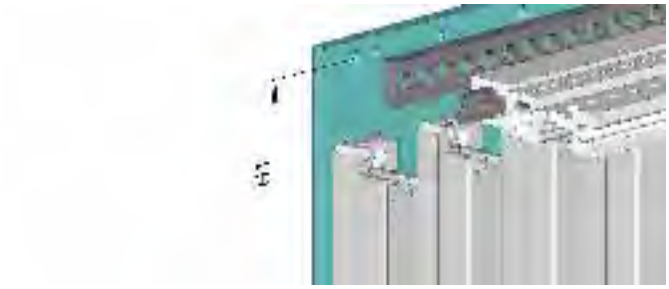
All parts are subject to POLYRACK's factory specifications, whereby:

Extrusion specifications comply with DIN EN 12020-1

Punched parts comply with DIN ISO 6930-1/6930-2 and DIN 6932

// Basic units

There is a choice between 2 basic units, depending on the application.

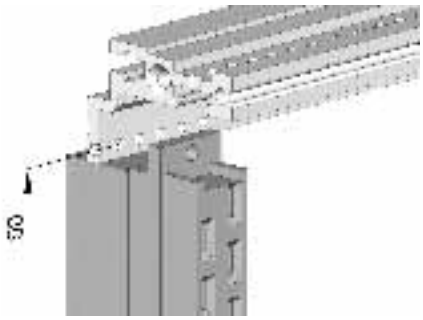


Basic unit B
For indirect mounting of backplanes with isolating strips or for mounting Z-rails.

The dimensions for backplane mounting are calculated as follows:

H1 = n x U - 10.85 mm

Calculation example for 3 U:
H1 = 3 x 44.45 mm - 10.85 mm = 122.5 mm



Basic unit C
With integrated Z-rail for connectors according to IEC 60603-2.

GENERAL INFORMATION

// Overview of series

Series	Surface		EMC shielding concept	Front rail with pitch perforation (IEEE 1101.1/.10)	Features
	Alodined	Powder-coated			
Series 83	–	•	–	–	Frameless construction Cost-optimized
Series 84	–	•	–	–	Stable frame construction Fastening screws for complete front/rear panels not visible (masked by bezels)

// Custom designs

Custom designs are possible in various widths and depths and with individual processing to your specifications.

// Individual assembly

Components are available for your individual assembly.

// Assembly service

Our assembly service is available on request.

// Supplementary products

#01 FRONT PANELS AND PLUG-IN MODULES
⇨ Front panels, plug-in modules and cassettes

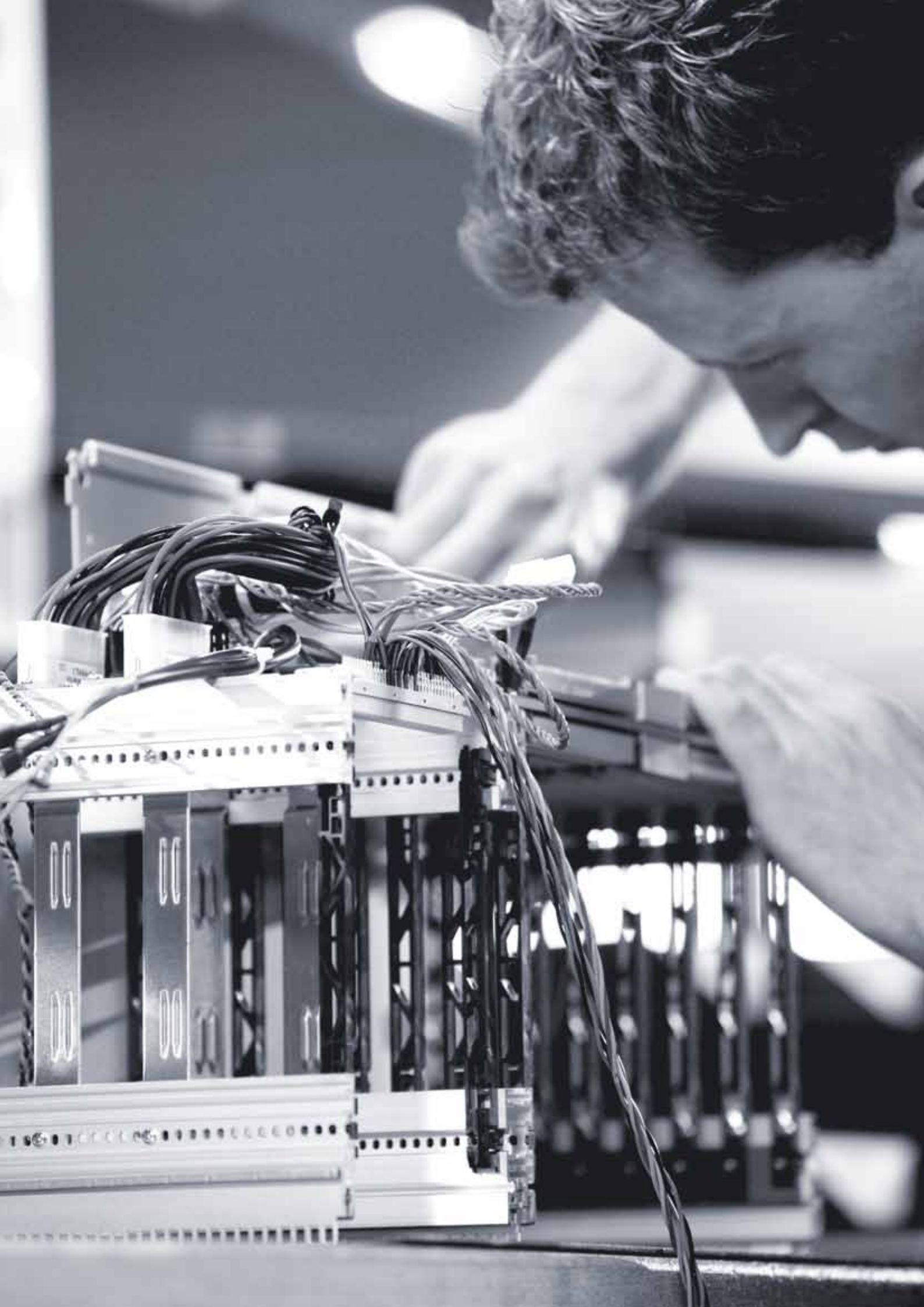
#01 SYSTEMS TECHNOLOGY
⇨ Backplanes

// Questions?

We are happy to help you. Please contact us.

HOTLINE Europe
+49.(0)800-POLYRACK (+49.(0)800-76597225)
sales@polyrack.com

HOTLINE North America
+1.401.770.1500
polyrack_us@polyrack.com



Series 83
Desktop case

Series 83

Product information

The Series 83 desktop case is used for mounting plug-in units and non-standard components. The light-weight, self-supporting construction consisting of horizontal rails and half-covers enables fast and easy assembly.

Standards

– Mounting dimensions in accordance with IEC 60297-2
– IP20 rating in accordance with IEC 60529

Notes

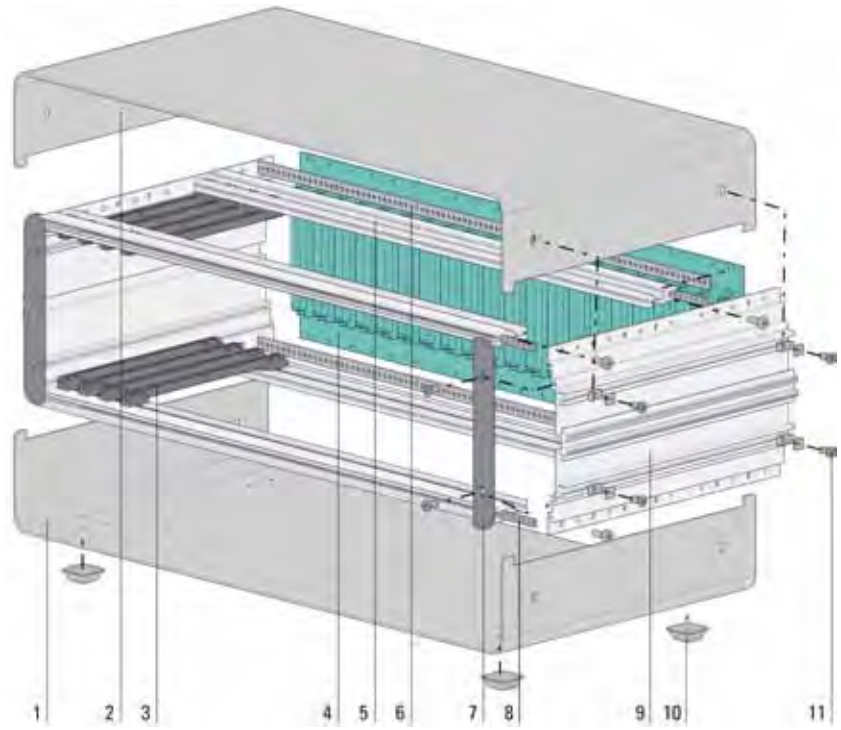
– The case is of limited suitability when EMC criteria apply
– Rails are positioned in 30 mm increments
– No grounding tabs, but these can be mounted individually

Overview

Basic Units	H in U	W in HP			D in mm		Page
	3	42	63	84	240	300	
- Standard	●	●			●	–	CAS 02.13
	●		●		–	●	CAS 02.13
	●			●	●	●	CAS 02.13
- With carrying/support handle	●	●			●	●	CAS 02.13
	●		●		–	●	CAS 02.13
	●			●	●	●	CAS 02.13

Series 83

// Product information



Configuration example

The diagram shows the configuration of a Series 83 desktop case (Basic Unit type B).

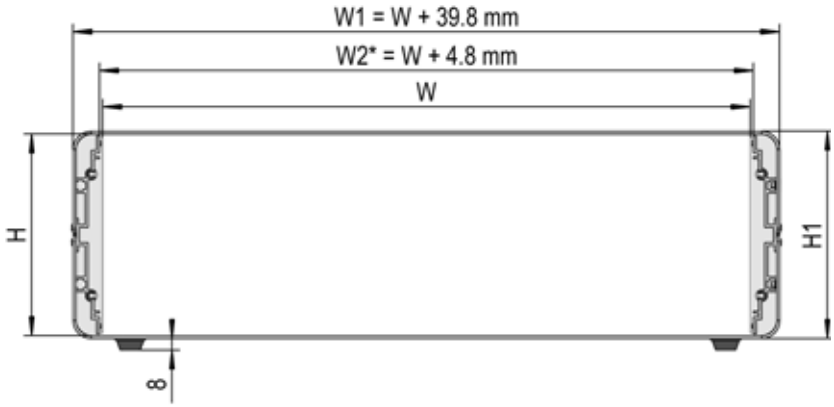
1 Bottom cover
2 Top cover
3 Card guide*
4 Backplane*
5 Conversion kit B or C*
6 Isolating strip*
7 Cover plate*
8 Threaded inserts*
9 Side extrusion
10 Adhesive rubber foot (tilt foot* optional)
11 Assembly hardware

Parts marked with * are not included in the scope of delivery of the basic unit, i. e. must be ordered separately.

Surface finishing

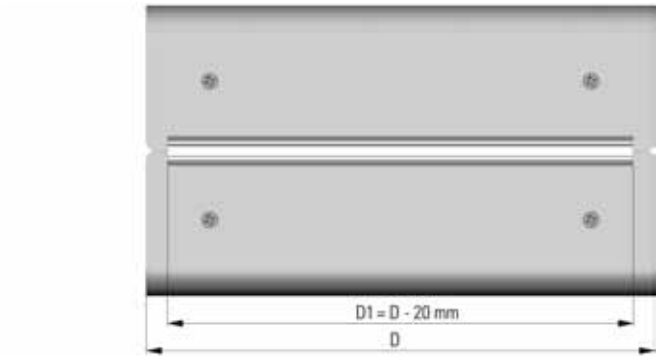
– Top and bottom cover aluminum powder-coated RAL 9018 (papyrus white) fine structure
– Side extrusions anodized/ cutting edges raw

Dimension diagrams

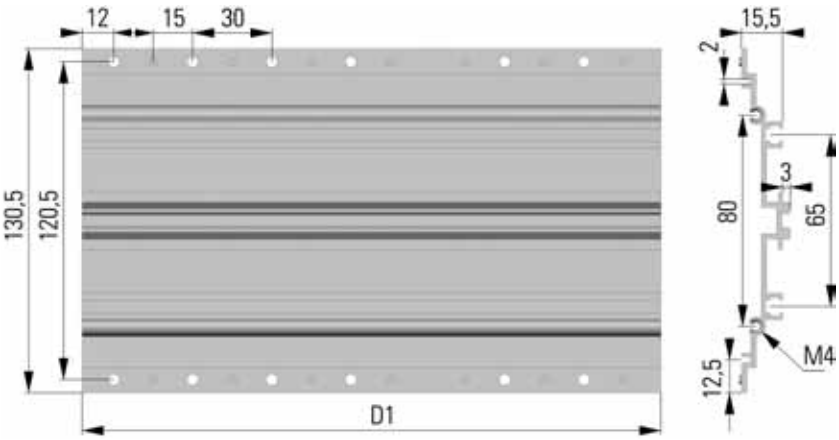


Front view

* W2 = inner mounting dimension



Side view



Side extrusion 3 U

Series 83

Basic units

The Series 83 cases are available in two basic versions. The standard version is designed as a desktop case. The model with the carrying/support handle is ideal for use as a desktop case or for mobile use.

Features of the basic units

Standard

With carrying/support handle

Series 83 case, standard

Scope of delivery

Top cover	1 pc
Bottom cover	1 pc
Side extrusion	2 pcs
Rubber foot, self-adhesive 20 x 20 x 8 mm	4 pcs
Assembly kit	1 pc

Delivery form
In units for self-assembly

Note
– Conversion kits (choice of B or C) must be ordered separately

Ordering table

H	W	H1 in mm	W1 in mm	D = 240 mm	D = 300 mm
3 U	42 HP	136.6	253	**83 30 10 00**	–
3 U	63 HP	136.6	360	–	**83 32 20 00**
3 U	84 HP	136.6	466.5	**83 31 10 00**	**83 31 20 00**

Series 83 case with carrying/support handle

Scope of delivery

Top cover	1 pc
Bottom cover	1 pc
Side extrusion	2 pcs
Carrying/support handle	1 pc
Rubber foot, self-adhesive 20 x 20 x 8 mm	4 pcs
Assembly kit	1 pc

Delivery form
In units for self-assembly

Notes
– Conversion kits (choice of B or C) must be ordered separately
– Carrying handle max. load 15 kg

Ordering table

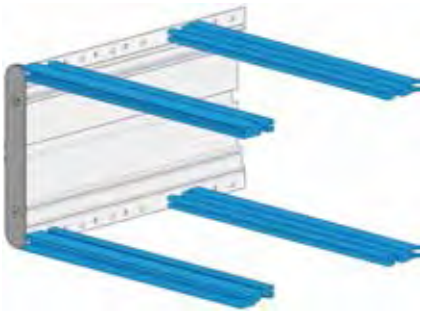
H	W	H1 in mm	W1 in mm	D = 240 mm	D = 300 mm
3 U	42 HP	136.6	253	**83 30 15 00**	**83 30 25 00**
3 U	63 HP	136.6	360	–	**83 32 25 00**
3 U	84 HP	136.6	466.5	**83 31 15 00**	**83 31 25 00**

Series 83

// Basic units

Conversion kits

Front-end M4 threads are provided for mounting to side plate. Front/rear rails include incremented holes for the insertion of card guides.



Conversion kit, basic unit B – Series 83

For indirect mounting of backplanes with isolating strips or for mounting Z-rails

Material
Aluminum extrusion, anodized/cutting edges raw

Scope of delivery

Front rail	2 pcs
Rear rail B	2 pcs
Assembly kit	1 pc

Delivery form
In units for self-assembly

Note
– Threaded inserts and isolating strips must be ordered separately

Ordering table

H	W = 42 HP	W = 63 HP	W = 84 HP
3 U	83 11 00 02	83 11 00 06	83 11 00 10

Conversion kit, basic unit C – Series 83

With integrated Z-rail for connectors according to IEC 60603-2

Material
Aluminum extrusion, anodized/cutting edges raw

Scope of delivery

Front rail	2 pcs
Rear rail C	2 pcs
Assembly kit	1 pc

Delivery form
In units for self-assembly

Note
– Threaded inserts must be ordered separately

Ordering table

H	W = 42 HP	W = 63 HP	W = 84 HP
3 U	83 11 00 03	83 11 00 07	83 11 00 11

Cover plates

Coverplate – Series 83

For trimming and for creating the mounting dimensions for plug-in units

Material
Aluminum 2.5 mm, anodized/cutting edges raw

Scope of delivery
Cover plate 1 PU (10 pcs)

Delivery form
In units for self-assembly

Note
– Assembly hardware is contained in Series 83 assembly kit

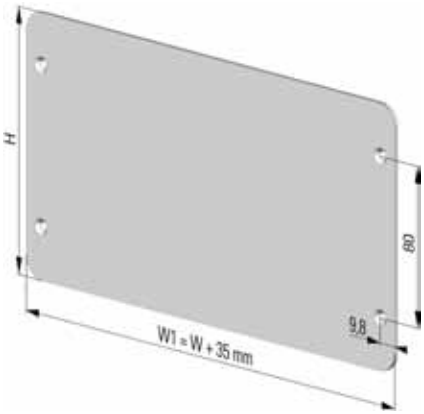
Ordering table

H	H in mm	Order no.
3 U	132.5	**79 73 00 00**

Series 83

// Single components

Front panels, rear panels



Front panel – Series 83

Mounted to side extrusion

Material
Aluminum 2.5 mm, anodized/cutting edges raw

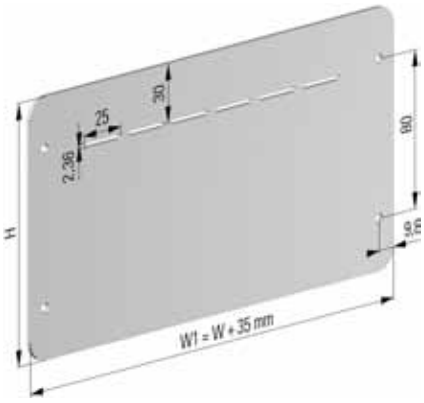
Scope of delivery

Front panel	1 pc
Assembly kit	1 pc

Delivery form
Individual components in units for self-assembly

Ordering table

H	W = 42 HP	W = 63 HP	W = 84 HP
3 U	13 30 13 00	13 30 33 00	13 30 23 00



Rear panel – Series 83

With ventilation slits for better heat dissipation
Mounted to side extrusion

Material
Aluminum 2 mm, powder-coated RAL 9018 (papyrus white), fine structure, matt

Scope of delivery

Rear panel	1 pc
Assembly kit	1 pc

Delivery form
Individual components in units for self-assembly

Ordering table

H	W = 42 HP	W = 63 HP	W = 84 HP
3 U	83 01 20 07	83 01 20 08	83 01 20 09

Carrying/support handles

Carrying/support handle – Series 83

For mobile use, for mounting on "Series 83 standard cases", cannot be added later.
Handle side legs and handle bar must be ordered separately.

Notes
- Max. load 15 kg
- Adjustable in 30° increments at the push of a button

Handle side legs – Series 83

Material
Handle side legs
PA glass-fiber reinforced, black

Scope of delivery
Handle side legs (1 pair) 1 pc

Delivery form
In units for self-assembly

Notes
- Handle side legs with locking device
- Cross-recessed pan head screws DIN 7985, M5 x 12 mm must be ordered separately. (Order no. 79 91 32 00)

Ordering table

Order no.
79 50 40 00

Handle bar – Series 83

Material
Aluminum extrusion, anodized/cutting edges raw

Scope of delivery
Handle extrusion (L = 1000 mm) 1 pc

Delivery form
In units for self-assembly

Notes
- The handle bar is held in place by expansion clamping
- Length of extrusion = case width +16 mm
- Without anti-slip element

Ordering table

Order no.
90 10 00 00

Series 83

// Single components

Chassis plates

Chassis plate – Series 83

For mounting custom assemblies

Material
Aluminum 2 mm, raw

Scope of delivery
Chassis plate 1 pc

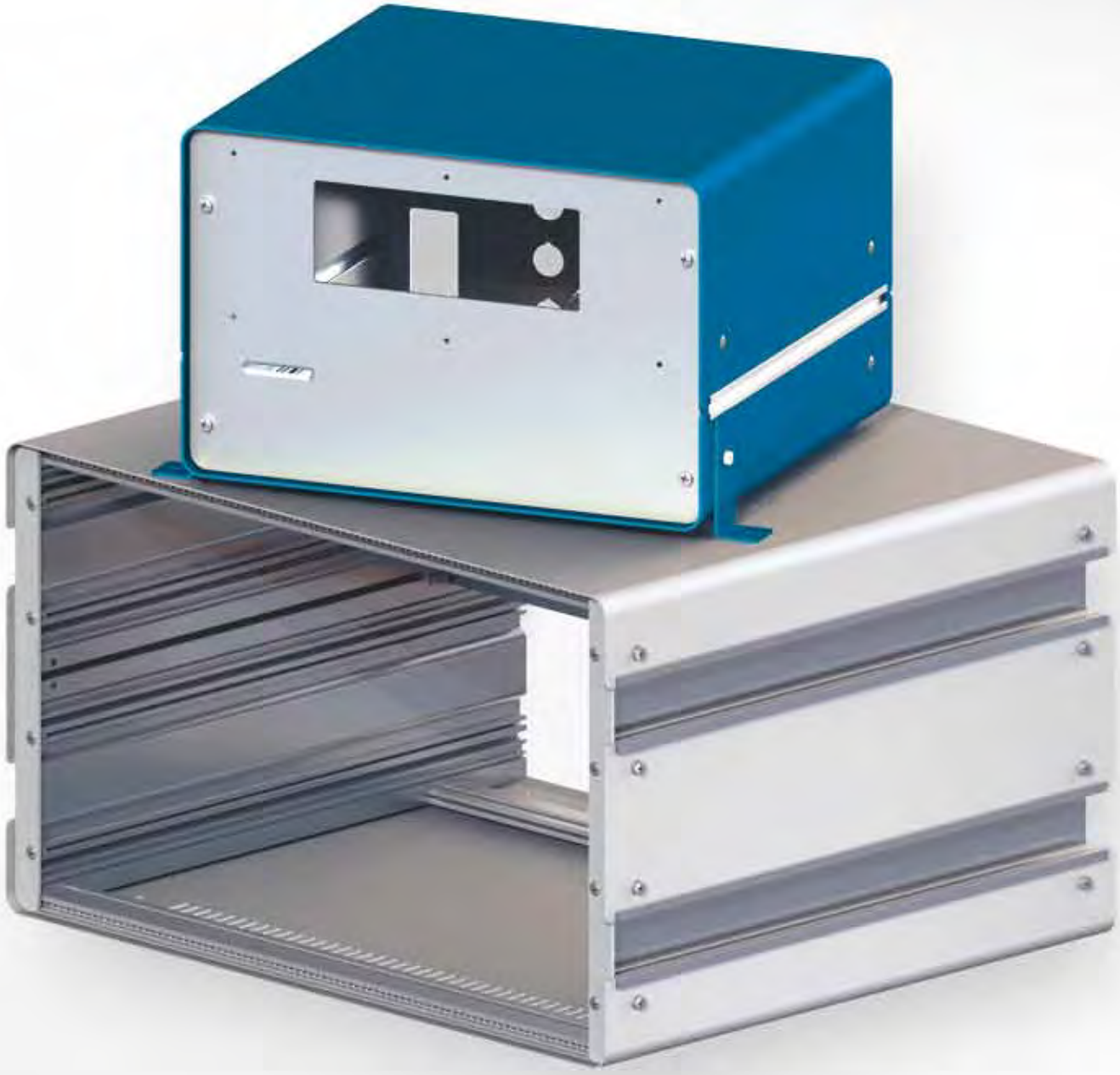
Delivery form
In units for self-assembly

Note
– Are inserted into the grooves in the side extrusion

Ordering table

W	W1 in mm	D in mm	D1 in mm	Order no.
42 HP	225.2	240	219.5	**79 76 20 00**
42 HP	225.2	300	279.5	**79 76 21 00**
63 HP	332.0	240	219.5	**79 76 24 00**
63 HP	332.0	300	279.5	**79 76 25 00**
84 HP	438.7	240	219.5	**79 76 22 00**
84 HP	438.7	300	279.5	**79 76 23 00**

Series 83
Desktop case



Series 84
Desktop case

Series 84

Product information

The Series 84 desktop case is used for mounting plug-in units and non-standard components. The frame construction guarantees high stability. Removable half-covers provide ideal accessibility, thus enabling fast and easy assembly. The fastening screws for the front/rear panels are masked by the front/rear bezels.

Standards

– Mounting dimensions in accordance with IEC 60297-2
– IP20 rating in accordance with IEC 60529

Notes

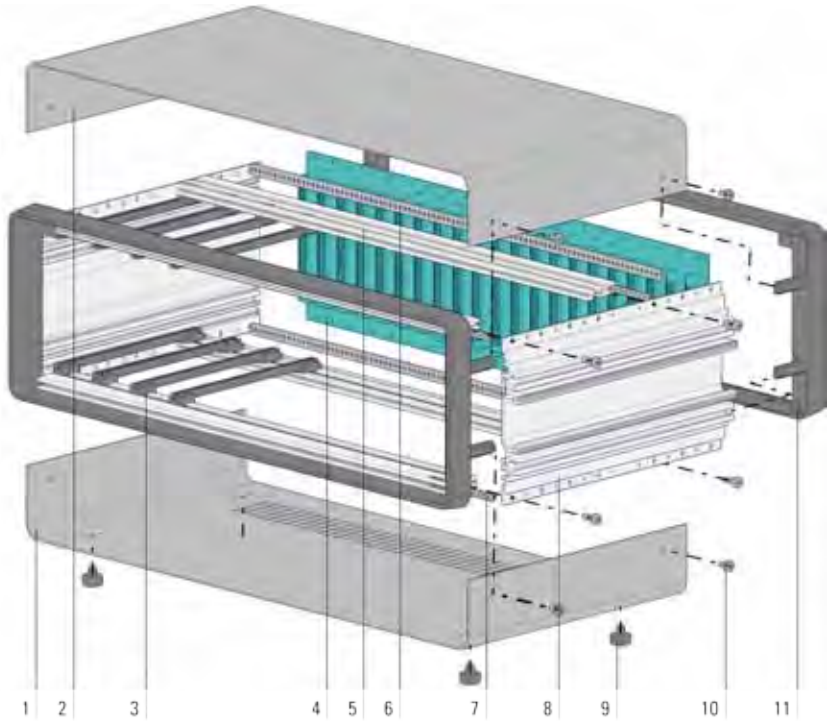
– The cases are suitable only to a limited extent when EMC criteria apply.
– Option of handle grips or carrying/support handle
– Rails can be positioned in 30 mm increments
– No grounding tabs, but these can be mounted individually

Overview

Basic Units	H in U		W in HP			D1 in mm			Page
	2	3	42	63	84	269	329	389	
- Standard	●		●			●	–	–	CAS 02.25
		●	●	●	●	●	●	●	CAS 02.25
- With carrying/support handle		●	●	●	●	●	●	●	CAS 02.25

Series 84

// Product Information



Configuration example

The diagram shows the configuration of a Series 84 desktop case (Basic Unit type B).

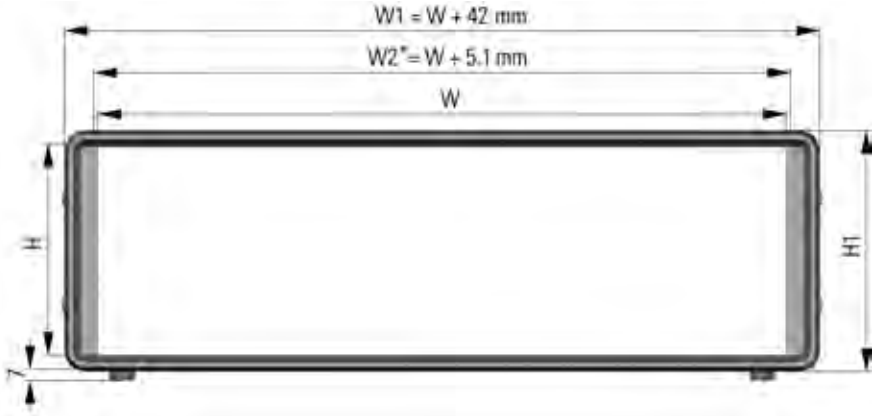
1 Bottom cover with ventilation slits
2 Top cover
3 Card guide*
4 Backplane*
5 Conversion kit B or C*
6 Isolating strip*
7 Threaded inserts*
8 Side extrusion
9 Plug-in foot (tilt foot* optional)
10 Assembly hardware
11 Front/rear bezel

Parts marked with * are not included in the scope of delivery of the basic unit, i. e. must be ordered separately.

Surface finishing

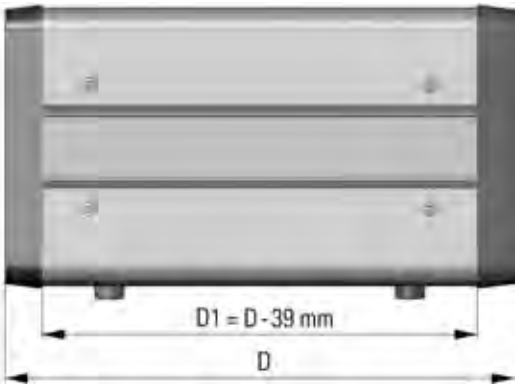
– Front and rear bezels and plastic/aluminum extrusion, coated RAL 7038 (agate gray) structure
– Top and bottom cover aluminum powder-coated RAL 9018 (papyrus white) fine structure

Dimension diagrams

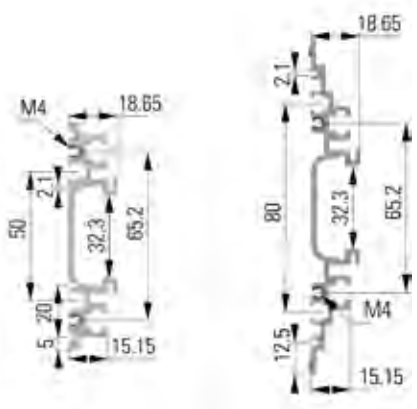


Front view

* W2 = inner mounting dimension



Side view



Cross-section of side extrusions 2 U, 3 U

Series 84

Basic units

The Series 84 cases are available in two basic versions. The standard version is designed as a desktop case. The model with the carrying/support handle is ideal for use as a desktop case or for mobile use.

Features of the basic units

Standard

With carrying/support handle

Series 84 case, standard

Scope of delivery

Top cover	1 pc
Bottom cover with ventilation slits	1 pc
Splitting plate (6 U only)	1 pc
Side extrusion	2 pcs
(6 U only)	4 pcs
Front/rear bezel	2 pcs
Plug-in foot ø15 x 7 mm	4 pcs
Assembly kit	1 pc

Delivery form

Partially assembled

Notes

– Conversion kits (choice of B or C) must be ordered separately
– Conversion kits cannot be mounted with 2U

Ordering table

H	W	H1 in mm	W1 in mm	D = 269 mm	D = 329 mm	D = 389 mm
2 U	42 HP	104.5	255	**84 20 01 00**	–	–
3 U	42 HP	149	255	**84 30 01 00**	**84 30 02 00**	**84 30 03 00**
3 U	63 HP	149	362	**84 31 01 00**	**84 31 02 00**	**84 31 03 00**
3 U	84 HP	149	469	**84 32 01 00**	**84 32 02 00**	**84 32 03 00**

Series 84 case with carrying/support handle

Scope of delivery

Top cover	1 pc
Bottom cover with ventilation slits	1 pc
Splitting plate (6 U only)	1 pc
Side extrusion	2 pcs
(6 U only)	4 pcs
Front/rear bezel	2 pcs
Carrying/support handle	1 pc
Plug-in foot ø15 x 7 mm	4 pcs
Assembly kit	1 pc

Delivery form

Partially assembled

Notes

– Conversion kits (choice of B or C) must be ordered separately
– Carrying handle max. load 25 kg

Ordering table

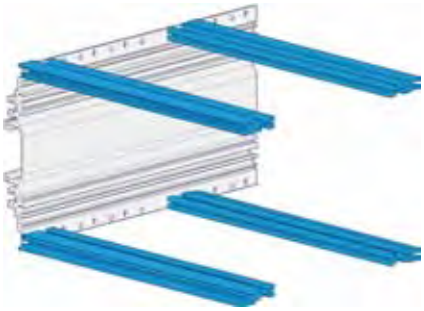
H	W	H1 in mm	W1 in mm	D = 269 mm	D = 329 mm	D = 389 mm
3 U	42 HP	149	255	**84 30 11 00**	**84 30 12 00**	**84 30 13 00**
3 U	63 HP	149	362	**84 31 11 00**	**84 31 12 00**	**84 31 13 00**
3 U	84 HP	149	469	**84 32 11 00**	**84 32 12 00**	**84 32 13 00**

Series 84

// Single components

Conversion kits B/C

Front-end M4 threads are provided for mounting to side plate. Front and rear rails include incremented holes for the insertion of card guides.



Conversion kit, basic unit B – Series 84

For indirect mounting of backplanes with isolating strips or for mounting Z-rails

Material
Aluminum extrusion, anodized/cutting edges raw

Note
– Threaded inserts and isolating strips must be ordered separately

Scope of delivery

Front rail B	2 pcs
Rear rail B	2 pcs
Assembly kit	1 pc

Delivery form
In units for self-assembly

Ordering table

H	W = 42 HP	W = 63 HP	W = 84 HP
3 U	85 30 10 00	85 31 10 00	85 32 10 00

Conversion kit, basic unit C – Series 84

With integrated Z-rail for connectors according to IEC 60603-2

Material
Aluminum extrusion, anodized/cutting edges raw

Note
– Threaded inserts must be ordered separately

Scope of delivery

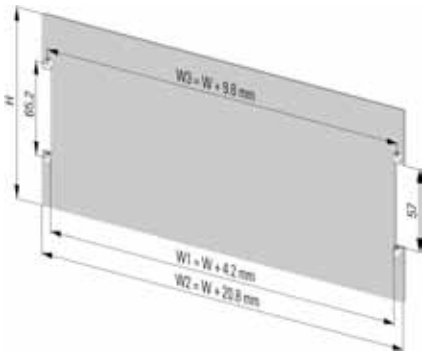
Front rail B	2 pcs
Rear rail C	2 pcs
Assembly kit	1 pc

Delivery form
In units for self-assembly

Ordering table

H	W = 42 HP	W = 63 HP	W = 84 HP
3 U	85 30 20 00	85 31 20 00	85 32 20 00

Front panels, rear panels



Front panel – Series 84

The front panel is secured to the side extrsions. The screw heads are masked by the front bezel.

Material
Aluminum 2.5 mm, anodized/cutting edges raw

Scope of delivery

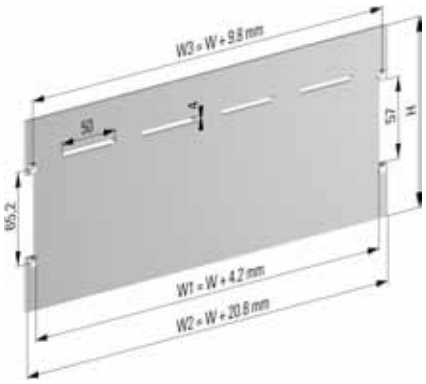
Front panel	1 pc
Assembly kit	1 pc

Delivery form
Individual components in units for self-assembly

Note
– Mount front panel before fitting bezel

Ordering table

H	W = 42 HP	W = 63 HP	W = 84 HP
2 U	15 20 13 00	–	15 20 33 00
3 U	15 30 13 00	15 30 23 00	15 30 33 00



Rear panel – Series 84

The rear panel is secured to the side extrusions. The screw heads are masked by the rear bezel. Ventilation slits provide for better heat dissipation.

Material
Aluminum 2.5 mm, anodized/cutting edges raw

Scope of delivery

Rear panel	1 pc
Assembly kit	1 pc

Delivery form
Individual components in units for self-assembly

Note
– Mount rear panel before fitting bezel

Ordering table

H	W = 42 HP	W = 63 HP	W = 84 HP
2 U	84 01 20 25	–	84 01 20 27
3 U	84 01 20 28	84 01 20 29	84 01 20 30

// Single components

Carrying/support handle

Carrying/support handle – Series 84

For mobile use, for mounting on "Series 84 standard cases", cannot be added later.

Material
Side legs, glass-fiber reinforced PA, painted silver Handlebar, aluminum, powder-coated in RAL 7038 (agate gray), fine structure matt finish

Scope of delivery

Handle	1 pc
Assembly kit	1 pc

Delivery form
Handle fully preassembled

Notes
– Max. load 25 kg
– The handle can be adjusted in 30° increments at the push of a button

Ordering table

H	W = 42 HP	W = 63 HP	W = 84 HP
3 U	80 00 01 00	80 00 02 00	80 00 03 00

Chassis plates

Chassis plate – Series 84

For mounting custom assemblies.

Material
Aluminum 2 mm, raw

Scope of delivery
Chassis plate 1 pc

Delivery form
In units for self-assembly

Note
– Are inserted into the grooves in the side extrusion

Ordering table

W	W1 in mm	D in mm	D1 in mm	Order no.
42 HP	222.8	269	228.4	**79 76 41 00**
42 HP	222.8	329	288.4	**79 76 42 00**
42 HP	222.8	389	348.4	**79 76 43 00**
63 HP	329.5	269	228.4	**79 76 44 00**
63 HP	329.5	329	288.4	**79 76 45 00**
63 HP	329.5	389	348.4	**79 76 46 00**
84 HP	436.4	269	228.4	**79 76 47 00**
84 HP	436.4	329	288.4	**79 76 48 00**
84 HP	436.4	389	348.4	**79 76 49 00**

Accessories
Various card guides and handles

ACCESSORIES

// Content

ACCESSORIES

Threaded inserts

Enable mounting of Z-rails, plug-in units or back-planes on horizontal rails.

Threaded inserts

Material
Steel 5 x 2 mm, white zinc-plated

Scope of delivery
Threaded inserts 1 PU (10 pcs)

Delivery form
In units for self-assembly

Note
– Option of M2.5 or M3 thread

Ordering table

W	M2.5 thread	M3 thread
20 HP	**79 32 18 00**	**79 33 18 00**
42 HP	**79 32 14 00**	**79 33 14 00**
63 HP	**79 32 16 00**	**79 33 16 00**
84 HP	**79 32 17 00**	**79 33 17 00**

Card guides

For mounting Eurocards in the card cage of the case. They are clipped into the incremented holes of the rails and are also used for positioning.

Notes

– Slot width 2 mm for PCB thickness of 1.6 mm
– Fire resistance rating
  PPO: UL 94 V0
– The 3-piece card guide accepts PCBs of all depths

Overview

Board depth	Slot width	Version	Material	Color	Series 83	Series 84	Order no.	Page
EC 100 mm	2.0 mm	Standard	PPO	Black	●	●	**79 31 40 00**	CAS 02.34
EC 160 mm	2.0 mm	Standard	PPO	Black	●	●	**79 31 00 00**	CAS 02.34
	2.0 mm	Heavy-duty version	PPO	Black	●	●	**79 31 04 00**	CAS 02.34
		Card grid, 7-piece						
	2.0 mm	Standard	PPO	Black	●	●	**79 31 91 00**	CAS 02.35
		4.4" **						
	2.0 mm	Standard	PPO	Black	●	●	**79 31 03 00**	CAS 02.34
EC 220 mm	2.0 mm	Heavy-duty version	PPO	Black	●	●	**79 31 12 00**	CAS 02.34
EC variable		Card guide, 3-piece						
	2.0 mm	End pieces (1 pair)	PPO	Black	●	●	**79 31 62 00**	CAS 02.35
	2.0 mm	Extrusion (l = 2750 mm)***	AL	Clear	●	●	**90 16 00 00**	CAS 02.35
	2.0 mm	Extrusion (l = 2750 mm)***	ABS	Black	●	●	**90 42 40 02**	CAS 02.35

** For board formats 111.7 mm x 160 mm
*** Length of extrusion adjusted to PCB depth (for Series 83/84 = EC - 49 mm) on request

ACCESSORIES

// Card guides

Card guide – Series 83/84

Material
PPO

Scope of delivery
Card guide 1 PU (50 pcs)

Delivery form
In units for self-assembly

Note
– Heavy-duty version screwed into place

Ordering table

Board depth	Slot width	Color	Standard	Heavy-duty version
100 mm	2.0 mm	Black	79 31 40 00	–
160 mm	2.0 mm	Black	79 31 00 00	79 31 04 00
220 mm	2.0 mm	Black	–	79 31 12 00

Card guide 4.4" – Series 83/84

For card height 4.4" (111.7 mm)

Material
PPO

Scope of delivery
Card guide 1 PU (50 pcs)

Delivery form
In units for self-assembly

Note
– Can only be clicked into place

Ordering table

Board depth	Slot width	Color	Standard	Heavy-duty version
160 mm	2.0 mm	Black	79 31 03 00	–

Card grid – Series 83/84

Card grid, 7-piece, in 4 HP increments

Material
PPO

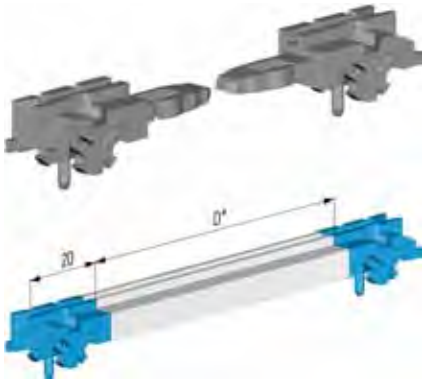
Scope of delivery
Card grid 1 PU (25 pcs)

Delivery form
In units for self-assembly

Note
– Can only be clipped into place

Ordering table

Board depth	Slot width	Color	Standard	Heavy-duty version
160 mm	2.0 mm	Black	**79 31 91 00**	–



Card guide, 3-piece – Series 83/84

Card guide, 3-piece, for customized board depth

Material
See ordering table

Scope of delivery
See ordering table

Delivery form
In units for self-assembly

Note
– End pieces can in addition be screwed into place

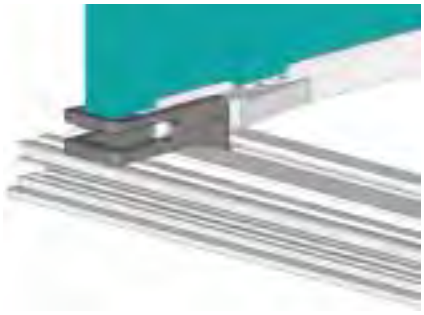
Ordering table

Version	Slot width	Material	Color	Scope of delivery	Order no.
End pieces (pair)	2.0 mm	PPO	Black	1 PU (50 pairs)	**79 31 62 00**
Card guide extrusion	2.0 mm	Aluminum	Anodized	2750 mm	**90 16 00 00**
Card guide extrusion	2.0 mm	ABS	Black	2750 mm	**90 42 40 01**

Extrusion length D* adjusted to PCB depth (for Series 83/84 = EC - 49 mm) on request

ACCESSORIES

// Board retainers



Board retainers

Board retainers are used to secure the boards in the case, typically in applications without front panels.

Note
– Fire resistance rating
PPO: UL 94 V0

Board extractor

Used singly

Material
PC

Scope of Delivery

Board extractor	1 pc
Cylindrical pin	1 pc

Delivery Form
In units for self assembly

Notes
– Mounting either bottom or top board extractor
– Board extractor and board retainers can be used in combination

Ordering table

Order no.
79 3115100

Board retainer – Series 83/84

Used singly

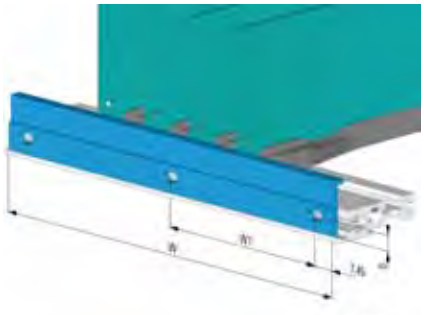
Material
See ordering table

Scope of delivery
Board retainer 1 PU (50 pcs)

Delivery form
In units for self-assembly

Ordering table

Series	Color	Material	Order no.
Series 83/84	Black	PPO	79 31 53 00



PCB locking rail

Enables central PCB locking if front panel is not used.

Material
Aluminum extrusion, clear anodized/cutting edges raw

Scope of delivery

PB locking rail	1 pce
Assembly kit type A	1 pc
Extrusion (L = 2700 mm)	1 pc

Delivery form
In units for self-assembly

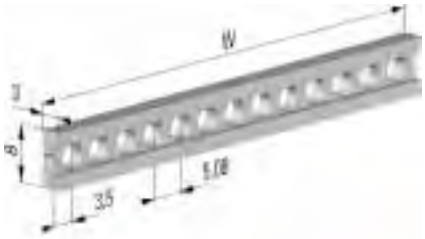
Note
– Sleeve hole (W1 = 215.8 mm) only for 84 HP

Ordering table

W	Order no.
42 HP	90 11 11 00
63 HP	90 11 13 00
84 HP	90 11 12 00
2700 mm	90 11 10 00

Isolating strips

Enable isolated mounting of the backplane on rear rail B and establish standard insertion depth. Mounting clips secure the isolating strip.



Isolating strips

Material
ABS

Scope of delivery
Isolating strips 1 PU (10 pcs)

Delivery form
In units for self-assembly

Note
– Fire resistance rating UL 94 V0

Ordering table

W	Color	Order no.
20 HP	Gray	**79 38 04 00**
42 HP	Gray	**79 38 01 00**
63 HP	Gray	**79 38 03 00**
84 HP	Gray	**79 38 02 00**

Mounting clips for isolating strips

For positioning and securing isolating strips to threaded inserts

Material
ABS

Scope of delivery
Mounting clips 1 PU (100 pcs)

Delivery form
In units for self-assembly

Note
– Fire resistance rating UL 94 V0

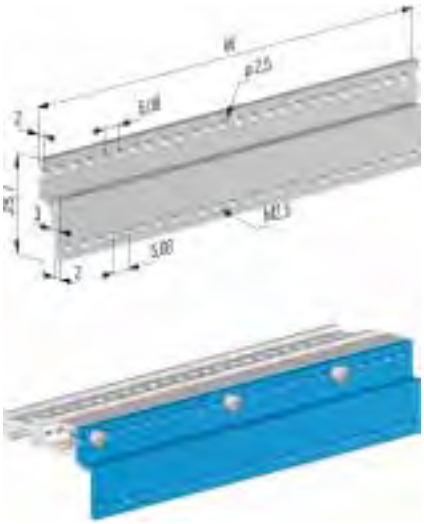
Ordering table

Color	Order no.
Gray	**79 51 50 00**

ACCESSORIES

Z-rails

Enable mounting of IEC 60603-2 or IEC 60603-1 connectors on rear rail B.



Z-rails for basic unit B – IEC 60603-1

Material
Aluminum extrusion, choice of anodized/cutting edges raw or alodined

Scope of delivery

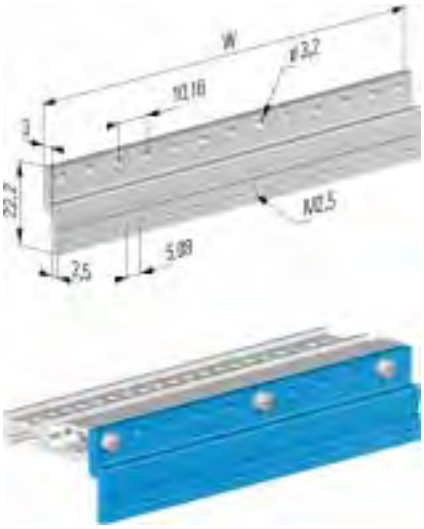
Z-rail	1 PU (10 pcs)
Assembly kit M3	1 PU (10 pcs)

Delivery form
In units for self-assembly

Notes
– Assembly also possible using threaded inserts M2.5/M3
– Screws DIN 7985 M2.5 x 8 mm must be ordered separately

Ordering table

W	Length in mm	Anodized	Alodined
20 HP	104.7	90 41 11 63	–
42 HP	216.5	90 41 11 53	90 41 11 59
63 HP	323.1	90 41 11 54	90 41 11 60
84 HP	429.8	90 41 11 55	90 41 11 61



Z-rails for basic unit B – IEC 60603-2

Material
Aluminum extrusion, choice of anodized/cutting edges raw or alodined

Scope of delivery

Z-rail	1 PU (10 pcs)
Assembly kit M3	1 PU (10 pcs)

Delivery form
In units for self-assembly

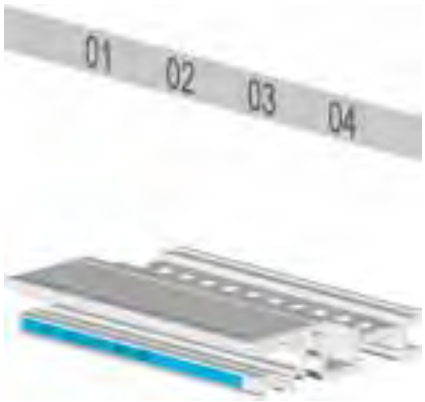
Notes
– Assembly also possible using threaded inserts M2.5/M3
– Screws DIN 7985 M2.5 x 8 mm must be ordered separately

Ordering table

W	Length in mm	Anodized	Alodined
20 HP	104.7	90 41 11 62	–
42 HP	216.5	90 41 11 50	90 41 11 56
63 HP	323.1	90 41 11 51	90 41 11 57
84 HP	429.8	90 41 11 52	90 41 11 58

Identification strips

Identification strips are used for labelling the slots. The slot position is viewable through a hole in the front panel.



Identification strips – Series 83/84

Is slotted into the groove provided in the rails.

Material
Polycarbonate 0.25 mm, printed

Scope of delivery
Identification strips 1 PU (10 pcs)

Delivery form
In units for self-assembly

Notes
– Single sided adhesive (peel-off film)
– Slot increment: 1 slot = 4 HP

Ordering table

84 HP	Inscription	Order no.
Front	1 - 84 HP (horizontal pitch)	**79 37 00 00**
Rear	84 - 1 HP (horizontal pitch)	**79 37 10 00**
Front	1 - 21 (slot increment)	**79 37 04 21**
Rear	21 - 1 (slot increment)	**79 37 14 21**

ACCESSORIES

// Case feet

Case feet

Tilt feet can be used for Series 83/84 cases as an alternative to the adhesive rubber feet or the plug-in feet that are supplied as standard in the basic units. These must be ordered separately.

Tilt foot – Series 83/84

Can be mounted at a later point in time

Material
Case/tilt feet ABS
Anti-slip insert NBR

Scope of delivery

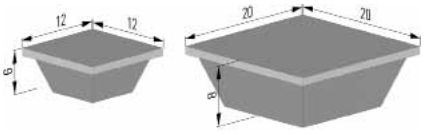
Foot, rear	2 pcs
Tilt foot, front	2 pcs
Assembly kit	1 pc

Delivery form
As kit for self-assembly

Notes
– Max. load 5 kg
– Tilt angle of case 10°
– With anti-slip inserts

Ordering table

Color	Order no.
Black	79 50 30 00
Gray	79 50 31 00



Rubber foot, self-adhesive

Can be used for all series

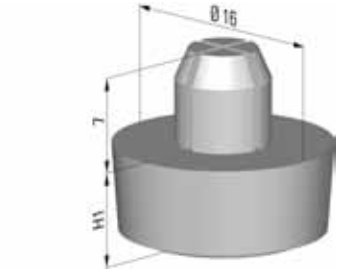
Material
Hard rubber, black

Scope of delivery
Rubber foot 1 PU (20 pcs)

Delivery form
In units for self-assembly

Ordering table

Dimensions in mm	Order no.
12 x 12	79 50 00 00
20 x 20	79 50 01 00



Plug-in foot – Series 84

Material
PS, black

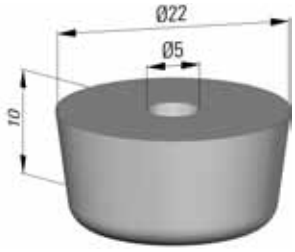
Scope of delivery
Plug-in feet 1 PU (20 pcs)

Delivery form
In units for self-assembly

Notes
– Easy to assemble by pressing in the core flush Assembly hole: ø 7 mm + 0.2 mm Material thickness: 1.5 - 3 mm
– With anti-slip insert

Ordering table

H1 in mm	Order no.
6.5	**79 50 20 00**
11.5	**79 50 21 00**



Rubber foot, screw-on – Series 84

Material
Hard rubber, black

Scope of delivery
Rubber foot 1 PU (20 pcs)

Delivery form
In units for self-assembly

Note
– Assembly hardware pan head screw M5 x 12 mm must be ordered separately.

Ordering table

H in mm	Order no.
10	**79 50 10 00**

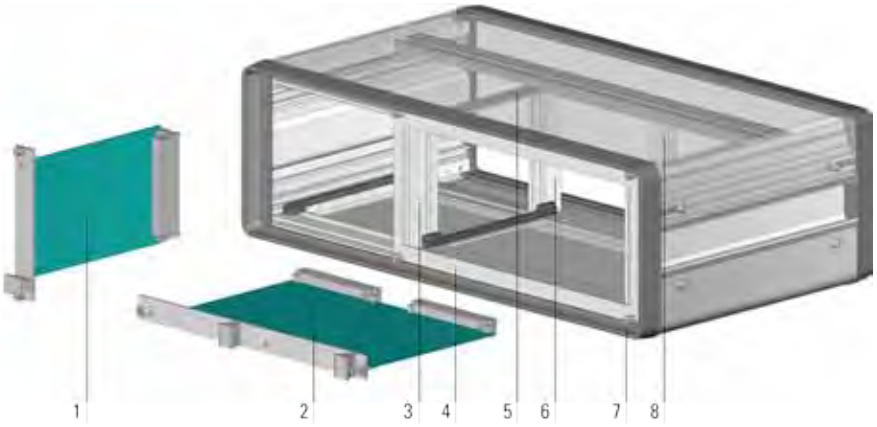
ACCESSORIES

// Horizontal PCB Mount

Conversion kit for horizontal PCB mount

Product information
For horizontal PCB mount of double Eurocards in 3 U Series 83/84 cases

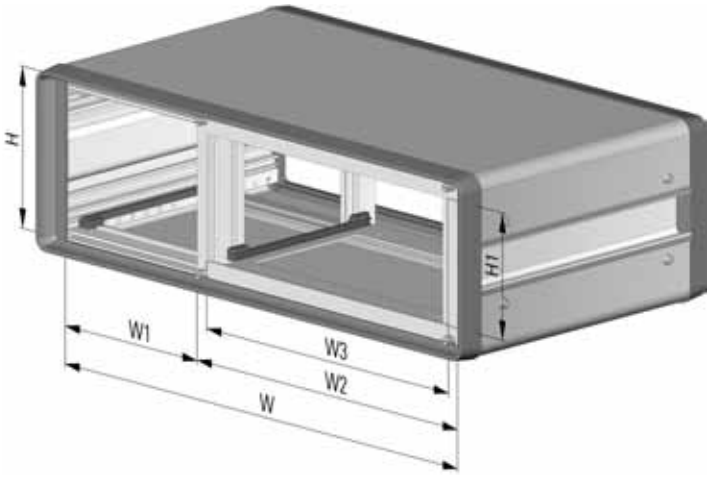
Standards
Mounting dimensions in accordance wtih IEC 60297-3-101



Configuration example
The diagram shows a typical horizontal PCB mount configuration.

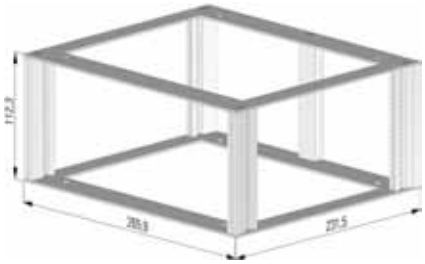
1 (Single Eurocard)
2 (Double Eurocard)
3 Front rail
4 Front bezel*
5 Frame top/bottom
6 Rear rail
7 Assembly hardware
8 Center rail

Parts marked with * must be ordered separately.



Mounting dimensions

H	3 U
H1	20 HP = 101.6 mm
W	84 HP
W1	28 HP
W2	56 HP = 284.1 mm
W3	6 U = 262.7 mm



Conversion kit for horizontal PCB mount – Series 83/84

Scope of delivery

Frame top/bottom	2 pcs
Front rail	2 pcs
Rear rail (B/C)	2 pcs
Center rail (B/C)	1 pc
Assembly kit	1 pc

Delivery form
Individual components in units for self-assembly

Note
– Front bezels must be ordered separately (see below)

Material
Aluminum, anodized/cutting edges raw

Ordering table

H	Basic Unit	Board depth = 160 mm	Board depth = 220 mm
3 U	B	87 36 10 00	87 37 10 00
3 U	C	87 36 20 00	87 37 20 00

Front bezel, 3 U/56 HP – Series 83/84

For trimming horizontal PCB mount

Delivery form
Individual components in units for self-assembly

Scope of delivery

Front bezel	1 pc
Assembly kit, type A (knurled screw and plastic sleeve)	1 pc

Material
Aluminum 2.5 mm, anodized, cutting edges raw

Ordering table

H	W2	Order no.
3 U	56 HP	79 24 03 00

ACCESSORIES

// Assembly components

Ordering table

Usage		Description	Version Material	Standard	Series 83	Series 84	Order no.	PU
Mounting Z-rails, perforated rails		Cross-recessed pan head screw	M2.5 x 8 mm Steel nickel-plated	DIN 7985	●	●	**79 91 08 00**	1 PU (100 pcs)
Mounting card guide		Cross-recessed countersunk head screw	M2.5 x 6 mm Steel zinc-plated	WN 1413	●	●	**79 51 50 48**	1 PU (100 pcs)
		Cross-recessed pan head screw	M2.5 x 12 mm Steel nickel-plated	DIN 7985	●	●	**79 91 13 00**	1 PU (100 pcs)
		Hexagon nut	M2.5 Steel nickel-plated	DIN 934	●	●	**79 91 07 00**	1 PU (100 pcs)
Mounting card guide, thread-forming		Cross-recessed pan head screw	KA 3.0 x 12 mm Steel zinc-plated	PT®	●	●	**79 51 50 47**	1 PU (100 pcs)
Mounting tilt feet		Cross-recessed pan head screw	M3 x 6 mm Steel nickel-plated	DIN 7985	●	●	**79 91 40 00**	1 PU (100 pcs)
		Square nut	M3/SW5 Steel nickel-plated	similar to DIN 562	●	●	**79 91 54 00**	1 PU (100 pcs)
Mounting top/bottom cover		Cross-recessed raised countersunk head screw	M4 x 8 mm Steel nickel-plated	DIN 966	●		**79 91 42 00**	1 PU (100 pcs)
		Square nut with nut holder	M4 / SW7 Steel zinc--plated PPR clear	DIN562	●	●	**79 91 44 00**	1 PU (100 pcs)
Mounting front panel		Cross-recessed raised countersunk head screw	M4 x 10 mm Steel nickel-plated	DIN 966	●		**79 91 06 00**	1 PU (100 pcs)

Ordering table

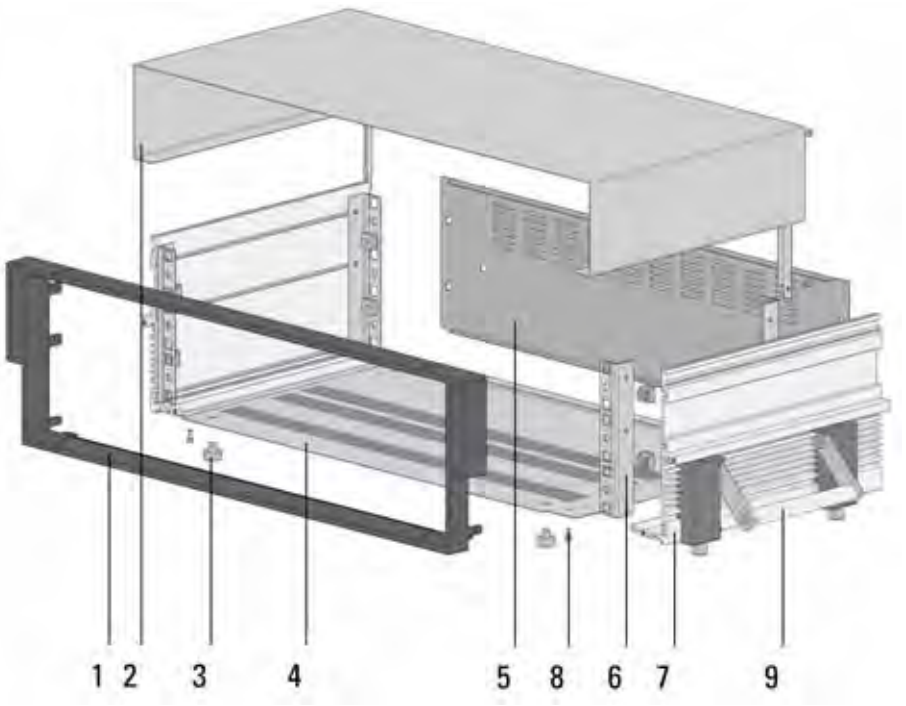
Usage		Description	Version Material	Standard	Series 83	Series 84	Order no.	PU
Mounting rear panel		Cross-recessed pan head screw	M4 x 10 mm Steel nickel-plated	DIN 7985	●	●	**79 91 33 00**	1 PU (100 pcs)
Mounting front/rear panel		Cross-recessed countersunk head screw	M4 x 12 mm Steel nickel-plated	DIN 965		●	**79 91 48 00**	1 PU (100 pcs)
Mounting front/rear rails		Cross-recessed pan head screw, self-locking	M4 x 12 mm Steel nickel-plated	similar to DIN 7985	●	●	**79 91 01 00**	1 PU (100 pcs)
Mounting carrying/support handle		Cross-recessed pan head screw	M4 x 10 mm Steel nickel-plated	DIN 7985		●	**79 91 33 00**	1 PU (100 pcs)
		Cross-recessed pan head screw	M5 x 12 mm Steel nickel-plated	DIN 7985	●		**79 91 32 00**	1 PU (100 pcs)

Basic
19" Desktop case

#01 CONTENT
CASES

19" Desktop cases

GENERAL INFORMATION



// Application

POLYRACK desktop case for mounting 19" sub-racks or non-standard components.

// Configuration Example

The diagram shows the configuration of a desk-top case using the Basic Series as an example.

1 Bezel
2 Top cover
3 Plug-in foot
4 Bottom cover with ventilation slits
5 Rear panel*
6 19" mounting bracket
7 Side extrusion
8 Assembly hardware
9 Carrying/support handle*

Parts marked with * are not included in the scope of delivery of the basic unit.

// Notes on standards, units of measurement and mounting/overall dimensions

Inner dimensions
– IEC 60297-3-102
– IEC 60297-2

Unit of height U
Measurement unit for height in 19" rack systems
1 U = 44.45 mm

Increment unit HP
Measurement unit for width in 19" rack systems
1 HP = 5.08 mm

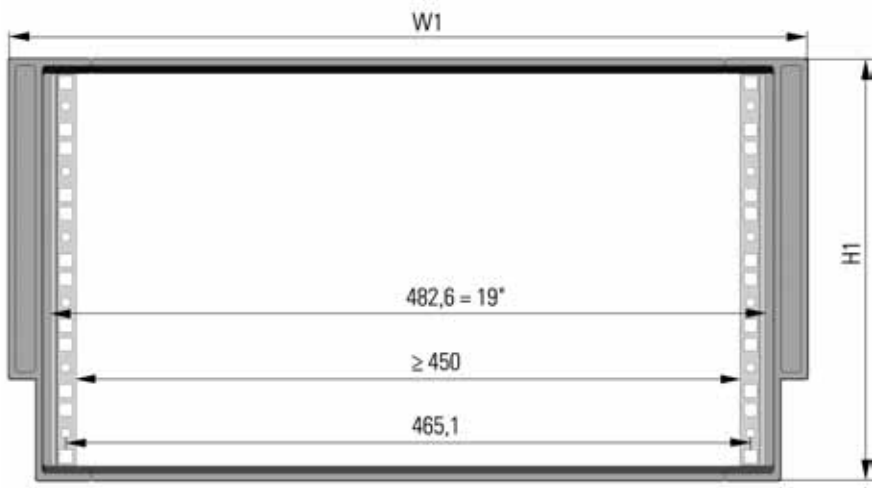
Dimensions specified in ordering tables
The dimensions, especially those given in U and HP, are specified in relation to the application:

Height H = (n (U) x 44.45 mm) - 0.8 mm

Usable width W = (n (HP) x 5.08 mm)

The depth D (in mm) indicates the total depth of the case without handles, feet, etc.

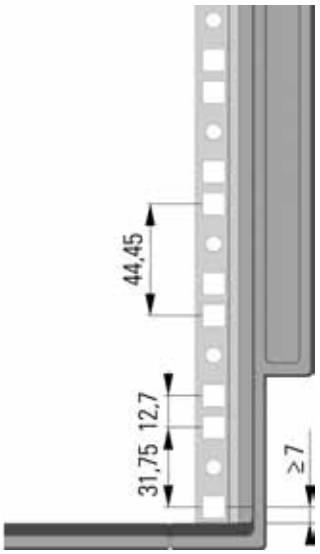
// Dimension tiagrams 19" standard IEC 60297-2



Front view

The case mounting matrix is divided into height units (U) of 44.45 mm.
The number of height units in a case (e.g. 6 U) corresponds to the number of usable units (e.g. 6 x 1 U or 2 x 3 U) in relation to the height (U) of a case.

Screws and cage nuts with M6 thread are typically used for mounting 19" subracks and components. The cage nuts are clipped into the square cut-outs.



Detailed view of 19" matrix

The square mounting holes conform to the perforation matrix of 19" panels or subracks.

// Manufacturing tolerances

All parts are subject to POLYRACK's factory specifications, whereby:

Extrusion specifications comply with
DIN EN 12020-1

Punched parts comply with
DIN ISO 6930-1/6930-2 and DIN 6932

GENERAL INFORMATION

// Overview of series

Series	Surface		EMC shielding concept	Features
	Alodined	Powder-coated		
Basic	–	•	•	Customized design with CI design elements; Recessed mounting possible
Series 86	–	•	–	Stable, self-supporting frame construction

// Custom designs

Custom designs are possible in various heights*, widths* and depths and with individual processing to your specifications.
*There may be constraints, depending on the series.

// Individual assembly

Components are available for your individual assembly.

// Assembly service

Our assembly service is available to you on request.

// Supplementary products

#01 19" SUBRACKS
⇨ Subracks

#01 FRONT PANELS AND PLUG-IN MODULES
⇨ 19" Panels

#01 SYSTEMS TECHNOLOGY
⇨ Packaging systems and fan trays

// Questions?

We are happy to help you. Please contact us.

HOTLINE Europe
+49.(0)800-POLYRACK (+49.(0)800-76597225)
sales@polyrack.com

HOTLINE North America
+1.401.770.1500
polyrack_us@polyrack.com

Basic
19" Desktop case

Basic

Product information

Designed to accommodate 19" subracks or custom electronics, the "Basic" program wins you over with its distinctive design based on contrasting surfaces at the front and striking contours on the side and rear panels. The easy-to-remove cover enables quick access to your electronics. To protect the electronics, there is a version available with a lockable front door. For mobile applications, there is an optional carrying handle that enables the case to be carried close to be body, thus requiring a minimum of effort. The cases are suitable for use under EMC criteria and can be upgraded as required with additional shielding material. Heat is dissipated via ventilation slits in the bottom cover and the rear panel.

Standards
– Mounting dimensions in accordance with IEC 60297-2
– IP20 rating in accordance with IEC 60529

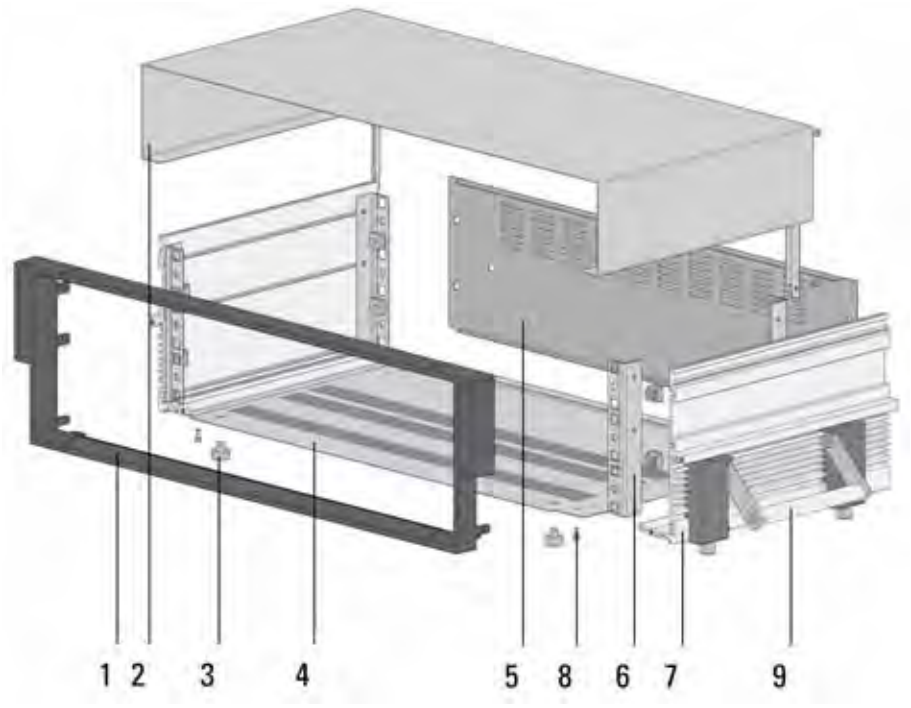
Notes
– No visible screws
– Grounding tabs in top/bottom covers; Grounding tabs for side extrusions included in the assembly kit

Overview

Basic units	H in U					W in HP			D1 in mm			Page
	2	3	4	6	7	42	63	84	275	395	505	
- Standard	●					●		●	●	●	–	CAS 03.11
		●				●	●	●	●	●	●	CAS 03.11
			●					●	–	●	●	CAS 03.11
				●				●	●	●	●	CAS 03.11
					●			●	–	●	●	CAS 03.11
- With front door	●					●			●	●	–	CAS 03.11
		●				●	●	●	●	●	●	CAS 03.11
			●					●	–	●	●	CAS 03.11
				●				●	●	●	●	CAS 03.11
					●			●	–	●	●	CAS 03.11

Basic

// Product Information



Configuration example

The diagram shows the configuration of a 19" Basic Series desktop case without front door

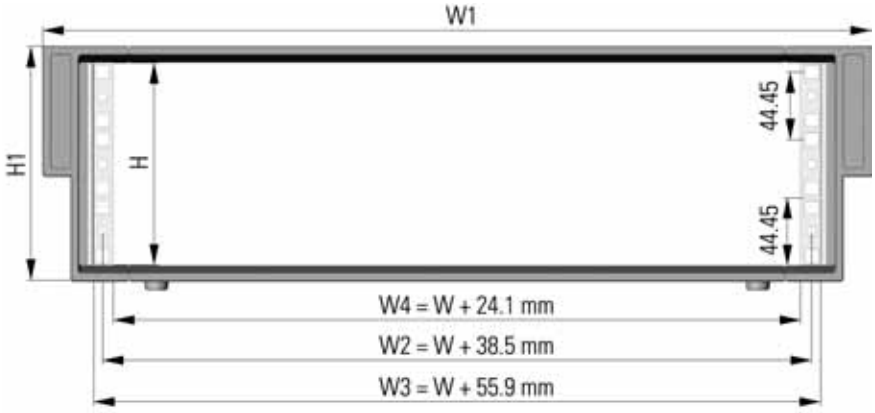
1 Bezel
2 Top cover
3 Plug-in foot
4 Bottom cover with ventilation slits
5 Rear panel*
6 19" mounting bracket
7 Side extrusion
8 Assembly hardware
9 Carrying/support handle*

Parts marked with * are not included in the scope of delivery of the basic unit, i. e. must be ordered separately.

Surface finishing

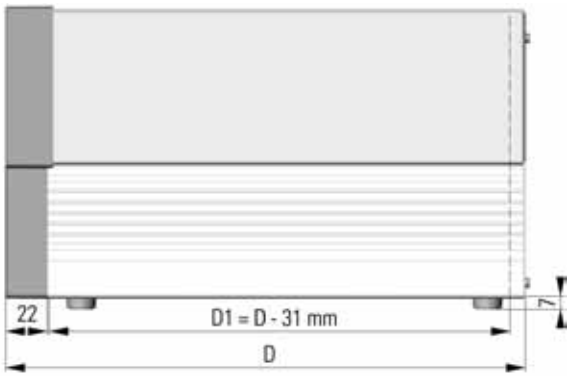
– Bezels die-cast
– Side extrusion made of aluminum, powder-coated RAL 7001 (silver gray)
– Top cover made of hot-dip galvanized sheet steel, powder-coated RAL 7035 (light gray)
– Base made of stainless steel 1.4016, glossy
– 19" mounting brackets made of hot-dip galvanized sheet steel, cutting edges raw

Dimension diagrams



Front view

* W2 = inner mounting dimension



Side view

Dimension diagrams of side extrusion

Cross-section of side extrusion 1 U, 2 U, 3 U

* M3 thread
(Maximum tightening torque 0.75 Nm)

Basic

Basic units

The Basic Series cases are available in two basic versions. The standard version is designed as a 19" desktop case. The version with the lockable front door safeguards the electronics against unauthorized access.

Features of the basic units

Standard

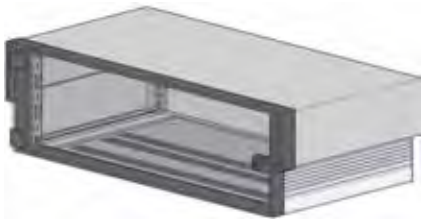
With front door

Basic case, standard

Scope of delivery		Delivery form
Bezel	1 pc	As assembly kit
Side extrusion	2 pcs	
Adapter extrusion only 6/7 U	2 pcs	
Top cover	1 pc	
Bottom cover with ventilation slits	1 pc	
19" mounting bracket	2 pcs	
Plug-in foot ø15 x 7 mm	4 pcs	
Assembly kit	1 pc	

Ordering table

H	W	H1 in mm	W1 in mm	D = 275 mm	D = 395 mm	D = 505 mm
2 U	42 HP	110.0	331	21 10 00 01	21 10 00 04	–
2 U	84 HP	110.0	544	21 10 00 03	21 10 00 06	–
3 U	42 HP	154.5	331	21 10 00 07	21 10 00 10	21 10 00 13
3 U	63 HP	154.5	437	21 10 00 08	21 10 00 11	21 10 00 14
3 U	84 HP	154.5	544	21 10 00 09	21 10 00 12	21 10 00 15
4 U	84 HP	199.0	544	–	21 10 00 21	21 10 00 24
6 U	84 HP	288.0	544	21 10 00 27	21 10 00 30	21 10 00 33
7 U	84 HP	332.5	544	–	21 10 00 39	21 10 00 42



Basic case with front door

Scope of delivery		Delivery form
Bezel with Front door	1 pc	As assembly kit
Side extrusion	2 pcs	
Adapter extrusion only 6/7 U	2 pcs	
Top cover	1 pc	
Bottom cover with ventilation slits	1 pc	
19" mounting bracket	2 pcs	
Plug-in foot ø15 x 7 mm	4 pcs	
Assembly kit	1 pc	

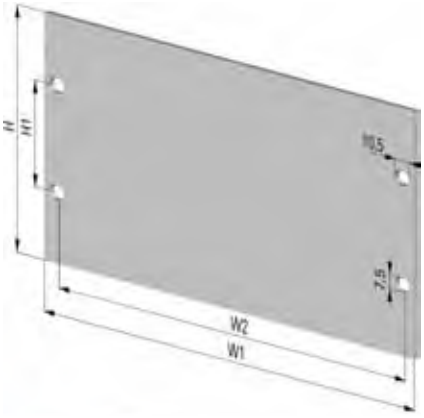
Ordering table

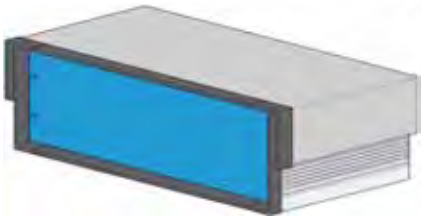
H	W	H1 in mm	W1 in mm	D = 275 mm	D = 395 mm	D = 505 mm
2 U	42 HP	110.0	331	21 10 00 50	21 10 00 53	–
2 U	84 HP	110.0	544	21 10 00 52	21 10 00 55	–
3 U	42 HP	154.5	331	21 10 00 59	21 10 00 62	21 10 00 65
3 U	63 HP	154.5	437	21 10 00 60	21 10 00 63	21 10 00 66
3 U	84 HP	154.5	544	21 10 00 61	21 10 00 64	21 10 00 67
4 U	84 HP	199.0	544	–	21 10 00 73	21 10 00 76
6 U	84 HP	288.0	544	21 10 00 79	21 10 00 82	21 10 00 85
7 U	84 HP	332.5	544	–	21 10 00 91	21 10 00 94

Basic

// Single components

19" panels, rear panel





19" panels – Basic

Can be used as front or rear panels

Material
Aluminum 3 mm, anodized/cutting edges raw, EMC version: aluminum 3 mm, front anodized/ rear alodined

Mounting dimensions (mm)

W	W1	W2
42 HP	269.2	251.6
63 HP	375.9	358.3
84 HP	482.6	465.0

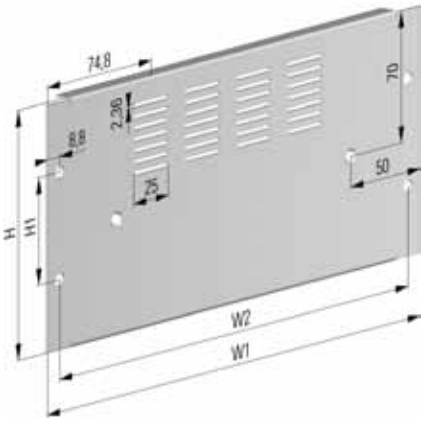
Scope of delivery
19" panel 1 pc

Delivery form
Individual components in units for self-assembly

Note
– Assembly hardware must be ordered separately

Ordering table

H	H in mm	H1 in mm	Version	W = 42 HP	W = 63 HP	W = 84 HP
2 U	88.1	76.2	Anodized	99 02 42 16	99 02 63 16	10 20 13 00
3 U	132.5	57.15	Anodized	99 03 42 16	99 03 63 16	10 30 13 00
4 U	177.0	101.6	Anodized	–	–	10 40 13 00
6 U	265.9	190.5	Anodized	–	–	10 60 13 00
7 U	310.3	234.95	Anodized	–	–	10 70 13 00
3 U	88.1	76.2	Anodized/alodined	21 10 02 30	21 10 02 31	21 10 02 32
3 U	132.5	57.15	Anodized/alodined	21 10 02 33	21 10 02 34	21 10 02 35
4 U	177.0	101.6	Anodized/alodined	–	–	21 10 02 38
6 U	265.9	190.5	Anodized/alodined	–	–	21 10 02 44
7 U	310.3	234.95	Anodized/alodined	–	–	21 10 02 47



Rear panel – Basic

With ventilation slits for better heat dissipation

Material
Stainless steel 1.4016 IIID (glossy), 1 mm

Mounting dimensions (mm)

	W1	W2
42 HP	269.2	251.6
63 HP	375.9	358.3
84 HP	482.6	465.0

Scope of delivery
Rear panel 1 pc

Delivery form
Individual components in units for self-assembly

Notes
– Assembly hardware must be ordered separately
– With holes for grounding screw M4
– Shielding material must be ordered separately

Ordering table

H	H in mm	H1 in mm	W = 42 HP	W = 63 HP	W = 84 HP
2 U	88.1	76.2	21 10 01 01	21 10 01 02	21 10 01 03
3 U	132.5	57.15	21 10 01 04	21 10 01 05	21 10 01 06
4 U	177.0	101.6	–	–	21 10 01 09
6 U	265.9	190.5	21 10 01 13	21 10 01 14	21 10 01 15
7 U	310.3	234.95	–	–	21 10 01 18

Conversion kit for recessed mounting, CI design element

Conversion kit for recessed mounting – Basic

19" subracks and 19" front panels can be assembled with a recess of 60 mm.

Material
Stainless steel 1.4016 IIID (glossy), 1.25 mm

Scope of delivery

Cover plate, top	1 pc
Cover plate, bottom	1 pc
19" mounting bracket	2 pcs
Distance plate	2 pcs
Assembly kit	1 pc

Delivery form
As kit for self-assembly

Ordering table

H	W = 42 HP	W = 63 HP	W = 84 HP
3 U	–	–	21 10 03 54
6 U	–	–	21 10 03 55

CI design element – Basic

Enables customized design of front bezel. Company logo or company name can also be imprinted.

Material
Aluminum 0.3 mm, anodized and powder-coated in RAL 5022 (night blue) or RAL 6027 (light green).
Self-adhesive film 0.22 mm

Scope of delivery

CI-design element	1 PU (10 pcs)

Delivery form
In units for self-assembly

Note
– Other colors and inscription on request

Ordering table

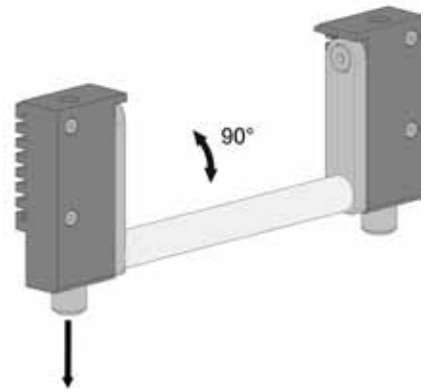
H	Anodized	RAL 5022	RAL 6027
2 U	21 10 04 00	21 10 04 01	21 10 04 02
3 U	21 10 04 04	21 10 04 05	21 10 04 06
4 U	21 10 04 08	21 10 04 09	21 10 04 10
6 U	21 10 04 12	21 10 04 13	21 10 04 14
7 U	21 10 04 16	21 10 04 17	21 10 04 18

Basic

// Single components

Carrying/support handle

To convert the Basic desktop cases for mobile use



Carrying/support handle – Basic

Integrated into case

Material
Aluminum extrusion, anodized
Handle/foot screws: Steel, nickel-plated

Scope of delivery

Foot, left	2 pcs
Foot, right	2 pcs
Handle bar	2 pcs
Handle mounting	4 pcs
Handle screw M5 x 10 mm	4 pcs
Foot screw, front M6 x 65 mm	2 pcs
Foot screw, rear M6 x 16 mm	2 pcs
Spring plunger	4 pcs
Glass support, off-white	4 pcs
Assembly kit	1 pc

Delivery form
As kit for self-assembly

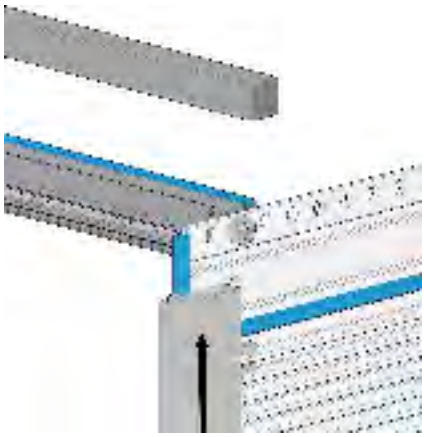
Notes
– Max. load 30 kg
– Tilt angle continuously adjustable up to 5°
– For case sizes 4, 6 and 7 U please use handle 3 U

Ordering table

H	D = 275 mm	D = 395 mm	D = 505 mm
2 U	21 10 04 30	21 10 04 32	21 10 04 34
3 U	21 10 04 31	21 10 04 33	21 10 04 35

EMC shielding material

To ensure that electronic products function satisfactorily in an electromagnetic environment i. e. that the electromagnetic compatibility (EMC) of the products is guaranteed, shielding material is required, dependent on the electronics and on the ambient conditions.
EMC shielding materials are used to establish contact with mechanical components and thus protect plug-in units and electronics against radio frequency interference.



EMC fabric shielding material – Basic

The EMC shielding material is used to establish contact between
– Side extrusion and top/bottom covers
– Top cover and bezel
The gasketing material can be used with all case sizes.

Material
Cord gasket ø 1.4 mm:
Silicone with silver-coated particles, 65 Shore
Threaded fabric 3 x 3 mm:
Conductive fabric, CuNi-coated

Scope of delivery
Cord gasket ø 1.4 mm:
by length (L = 1000 mm) 1 pc
Threaded fabric 3 x 3 mm
by length (L = 2500 mm) 1 pc

Delivery form
In units for self-assembly

Notes
– Cord gasket ø 1.4 mm:
Thermal resistance: -50°C to +160°C
– Threaded fabric 3 x 3 mm:
single sided adhesive (peel-off film)
Thermal resistance: -40°C to +200°C

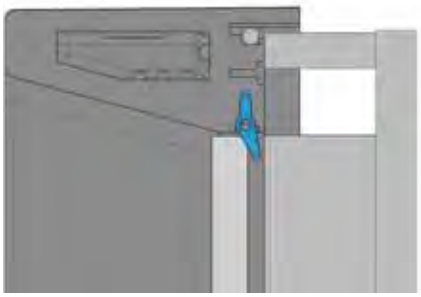
Maximum requirement

D	W	Cord gasket ø 1.4 mm	Threaded fabric 3 x 3 mm:
275 mm			4 x 250 mm
395 mm			4 x 370 mm
505 mm			4 x 480 mm
	42 HP	2 x 215 mm	
	63 HP	2 x 320 mm	
	84 HP	2 x 425 mm	

Ordering table

Order no.
21 10 04 50

// Single components



EMC shielding material for horizontal front mount – Basic

The EMC shielding material is used to establish contact between
– Extrusion and front panel or subrack
The gasketing material can be used with all case sizes.

Material
Silicone with silver-coated particles, 55 Shore

Scope of delivery
by length (L = 1000 mm) 1 pc

Delivery form
In units for self-assembly

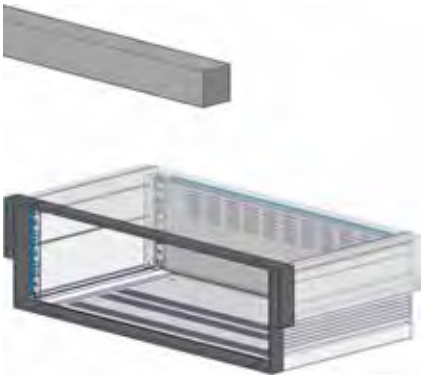
Note
– Thermal resistance: -55°C to +160°C

Maximum requirement

W	Gasket
42 HP	2 x 215 mm
63 HP	2 x 320 mm
84 HP	2 x 425 mm

Ordering table

Order no.
21 10 04 51



EMC shielding material for vertical front mount or for rear panels – Basic

The EMC shielding material is used to establish contact between
– 19" mounting bracket and front panel
– Rear panel and top/bottom covers
The gasketing material can be used with all case sizes.

Material
Conductive fabric, CuNi-coated

Scope of delivery
by length (L = 2500 mm) 1 pc

Delivery form
In units for self-assembly

Notes
– Single sided adhesive (peel-off film)
– Thermal resistance: -40°C to +200°C
– Fire resistance rating: UL 94V0

Maximum requirement

H	Threaded fabric 3 x 3 mm
2 U	4 x 50 mm
3 U	4 x 50 mm
4 U	4 x 90 mm
6 U	4 x 180 mm
7 U	4 x 225 mm

W	Threaded fabric 3 x 3 mm
42 HP	2 x 215 mm
63 HP	2 x 320 mm
84 HP	2 x 425 mm

Ordering table

Order no.
21 10 04 52

Standard assembly kit for rear panel – Basic

The assembly kit is required for standard mounting of 19" panels and rear panels on the Basic case.

Note
– Includes grounding kit

Scope of delivery

Usage	Description	Version/material	Standard	Quantity
Mounting 19" dummy panels and rear panels to case	Cross-recessed pan head screw	M6 x 16 mm Steel nickel-plated	DIN 7985	4 pcs
Mounting 19" dummy panels and rear panels to case	Plastic washer, black	PP d = 6.8 mm		4 pcs
For grounding	Countersunk head screw	M4 x 8 mm Steel nickel-plated	DIN 965	1 pc
For grounding	Hexagon nut	M4 x 8 mm Steel zinc-plated	DIN 439	1 pc
For grounding	Toothed lock washer	Shape A Steel zinc-plated	DIN 6797	2 pcs
For grounding	Tab connector	For M4 6.3 x 0.8 mm 90° Brass zinc-plated		1 pc

Ordering table

Order no.
21 10 04 61

// Single components

Mounting feet assembly kit for rear panel – Basic

In mobile use, the spacer screws mounted on the rear panel serve as mounting feet or as spacers between the case and the resting surface. This way they protect any protruding connection elements from damage (e.g. anti-kink protection for cables). The assembly kit is for mounting the spacer screws on the rear panel and the rear panel to the case.

Note
– Includes grounding kit

Scope of delivery

	Usage	Description	Version/material	Standard	Quantity
	Mounting 19" dummy panels and rear panels to case Distance 12 mm	Distance screw	M6 x 16 mm Steel bright nickel-plated		4 pcs
	Glass supports for distance screw	Glass supports, off-white	4.2/12 Soft PVC transparent		4 pcs
	For grounding	Countersunk head screw	M4 x 8 mm Steel nickel-plated	DIN 965	1 pc
	For grounding	Hexagon nut	M4 x 8 mm Steel zinc-plated	DIN 439	1 pc
	For grounding	Toothed lock washer	Shape A Steel zinc-plated	DIN 6797	2 pcs
	For grounding	Tab connector	For M4 6.3 x 0.8 mm 90° Brass zinc-plated		1 pc

Ordering table

Order no.
21 10 04 60

Basic
19" Desktop case

Series 86
19" Desktop case

Series 86

Product information

With their rigid frame construction, the Series 86 cases for mounting 19" subracks or custom electronics feature a rugged, self-supporting construction. The die-cast frame parts are only available in 84 HP. Heat is dissipated via ventilation slits in the bottom cover.

Standards

– Mounting dimensions in accordance with IEC 60297-2
– IP20 rating in accordance with IEC 60529

Notes

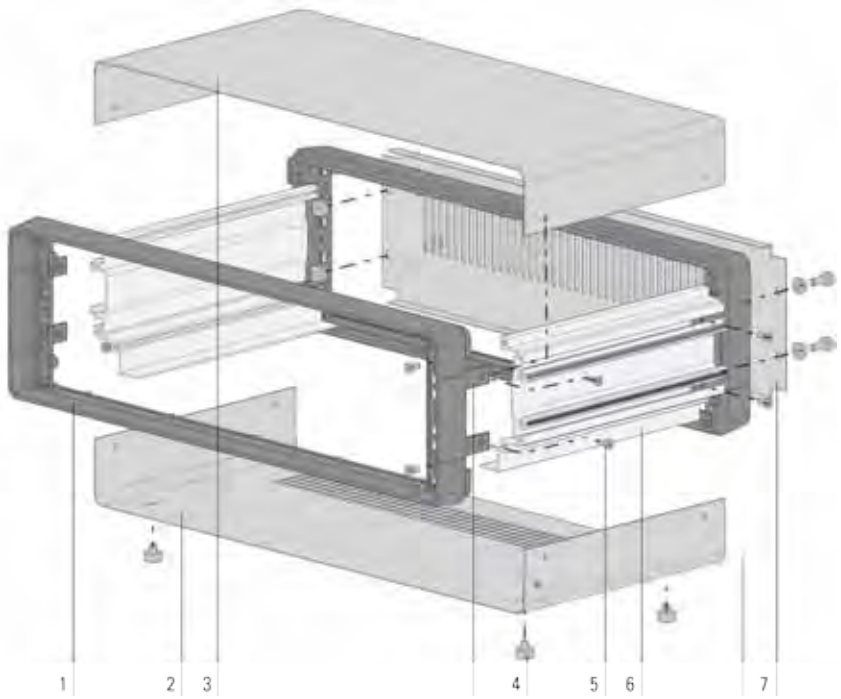
– The case is of limited suitability when EMC criteria apply
– Available either with handle grips incorporated in the side extrusions or folding handles incorporated in the splitting plates
– No grounding tabs, but these can be mounted individually

Overview

Basic units	H in U						W in HP	D in mm			Page
	3	4	5	6	9	12	84	300	400	500	
- With handle grips	●						●	●	●	●	CAS 03.25
		●	●				●	●	–	–	CAS 03.25
				●	●	●	●	–	●	●	CAS 03.25
- With folding handles (as of 6 U)				●	●	●	●	–	●	●	CAS 03.25

Series 86

// Product information



Configuration example

The diagram shows the configuration of a 19" Basic Series desktop case with handle grips.

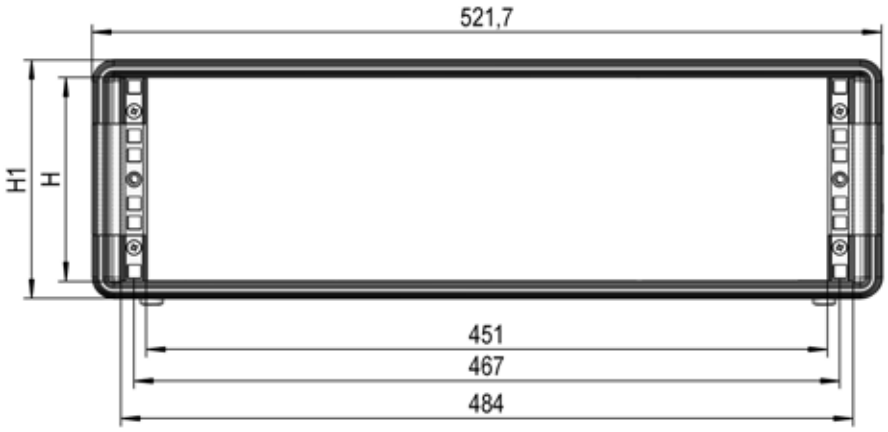
1 Bezel
2 Bottom cover with ventilation slits
3 Top cover
4 Plug-in foot
5 Assembly hardware
6 Side extrusion
7 Rear panel*

Parts marked with * are not included in the scope of delivery of the basic unit, i. e. must be ordered separately.

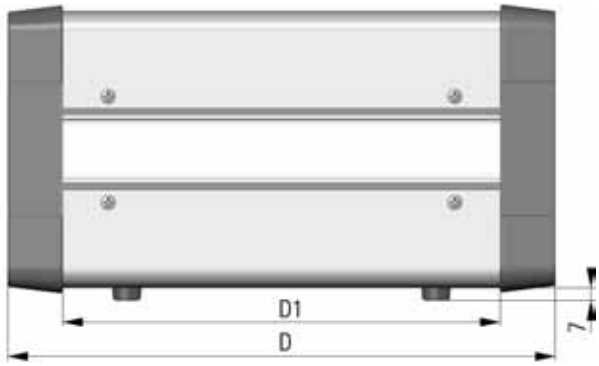
Surface finishing

– Frame made of aluminum extrusions (horizontal) and die-cast parts, powder-coated RAL 7038 (agate gray)
– Side extrusion with integrated slide rail made of aluminum, powder-coated RAL 7038 (agate gray)
– Top and bottom covers made of hot-dip galvanized sheet steel, 1 mm, powder-coated RAL 9018 (papyrus white)

Dimension diagrams



Front view



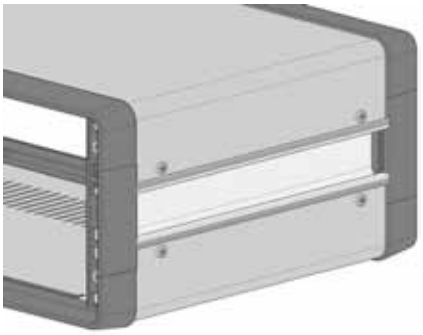
Side view

Series 86

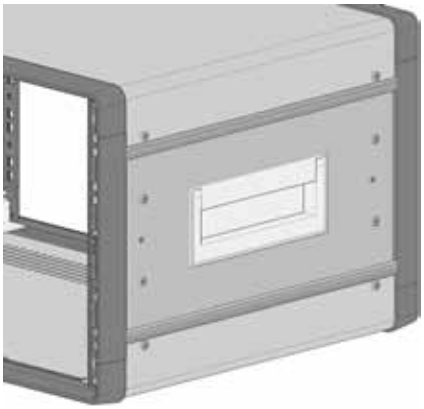
Basic units

Series 86 cases are available in 2 basic versions – as 19" desktop cases with handle grips integrated into the side extrusions or with folding handles.

Features of the basic units



With handle grips



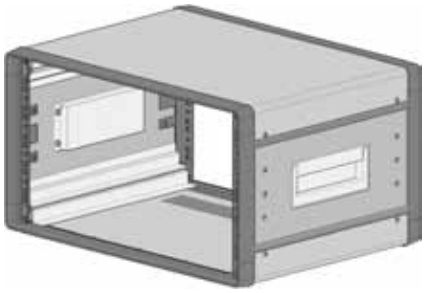
With folding handles

Series 86 case with handle grips

Scope of delivery		Delivery form
Bezel	2 pcs	Partially assembled
Side extrusion	2 pcs	
(from 5 U onward)	4 pcs	
Splitting plate (from 5 U onward)	2 pcs	
Top cover	1 pc	
Bottom cover with ventilation slits	1 pc	
Plug-in foot ø15 x 7 mm	4 pcs	
Assembly kit	1 pc	

Ordering table

H	W	H1 in mm	D = 300 mm	D = 400 mm	D = 500 mm
3 U	84 HP	150	86 03 01 00	86 03 02 00	86 03 03 00
4 U	84 HP	200	86 04 01 00	–	–
5 U	84 HP	245	86 05 01 00	–	–
6 U	84 HP	289	86 06 01 00	86 06 02 00	86 06 03 00
9 U	84 HP	423	–	86 09 02 00	86 09 03 00
12 U	84 HP	556	–	86 12 02 00	86 12 03 00



Series 86 case with folding handles

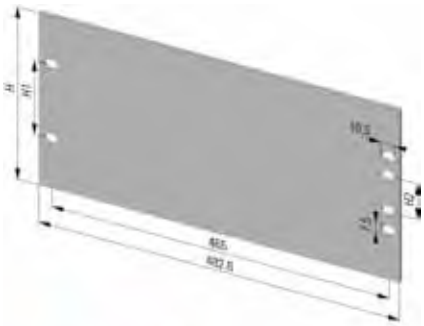
Scope of delivery		Delivery form
Bezel	2 pcs	Partially assembled
Side extrusion	4 pcs	
Splitting plate	2 pcs	
Top cover	1 pc	
Bottom cover with ventilation slits	1 pc	
Folding handle	2 pcs	
Plug-in foot ø15 x 7 mm	4 pcs	
Assembly kit	1 pc	

Ordering table

H	W	H1 in mm	D = 300 mm	D = 400 mm	D = 500 mm
6 U	84 HP	289	–	86 06 12 00	86 06 13 00
9 U	84 HP	423	–	86 09 12 00	86 09 13 00
12 U	84 HP	556	–	86 12 12 00	86 12 13 00

// Single components

19" panels, rear panel



19" panels

Can be used as front or rear panels

Material
Aluminum 3 mm, anodized/cutting edges raw

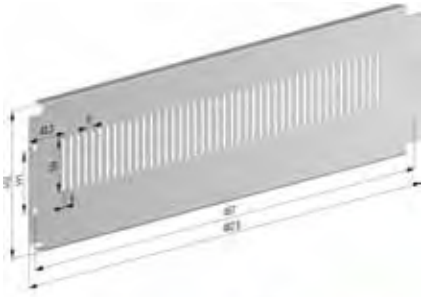
Scope of delivery
19" panel 1 pc

Delivery form
Individual components in units for self-assembly

Note
– Assembly hardware must be ordered separately

Ordering table

H	H in mm	H1 in mm	H2 in mm	W = 84 HP
3 U	132.5	57.15	–	**10 30 13 00**
4 U	177.0	101.6	–	**10 40 13 00**
5 U	221.4	146.0	–	**10 50 13 00**
6 U	265.9	190.5	–	**10 60 13 00**
9 U	399.2	323.9	120.6	**10 90 13 00**
12 U	532.6	457.2	190.5	**10 12 13 00**



Rear panel – Series 86

With ventilation slits for better heat dissipation

Material
Sheet steel, hot-dip galvanized, 1 mm, powder-coated RAL 9018 (papyrus white), fine structure

Scope of delivery
Rear panel 1 pc

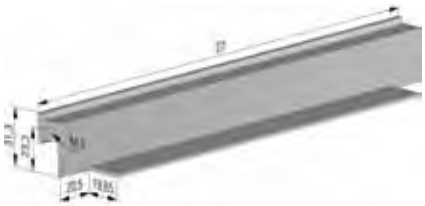
Delivery form
In units for self-assembly

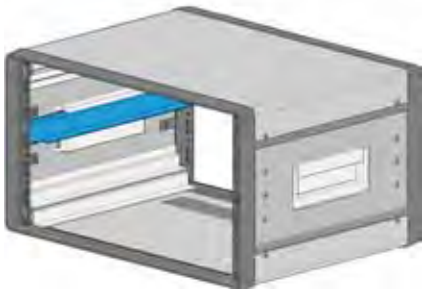
Note
– Assembly hardware is contained in Series 86 case assembly kit

Ordering table

H	H2 in mm	H1 in mm	H3 in mm	W = 84 HP
3 U	132.3	57.15	–	**86 01 20 01**
4 U	176.8	101.6	–	**86 01 20 02**
5 U	221.2	146.0	–	**86 01 20 03**
6 U	265.7	190.5	–	**86 01 20 04**
9 U	399.0	323.9	120.6	**86 01 20 06**
12 U	532.4	457.2	190.5	**86 01 20 07**

Slide rails





Slide rails – Series 86

Used for weight relief when heavy plug-in units are incorporated.

Material
Aluminum extrusion, raw

Scope of delivery

Slide rail	1 pc
Assembly kit	1 pc

Delivery form
In units for self-assembly

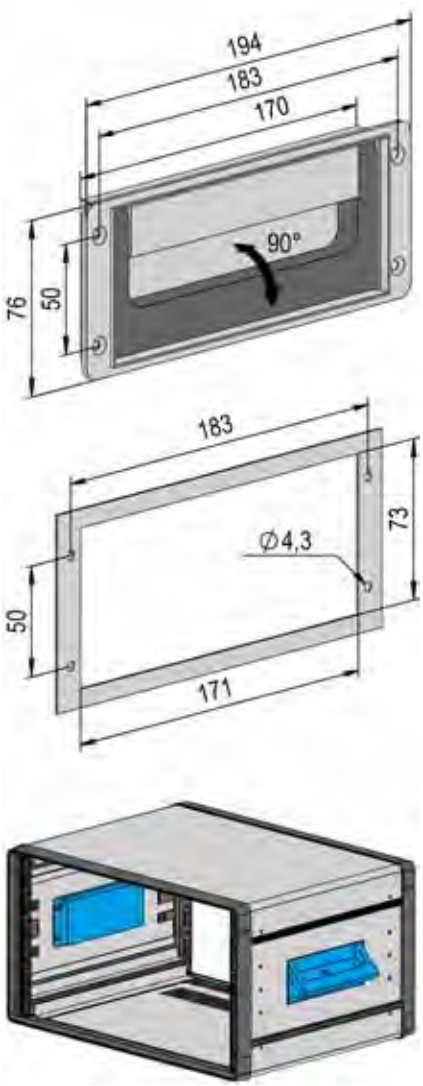
Note
– When slide rails are installed, the mounting height is reduced by 2 mm, therefore subracks require stepped side plates

Ordering table

D in mm	D1 in mm	Order no.
300	256.5	**79 71 31 00**
400	356.5	**79 71 32 00**
500	456.5	**79 71 33 00**

// Single components

Folding handle



Folding handle – Series 86

Snap locks in folded-in and folded-out position

Material
Tray and handle made of die-cast aluminum, coated "silver gray"

Mounting cutout

Scope of delivery
Folding handle 1 pc

Delivery form
Tray/handle preassembled

Notes
– Max. load 50 kg
– 4 M4 countersunk screws are required to mount the tray, these must be ordered separately
– With the same case cut-out, the handle can be mounted in front of or behind the case wall

Ordering table

H	Order no.
As of 6 U	80 10 00 00

Series 86
19" Desktop case

Accessories
Various card guides and handles

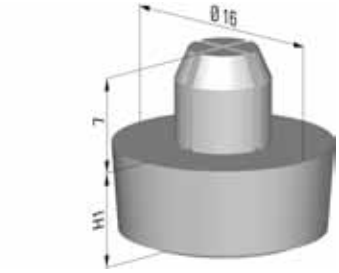
ACCESSORIES

// Content

ACCESSORIES

// Chassis feet

Chassis feet



Plug-in foot – Basic/Series 86

Standard foot for Basic Series and Series 86

Material
PS, black

Scope of delivery
Foot 1 PU (20 pcs)

Delivery form
In units for self-assembly

Notes
– Easy to assemble by pressing in the core flush Assembly hole: ø 7 mm + 0.2 mm Material thickness: 1.5 - 3 mm
– With anti-slip insert

Ordering table

H1 in mm	Order no.
6.5	79 50 20 00
11.5	79 50 21 00

Tilt foot – Series 86

Can be used as an alternative to the plug-in feet that are supplied as standard; can be mounted later

Material
Case/tilt feet ABS
Anti-slip insert NBR

Scope of delivery
Foot, rear 2 pcs
Tilt foot, front 2 pcs
Assembly kit 1 pc

Delivery form
As kit for self-assembly

Notes
– Max. load 5 kg
– Tilt angle of case 10°
– With anti-slip inserts

Ordering table

Color	Order no.
Black	79 50 30 00
Gray	79 50 31 00

Ordering table

Usage		Description	Version Material	Standard	Basic	Series 86	Order no.	PU
Mounting front/rear panels to the case		Pan head screw with Torx T30	M6 x 16 mm stainless steel	ISO 14583	●	●	**79 91 85 00**	1 PU (100 pcs)
		Cross-recessed pan head screw	M6 x 16 mm Steel nickel-plated	DIN 7985	●	●	**79 91 23 00**	1 PU (100 pcs)
		Plastic washer	d = 6.8 mm PP black		●	●	**79 91 30 00**	1 PU (100 pcs)
		Cage nut	M6 Steel zinc-plated		●	●	**79 91 31 00**	1 PU (100 pcs)
Mounting tilt feet		Cross-recessed pan head screw	M3 x 6 mm Steel nickel-plated	DIN 7985		●	**79 91 40 00**	1 PU (100 pcs)
		Square nut	M3/SW5 Steel nickel-plated	similar to DIN 562		●	**79 91 54 00**	1 PU (100 pcs)

SmarTEC
Small equipment cases

#01 CONTENT
CASES

Small equipment cases

GENERAL INFORMATION

// Overview

SmarTEC/Sequence
Small equipment cases in extrusion construction with front/rear bezel for horizontal mounting of Eurocards, typically in single or double Eurocard formats.

The illustration shows a case from the SmarTEC Series.

Series 72
Small equipment cases in half-extrusion construction for horizontal mounting of Eurocards, typically in single or double Eurocard formats, and for mounting custom electronics.

Quarto/Series 73
Small equipment cases for mounting custom electronics. The stable extrusion construction and the modular concept, which permits flexible configuration of both length and width, opens up a wide variety of applications. The height dimensions are fixed dimensions.
Depending on the series, the cases can be configured to comply with up to IP54.

The illustration shows a case from the Quarto Series.

CasTEC
Small equipment case in die-cast aluminum accommodates custom electronics, particularly suitable for use in harsh, industrial environments (IP65 rating).

GENERAL INFORMATION

// Overview of series

Series	Surface			EMC	IP rating	Board formats		Individual	Features
	Anodized	Alodined	Powder-coated	Shielding concept		3 U	6 U	assembly	
SmarTEC	●	–	●	●	–	●	●	●	One-piece or two-piece extruded case Guide rails integrated in side extrusion
Sequence	●	–	–	●	–	●	●	●	One-piece extruded case Guide rails integrated in side extrusion
Series 72	●	–	●	–	–	●	●	●	Easy-to-remove top/bottom covers Cost-optimized
Quarto	●	–	–	●	●	–	–	●	Customizable in depth and width Can be configured up to IP54 Also available by the meter
Series 73	●	–	–	–	–	–	–	●	Customizable in depth and width Only available by the meter
CasTEC	–	–	–	●	●	–	–	●	Die-cast aluminum case For use outdoors (IP65)

// Custom designs

Custom designs are possible in various widths and depths and with individual processing to your specifications.

// Individual assembly

Components are available for your individual assembly.

// Assembly service

Our assembly service is available to you on request.

// Questions?

We are happy to help you. Please contact us.

HOTLINE Europe
+49.(0)800-POLYRACK (+49.(0)800-76597225)
sales@polyrack.com

HOTLINE North America
+1.401.770.1500
polyrack_us@polyrack.com

SmarTEC
Small equipment cases

SmarTEC

Product information

SmarTEC can be flexibly adapted to the specific application and requirements.
The cases are available both as a one-piece or a two-piece extrusion solution. A distinctive feature of the two-piece solution is the accessibility from above. At the same time it is not necessary to forgo the typical benefits of an extrusion solution - such as for example stability and design for quick assembly.
Both versions comply with EMC criteria.

Standards

– IP rating in accordance with IEC 60529
  Case with one-piece extrusion: IP54,
  Case with two-piece extrusion: IP43

Notes

– Cases that are 115 mm wide are suitable for Eurocards, cases that are 275 mm wide accept double Eurocards
– No grounding tabs, but these can be mounted individually

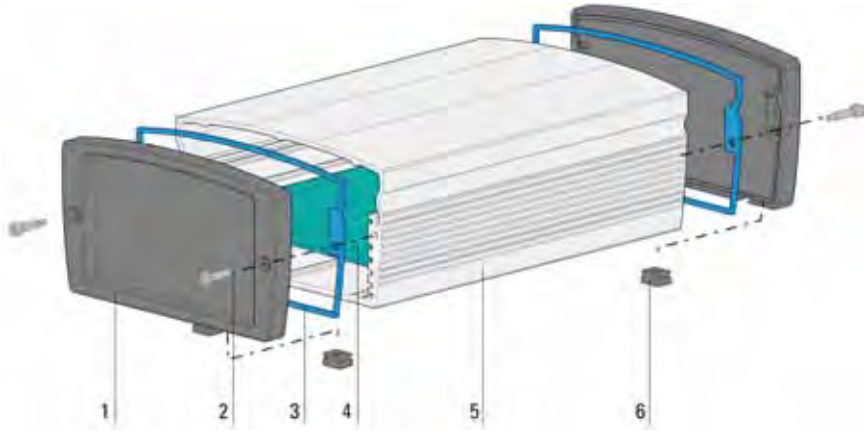
Overview

Basic units	H1 in mm			W1 in mm			D in mm			Page
	45	65	85	85	115	275	123	183	243	
- Extrusion, one-piece	●			●			●	–	–	CAS 04 .13
		●			●		–	●	–	CAS 04 .13
			●			●	–	–	●	CAS 04 .13
- Extrusion, two-piece		●			●		–	●	–	CAS 04 .13
			●			●	–	–	●	CAS 04 .13

// Product information

Configuration examples

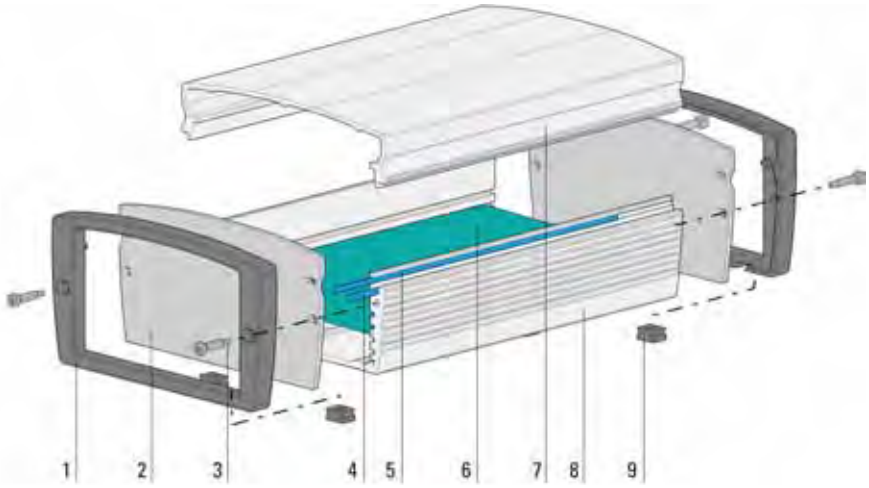
The diagram shows the configuration of a SmarTEC Series one-piece extruded case.



1 Front/rear bezel, closed
2 Assembly hardware
3 IP molded gasket
4 Printed circuit board*
5 Extruded case, one piece
6 Foot for insertion

Parts marked with * are not included in the scope of delivery of the basic unit, i. e. must be ordered separately.

The diagram shows the configuration of a SmarTEC Series two-piece extruded case.

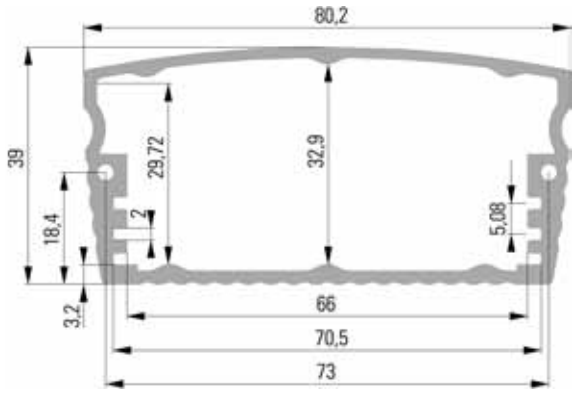


1 Front/rear bezel, open
2 Front/rear panel
3 Assembly hardware
4 IP cord gasket ø 2.5 mm
5 EMC shielding D, 1.5 x 2 mm
6 Printed circuit board*
7 Extruded case, top
8 Extruded case, bottom
9 Foot for insertion

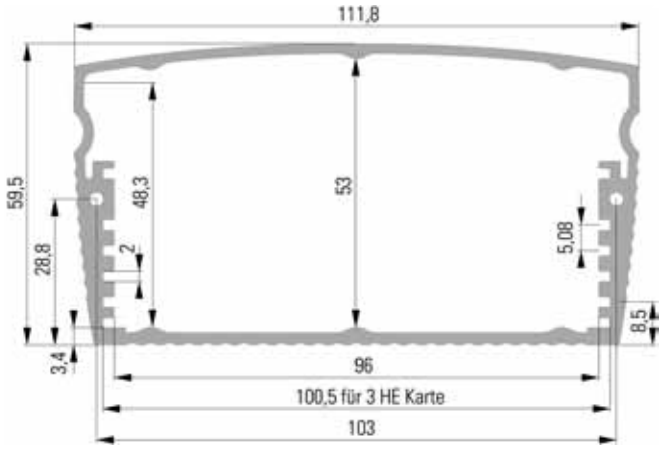
Parts marked with * are not included in the scope of delivery of the basic unit, i. e. must be ordered separately.

// Product information

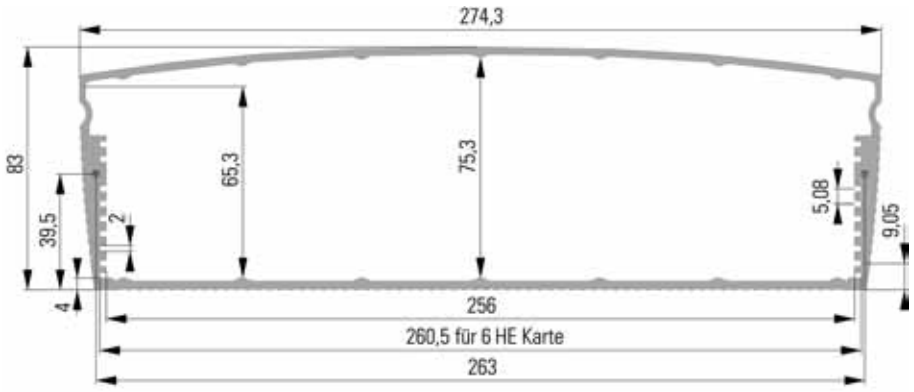
Dimension diagrams



Extruded case H1 = 45 mm / W1 = 85 mm



Extruded case H1 = 65 mm / W1 = 115 mm



Extruded case H1 = 85 mm / W1 = 275 mm

// Manufacturing tolerances

All parts are subject to POLYRACK's factory specifications, whereby:

Extrusion specifications comply with DIN EN 12020-1

Punched parts comply with DIN ISO 6930-1/6930-2 and DIN 6932

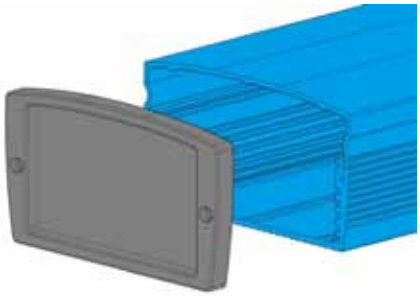
Die-cast parts comply with DIN 1688-4

// Basic units

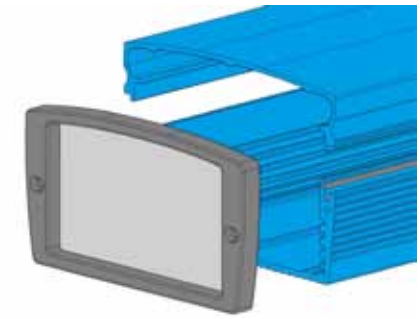
Basic units

The SmarTEC Series cases are available in two basic versions. In the "two-piece extruded case" version, the front/rear bezels are open and the front/rear panels are separate. However, the combination with front/rear bezel open or closed is basically possible for both versions. For this and for other dimensions, customized configuration is available.

Features of the basic units



Extruded case, one piece



Extruded case, two-piece

SmarTEC case, one-piece extruded case

Scope of delivery

Extruded case, one piece	1 pc
Front/rear bezel, closed	2 pcs
IP molded gasket	2 pcs
Feet 9 x 7 x 2.5 mm	4 pcs
Assembly kit	1 pc

Delivery form

Individual components in units for self-assembly

Notes

– Further sizes available for customized configuration
– IP54 rating in accordance with IEC 60529

Ordering table

H1 in mm	W1 in mm	D = 123 mm	D = 183 mm	D = 243 mm
45	85	21 00 00 21	–	–
65	115	–	21 00 00 22	–
85	275	–	–	21 00 00 24

SmarTEC case, two-piece extruded case

Scope of delivery

Extrusion, bottom	1 pc
Extrusion, top	1 pc
Front/rear bezel, open	2 pcs
Front/rear panel	2 pcs
EMC shielding D, 1.5 x 2 mm for extruded case (L = 1000 mm)	1 pc
IP cord gasket ø 2.5 mm for extruded case (L = 1000 mm)	1 pc
Feet 9 x 7 x 2.5 mm	4 pcs
Assembly kit	1 pc

Delivery form

Individual components in units for self-assembly

Notes

– Further sizes available for customized configuration
– IP43 rating in accordance with IEC 60529

Ordering table

H1 in mm	W1 in mm	D = 123 mm	D = 183 mm	D = 243 mm
65	115	–	21 00 00 13	–
85	275	–	–	21 00 00 15

SmarTEC

// Single components

Extruded case, one-piece – SmarTEC

Material
Aluminum extrusion, anodized/cutting edges raw

D1 = D - 18 mm

Scope of delivery
Extruded case 1 pc

Delivery form
Individual components in units for self-assembly

Ordering table

H1 in mm	W1 in mm	D1 = 105 mm	D1 = 165 mm	D1 = 225 mm
45	85	21 00 30 01	21 00 30 07	–
45	115	21 00 30 02	21 00 30 08	–
65	115	21 00 30 04	21 00 30 10	21 00 30 15
65	175	21 00 30 05	21 00 30 11	21 00 30 16
85	175	–	21 00 30 13	21 00 30 18
85	275	–	21 00 30 14	21 00 30 19

Extruded case, top cover – SmarTEC

Material
Aluminum extrusion anodized/cutting edges and surfaces for "EMC shielding fabric" raw

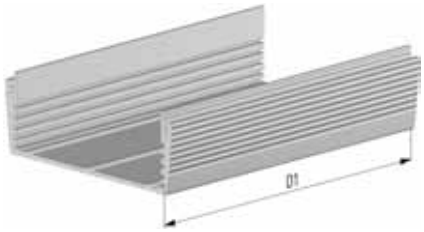
D1 = D - 18 mm

Scope of delivery
Extruded case, top 1 pc

Delivery form
In units for self-assembly

Ordering table

H1 in mm	W1 in mm	D1 = 105 mm	D1 = 165 mm	D1 = 225 mm
65	115	21 00 31 04	21 00 31 10	21 00 31 15
65	175	21 00 31 05	21 00 31 11	21 00 31 16
85	275	–	21 00 31 14	21 00 31 19



Extruded case, bottom – SmarTEC

Material
Aluminum extrusion anodized/cutting edges and surfaces for "EMC shielding fabric" raw

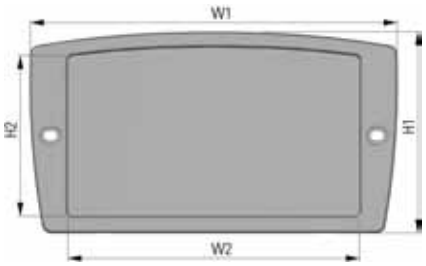
D1 = D - 18 mm

Scope of delivery
Extruded case, bottom 1 pc

Delivery form
In units for self-assembly

Ordering table

H1 in mm	W1 in mm	D1 = 105 mm	D1 = 165 mm	D1 = 225 mm
65	115	21 00 32 04	21 00 32 10	21 00 32 15
65	175	21 00 32 05	21 00 32 11	21 00 32 16
85	275	–	21 00 32 14	21 00 32 19



Front/rear bezel closed – SmarTEC

As front and rear cover for one-piece or two-piece extrusions

Material
Die-cast aluminum, powder-coated "anthracite metallic"

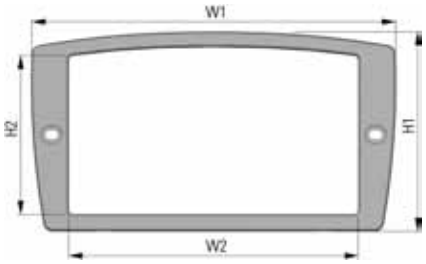
Scope of delivery
Front/rear bezel, closed 1 pc

Delivery form
Individual components in units for self-assembly

Note
– Can only be used in conjunction with IP molded gasket

Ordering table

H1 in mm	W1 in mm	H2 in mm	W2 in mm	D = 225 mm
45	85	31.0	62	**21 00 10 01**
45	115	31.0	92	**21 00 10 02**
65	115	50.5	92	**21 00 10 03**
65	175	50.5	152	**21 00 10 05**
85	175	67.7	152	**21 00 10 06**
85	275	67.7	252	**21 00 10 08**



Front/rear bezel open – SmarTEC

As front and rear cover for one-piece or two-piece extrusions

Material
Die-cast aluminum, powder-coated "anthracite metallic"

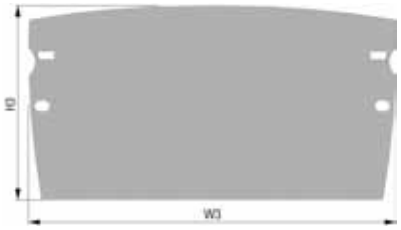
Scope of delivery
Front/rear bezel, open 1 pc

Delivery form
In units for self-assembly

Note
– For use with separate front/rear panel

Ordering table

H1 in mm	W1 in mm	H2 in mm	W2 in mm	D = 225 mm
45	85	31.0	62	**21 00 10 11**
45	115	31.0	92	**21 00 10 12**
65	115	50.5	92	**21 00 10 13**
65	175	50.5	152	**21 00 10 15**
85	175	67.7	152	**21 00 10 16**
85	275	67.7	252	**21 00 10 18**



Front/rear panels – SmarTEC

As full front and rear cover when open bezel is used

Material
Aluminum 2.5 mm, front anodized/rear alodined

Scope of delivery
Front/rear panel 1 pc

Delivery form
In units for self-assembly

Note
– In conjunction with "front/rear bezel, open"

Ordering table

H1 in mm	W1 in mm	H3 in mm	W3 in mm	Order no.
45	85	38.1	79.4	**21 00 20 01**
45	115	38.1	111.0	**21 00 20 02**
65	115	58.6	111.0	**21 00 20 03**
65	175	58.6	170.4	**21 00 20 05**
85	175	82.1	170.4	**21 00 20 06**
85	275	82.1	272.4	**21 00 20 08**

// Single components

EMC shielding material

To ensure that electronic products function satisfactorily in an electromagnetic environment i. e. that the electromagnetic compatibility (EMC) of the products is guaranteed, shielding material is required, dependent on the electronics and on the ambient conditions.
EMC shielding materials are used to establish contact with mechanical components and thus protect plug-in units and electronics against radio frequency interference.

EMC fabric shielding material – SmarTEC

The EMC shielding material D is used to establish contact between the top of the extruded case and the bottom of the extruded case

Material
Conductive fabric, 1.5 x 2 mm, CuNi coated

Scope of delivery
by length (L = 1000 mm) 1 pc

Delivery form
In units for self-assembly

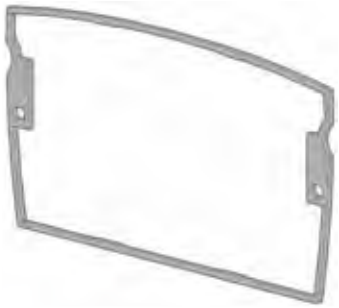
Notes
– Single sided adhesive (peel-off film)
– Thermal resistance: -40°C to +100°C
– Fire resistance rating: UL 94V0

Ordering table

Order no.
23 10 04 32

IP Gaskets

Required to enhance IP rating



IP molded gasket – SmarTEC

Required with use of closed front/rear bezel

Material
Molded gasket, EPDM, 30 Shore

Scope of delivery
Molded gasket 1 pc

Delivery form
In units for self-assembly

Note
– Cannot be used in conjunction with open bezels

Ordering table

H1 in mm	W1 in mm	Order no.
45	85	**21 00 43 01**
45	115	**21 00 43 02**
65	115	**21 00 43 03**
65	175	**21 00 43 05**
85	175	**21 00 43 06**
85	275	**21 00 43 08**

IP gasket – SmarTEC

For extruded case, two-piece

Material
Sponge rubber cord ø 2.5 mm

Scope of delivery
by length (L = 1000 mm) 1 pc

Delivery form
In units for self-assembly

Note
– Required for compliance with IP 43 for two-piece extruded case

Ordering table

Order no.
21 00 40 02

// Single components

Assembly kit – SmarTEC

The assembly kit is required for customized configuration of SmarTEC cases.

Notes

– The assembly kit is supplied with every SmarTEC basic unit.
– Individual components cannot be ordered separately.

Scope of delivery

Usage	Description	Version/material	Standard	Quantity
Mounting front/rear bezels to extruded case	Cylinder head screw with Torx T8 eco-syn	M3 x 15 mm Steel zinc-plated		4 pcs
Slots into case frame	Foot SmarTEC 9 x 7 x 2.5 mm	TPE, black 65 Shore		4 pcs

Ordering table

Order no.
21 00 40 01

Sequence

Product information

The design of the Sequence extruded case with its striking cooling fin structure is particularly appealing. The case is designed to accommodate single or double Eurocards in multiple levels. It is available in 2 versions. One version has closed front/rear bezels, the second has open front/rear bezels with separate front/rear panels. These are also available with a groove so that the case can be equipped with conductive gasketing for compliance with EMC criteria and up to IP54 rating.

Standards

– IP40 rating in accordance with IEC 60529
  Up to IP54 when front panels with groove and gasketing are used.

Note

– Use of grounding tabs not possible

Overview

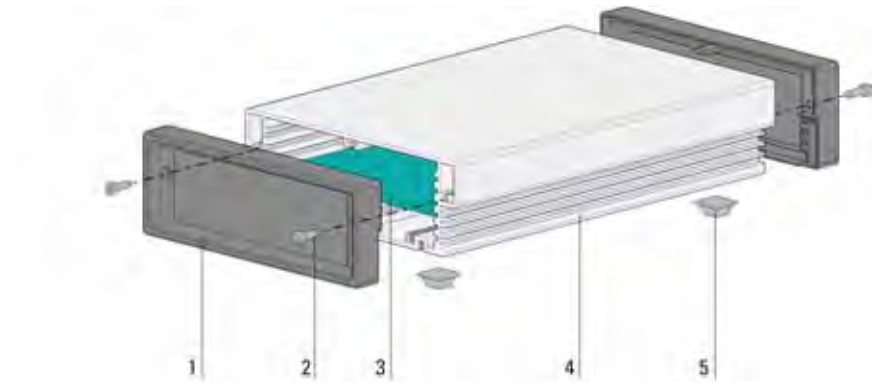
Basic units	H in U		W1 in mm			D1 in mm				Page
	1	2	125	172	260	185	209	240	264	
- Front/rear bezel closed	●		●			●	–	●		CAS 04 .27
	●			●	●	–	●	–	●	CAS 04 .27
		●	●		●	–	●	–	●	CAS 04 .27
- Front/rear bezel open	●		●			●	–	●	–	CAS 04 .27
	●			●	●	–	●	–	●	CAS 04 .27
		●	●		●	–	●	–	●	

Sequence

// Product information

Configuration examples

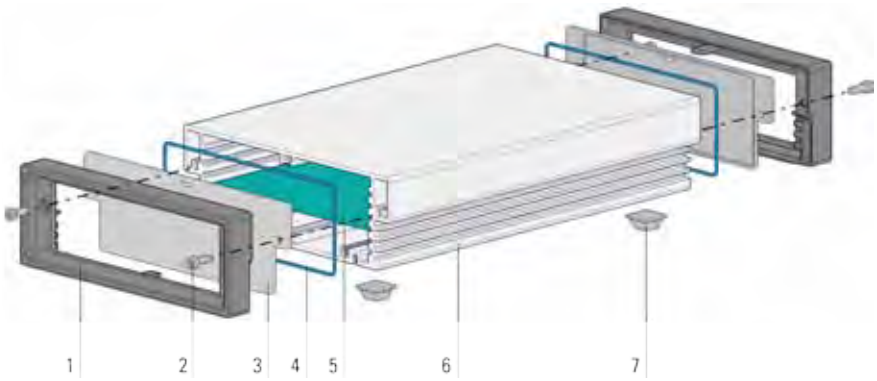
The diagram shows the configuration of a Sequence Series extruded case with closed front/rear bezel.



1 Front/rear bezel, closed
2 Assembly hardware
3 Printed circuit board*
4 Extruded case
5 Adhesive foot

Parts marked with * are not included in the scope of delivery of the basic unit, i. e. must be ordered separately.

The diagram shows the configuration of a Sequence Series extruded case with open front/ rear bezel.



1 Front/rear bezel, open
2 Assembly hardware
3 Front/rear panel with groove*
4 Cord gasket ø 1 mm
5 Printed circuit board*
6 Extruded case
7 Adhesive foot

Parts marked with * are not included in the scope of delivery of the basic unit, i. e. must be ordered separately.

Surface finishing

– Extruded case aluminum anodized/cutting edges raw or powder-coated RAL 7035 (light gray)/cutting edges raw
– Front/rear bezels ABS (fire resistance rating, RAL 7001 (silver gray)

// Notes on units of measurement and mounting/overall dimensions

Inner dimensions
– For mounting standard or double Eurocards

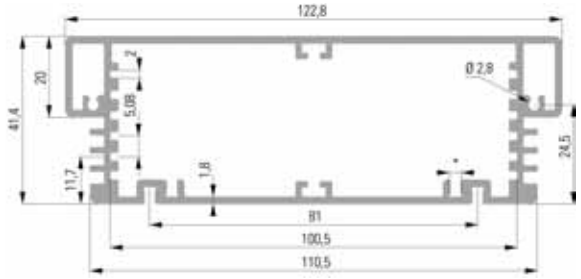
Unit of height U
Measurement unit for height in 19" rack systems
1 U = 44.45 mm

Dimensions specified in ordering tables
The dimensions, especially those given in U, are specified in relation to the application:

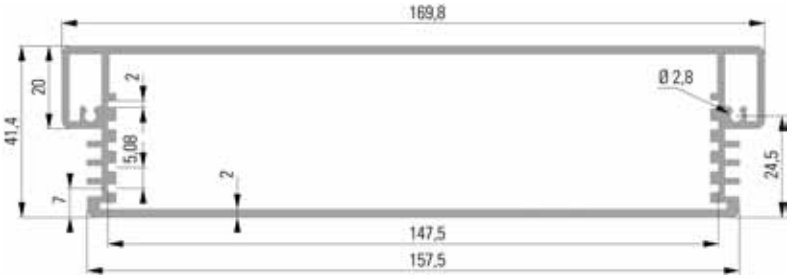
Height H = (n (U) x 44.45 mm) - 0.8 mm

Sequence

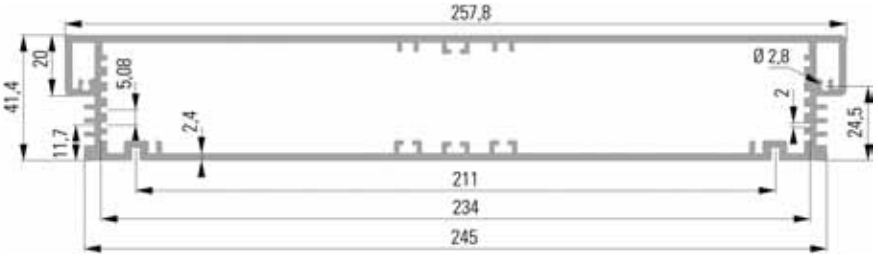
Dimension diagrams



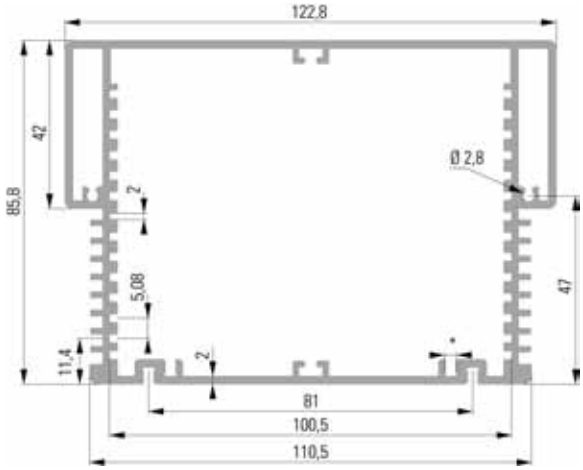
Extruded case H = 1 U / W1 = 125 mm



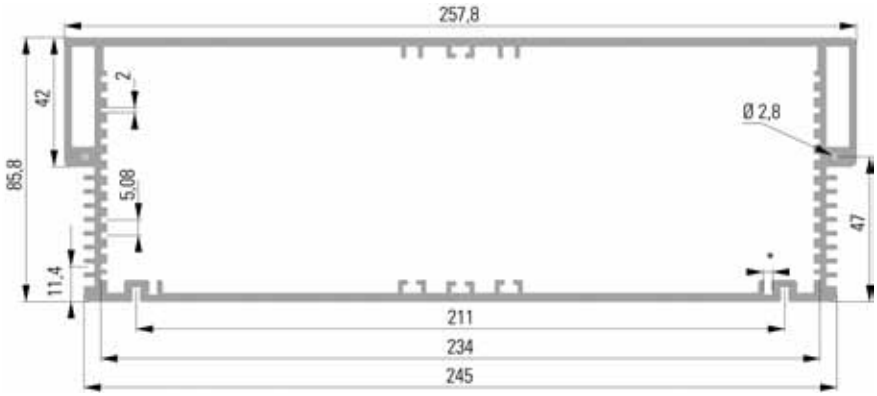
Extruded case H = 1 U / W1 = 172 mm



Extruded case H = 1 U / W1 = 260 mm



Extruded case H = 2 U / W1 = 125 mm



Extruded case H = 2 U / W1 = 260 mm

// Manufacturing tolerances

All parts are subject to POLYRACK's factory specifications, whereby:

Extrusion specifications comply with DIN EN 12020-1

Punched parts comply with DIN ISO 6930-1/6930-2 and DIN 6932

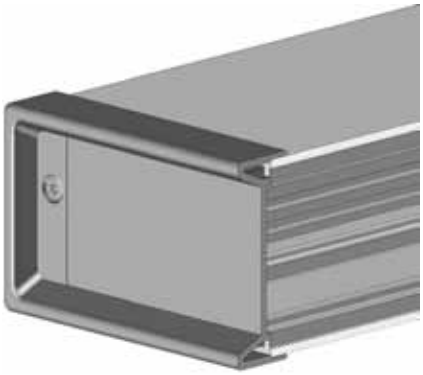
Plastic parts comply with DIN ISO 16901-130

Sequence

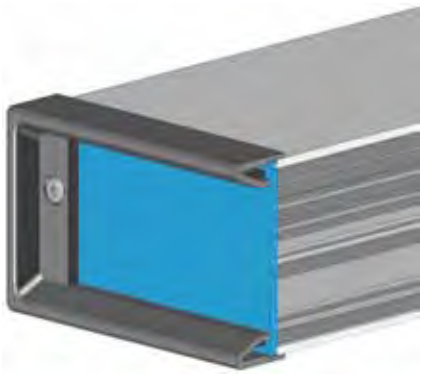
Basic units

The Sequence series cases are available in two basic versions.
The "front/rear bezel open" version can be equipped with various different front/rear panels, which also determine the degree of shielding and IP protection.

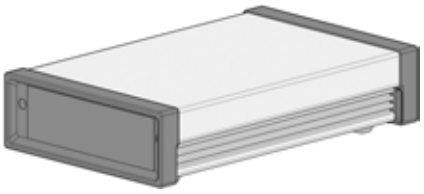
Features of the basic units



Front/rear bezel closed



Front/rear bezel open
"Front/rear panels – Sequence" are not included in the scope of delivery of the basic units.



Sequence case, closed front/rear bezel

Scope of delivery

Extruded case, anodized with option of RAL 7035	1 pc
Front/rear bezel, closed	2 pcs
Rubber foot self-adhesive 12 x 12 x 6 mm	4 pcs
Assembly kit	1 pc

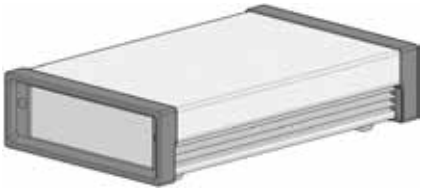
Delivery form
In units for self-assembly

Note
– Front/rear panels cannot be mounted

D = D1 + 20mm

Ordering table

H	H in mm	W in mm	D1 in mm	Extrusion anodized	Extrusion RAL 7035
1 U	43.6	125	185	20 00 00 01	20 00 00 21
1 U	43.6	125	240	20 00 00 05	20 00 00 25
1 U	43.6	172	209	20 00 00 09	20 00 00 29
1 U	43.6	172	264	20 00 00 10	20 00 00 30
1 U	43.6	260	209	20 00 00 03	20 00 00 23
1 U	43.6	260	264	20 00 00 07	20 00 00 27
2 U	88.1	125	209	20 00 00 02	20 00 00 22
2 U	88.1	125	264	20 00 00 06	20 00 00 26
2 U	88.1	260	209	20 00 00 04	20 00 00 24
2 U	88.1	260	264	20 00 00 08	20 00 00 28



Sequence case, open front/rear bezel

Scope of delivery

Extruded case, anodized with option of RAL 7035	1 pc
Front/rear bezel, open	2 pcs
Rubber foot, self-adhesive 12 x 12 x 6 mm	4 pcs
Assembly kit	1 pc

Delivery form
In units for self-assembly

Note
– Front/rear panels must be ordered separately.

D = D1 + 24mm

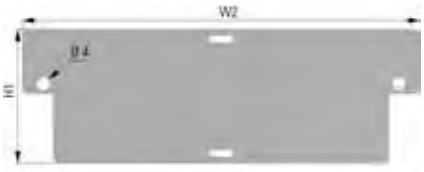
Ordering table

H	H in mm	W in mm	D1 in mm	Extrusion anodized	Extrusion RAL 7035
1 U	43.6	125	185	20 00 00 11	20 00 00 31
1 U	43.6	125	240	20 00 00 15	20 00 00 35
1 U	43.6	172	209	20 00 00 19	20 00 00 39
1 U	43.6	172	264	20 00 00 20	20 00 00 40
1 U	43.6	260	209	20 00 00 13	20 00 00 33
1 U	43.6	260	264	20 00 00 17	20 00 00 37
2 U	88.1	125	209	20 00 00 12	20 00 00 32
2 U	88.1	125	264	20 00 00 16	20 00 00 36
2 U	88.1	260	209	20 00 00 14	20 00 00 34
2 U	88.1	260	264	20 00 00 18	20 00 00 38

Sequence

// Single components

Front/rear panels, center rails



Front/rear panels – Sequence

As front/rear cover for use with open front/rear bezel

Material
Aluminum 2 mm
See ordering table

* Diagram: Front/rear panel with groove

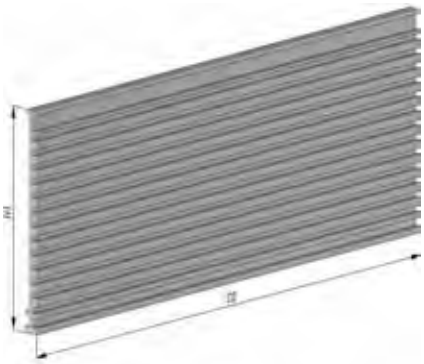
Scope of delivery
Front/rear panel 1 pc
Cord gasket ø =1 mm
only for front/rear panels with groove 1 pc

Delivery form
Individual components in units for self-assembly

Note
– Can only be used in conjunction with open bezels

Ordering table

H	H1 in mm	W1 in mm	W2 in mm	Front/rear anodized / cutting edges raw	Front anodized/ rear without groove, alodined	Front anodized/ rear with groove, alodined
1 U	41.1	125	122	**20 41 50 01**	**20 41 50 11**	**20 21 50 01**
1 U	41.1	172	169	**20 41 50 15**	**20 41 50 16**	**20 41 50 17**
1 U	41.1	260	257	**20 41 50 03**	**20 41 50 13**	**20 21 50 03**
2 U	85.5	125	122	**20 41 50 02**	**20 41 50 12**	**20 21 50 02**
2 U	85.5	260	257	**20 41 50 04**	**20 41 50 14**	**20 21 50 04**



Center rails – Sequence

For split PCB mounting of 100-mm Eurocards with case width of 260 mm.

Material
Aluminum extrusion, raw

D2 = D1 - 24 mm

Scope of delivery
Center rail 1 pc

Delivery form
In units for self-assembly

Ordering table

H	H1 in mm	D1 = 209 mm	D1 = 264 mm
1 U	35.9	**20 41 70 01**	**20 41 70 03**
2 U	79.3	**20 41 70 02**	**20 41 70 04**

Carrying/support handle

Carrying/support handle – Sequence

For mobile use, can be mounted at a later point in time

Material
Handle, steel, nickel-plated
Handle reception ABS RAL 7001

Fire-resistance rating
ABS: UL 94 V0

Scope of delivery

Handle	1 pc
Handle reception	2 pcs
Buffer ø 6 mm x 1.6 mm	2 pcs
Assembly kit	1 pc

Delivery form
In units for self-assembly

Notes
– The handle can be adjusted in steps of 90°
– Tilt angle of case 16°

Ordering table

W1 in mm	Order no.
125	20 21 70 00
260	20 21 70 01

Series 72
Small equipment case

Series 72

Product information

The Series 72 small equipment case is designed to accommodate single/double Eurocards or non-standard components. PC boards or chassis plates are inserted into the grooves of the anodized aluminum side extrusions. With just four screws, the aluminum covers are easy to remove, thus guaranteeing quick access to the electronics, e.g. for service purposes. Ventilation is via ventilation slits in the rear panel.

Notes

– The case is of limited suitability when EMC criteria apply.
– No grounding tabs, but these can be mounted individually

Standards

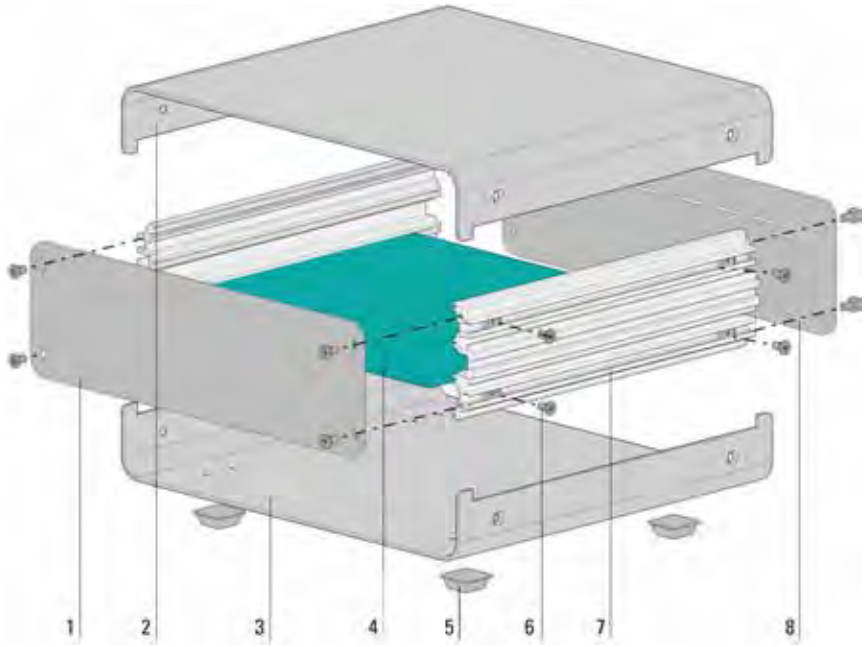
– IP30 rating in accordance with IEC 60529

Overview

Basic units	H1 in mm			W1 in mm			D in mm		Page
	80	100	135	125	190	260	180	240	
- Standard	●			●			●		CAS 04 .35
	●					●	●	●	CAS 04 .35
		●			●			●	CAS 04 .35
			●			●		●	CAS 04 .35
- With carrying/support handle	●			●			●		CAS 04 .35
	●					●	●	●	CAS 04 .35
		●			●			●	CAS 04 .35
			●			●		●	CAS 04 .35

Series 72

// Product information



Configuration example

The diagram shows the configuration of a Series 72 small equipment case.

1 Front panel*
2 Top cover
3 Bottom cover
4 Printed circuit board*
5 Adhesive rubber foot (tilt foot* optional)
6 Assembly hardware
7 Side extrusion
8 Rear panel with ventilation slits*

Parts marked with * are not included in the scope of delivery of the basic unit, i. e. must be ordered separately.

Surface finishing

– Top and bottom covers aluminum 2 mm, powder-coated RAL 9018 (papyrus white)
– Side extrusions aluminum anodized/ cutting edges raw

// Notes on mounting/overall dimensions

Inner dimensions
– For mounting standard or double Eurocards, depending on size

Dimensions specified in ordering tables
The dimensions are specified in relation to the application.

// Manufacturing tolerances

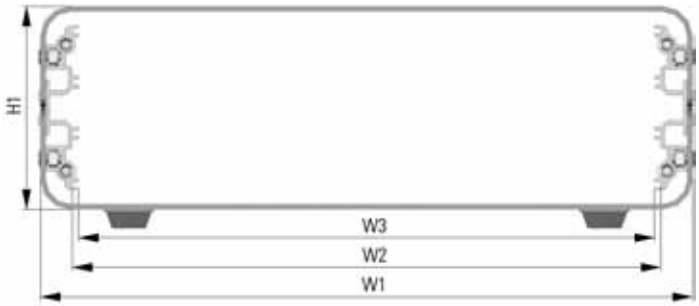
All parts are subject to POLYRACK's factory specifications, whereby:

Extrusion specifications comply with DIN EN 12020-1

Punched parts comply with DIN ISO 6930-1/6930-2 and DIN 6932

Die-cast parts comply with DIN 1688-4

Dimension diagrams

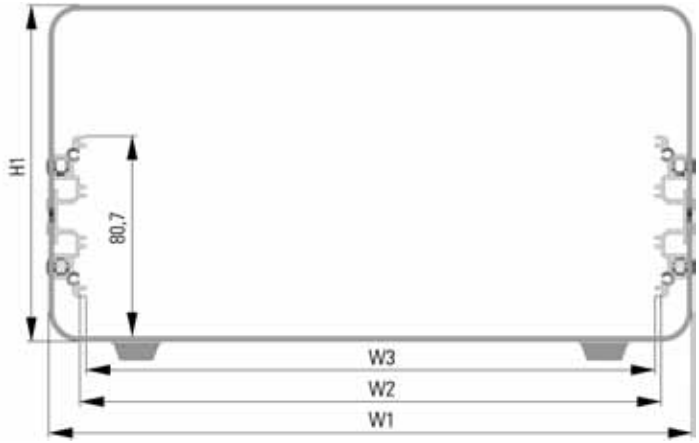


Front view H1 = 80 mm

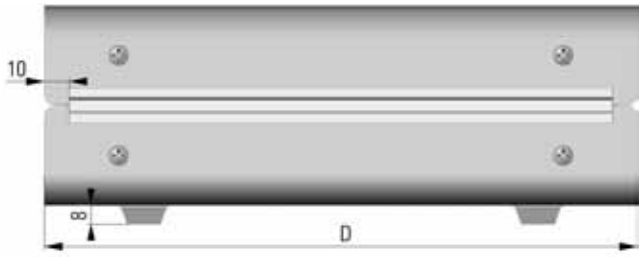
W1 = case width

W2 = W1 - 25.8 mm = PCB mounting dimension (applies to case sizes W1 = 125 mm and 60 mm)

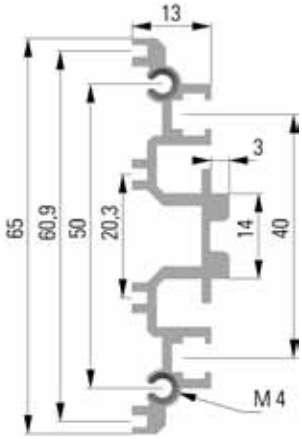
W3 = W1 - 30.8 mm = inner mounting dimension



Front view H1 = 100 mm or 135 mm



Side view



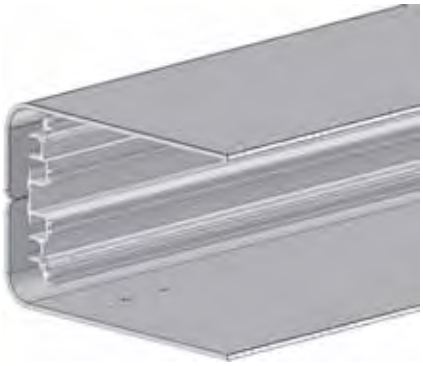
Side extrusion

Series 72

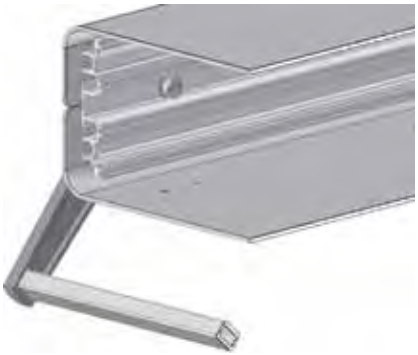
Basic units

The Series 72 cases are available in two basic versions. The standard version is designed as a desktop case. The model with the carrying/support handle can be used as a desktop case or for mobile use.

Features of the basic units



Standard



With carrying/support handle

Series 72 case, standard

Scope of delivery

Top cover	1 pc
Bottom cover	1 pc
Side extrusion	2 pcs
Rubber foot, self-adhesive 20 x 20 x 8 mm	4 pcs
Assembly kit	1 pc

Delivery form
In units for self-assembly

Note
– Front and rear panels must be ordered separately

Ordering table

H1 in mm	W1 in mm	D = 180 mm	D = 240 mm
80	125	**72 08 10 00**	–
80	260	**72 09 10 00**	**72 25 20 00**
100	190	–	**72 11 20 00**
135	260	–	**72 22 20 00**

Series 72 case with carrying/support handle

Scope of delivery

Top cover	1 pc
Bottom cover	1 pc
Side extrusion	2 pcs
Carrying/support handle	1 pc
Rubber foot, self-adhesive 20 x 20 x 8 mm	4 pcs
Assembly kit	1 pc

Delivery form
In units for self-assembly

Notes
– Front and rear panels must be ordered separately
– The handle has a carrying load of max. 15 kg and can be adjusted in 30° increments at the push of a button

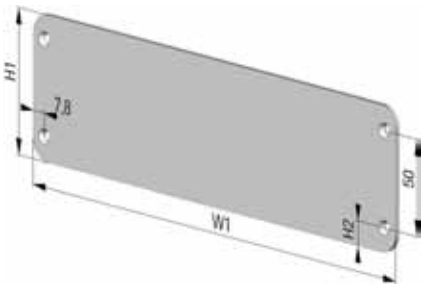
Ordering table

H1 in mm	W1 in mm	D = 180 mm	D = 240 mm
80	125	**72 08 11 00**	–
80	260	**72 09 11 00**	**72 25 21 00**
100	190	–	**72 11 21 00**
135	260	–	**72 22 21 00**

Series 72

// Single components

Front panels, rear panels



Front panel – Series 72

Mounted to side extrusion

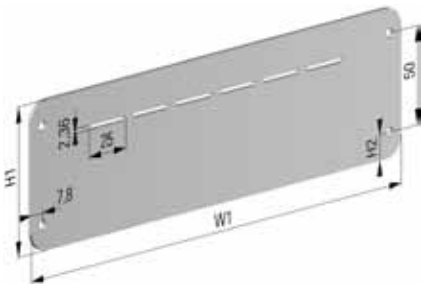
Material
Aluminum 2.5 mm, anodized/cutting edges raw

Scope of delivery
Front panel 1 pc
Assembly kit 1 pc

Delivery form
Individual components in units for self-assembly

Ordering table

H1 in mm	H2 in mm	W1 = 125 mm	W1 = 190 mm	W1 = 260 mm
80	13.0	14 08 13 00		14 09 33 00
100	22.9		14 10 23 00	
135	22.9			14 20 33 00



Rear panel – Series 72

Mounted to side extrusion
With ventilation slits for better heat dissipation

Material
Aluminum 2 mm, anodized/cutting edges raw

Scope of delivery
Rear panel 1 pc
Assembly kit 1 pc

Delivery form
Individual components in units for self-assembly

Ordering table

H1 in mm	H2 in mm	W1 = 125 mm	W1 = 190 mm	W1 = 260 mm
80	13.0	72 01 20 25		72 01 20 26
100	22.9		72 01 20 28	
135	22.9			72 01 20 40

Carrying/support handle

Carrying/support handle Series 72

For mobile use, for mounting on "Series 72 standard cases", cannot be added later.
Handle side legs and handle bar must be ordered separately.

Notes
- Max. load 15 kg
- Adjustable in 30° increments at the push of a button

Handle side legs – Series 72

Material
Handle side legs
PA glass-fiber reinforced, black

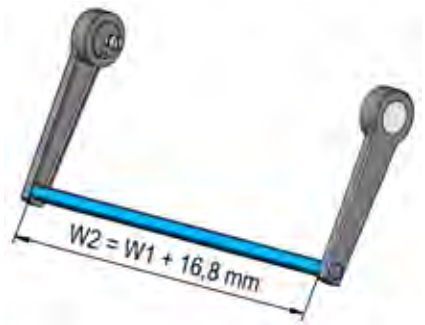
Scope of delivery
Handle side legs (1 pair) 1 pc

Delivery form
In units for self-assembly

Notes
- Handle side legs with locking device
- Cross-recessed pan head screws DIN 7985, M5 x 12 mm must be ordered separately. (Order no. 79 91 32 00)

Ordering table

Order no.
79 50 40 00



Handle bar – Series 72

Material
Aluminum extrusion, anodized/cutting edges raw

Scope of delivery
Handle extrusion (L = 1000 mm) 1 pc

Delivery form
In units for self-assembly

Notes
- The handle bar is held in place by expansion clamping
- Length of extrusion = case width +16 mm
- Without anti-slip element

Ordering table

Order no.
90 10 00 00

Series 72

// Single components

Chassis plates

Chassis plate – Series 72

For mounting custom assemblies

Material
Aluminum 2 mm, raw

D = Case depth

Scope of delivery
Chassis plate 1 pc

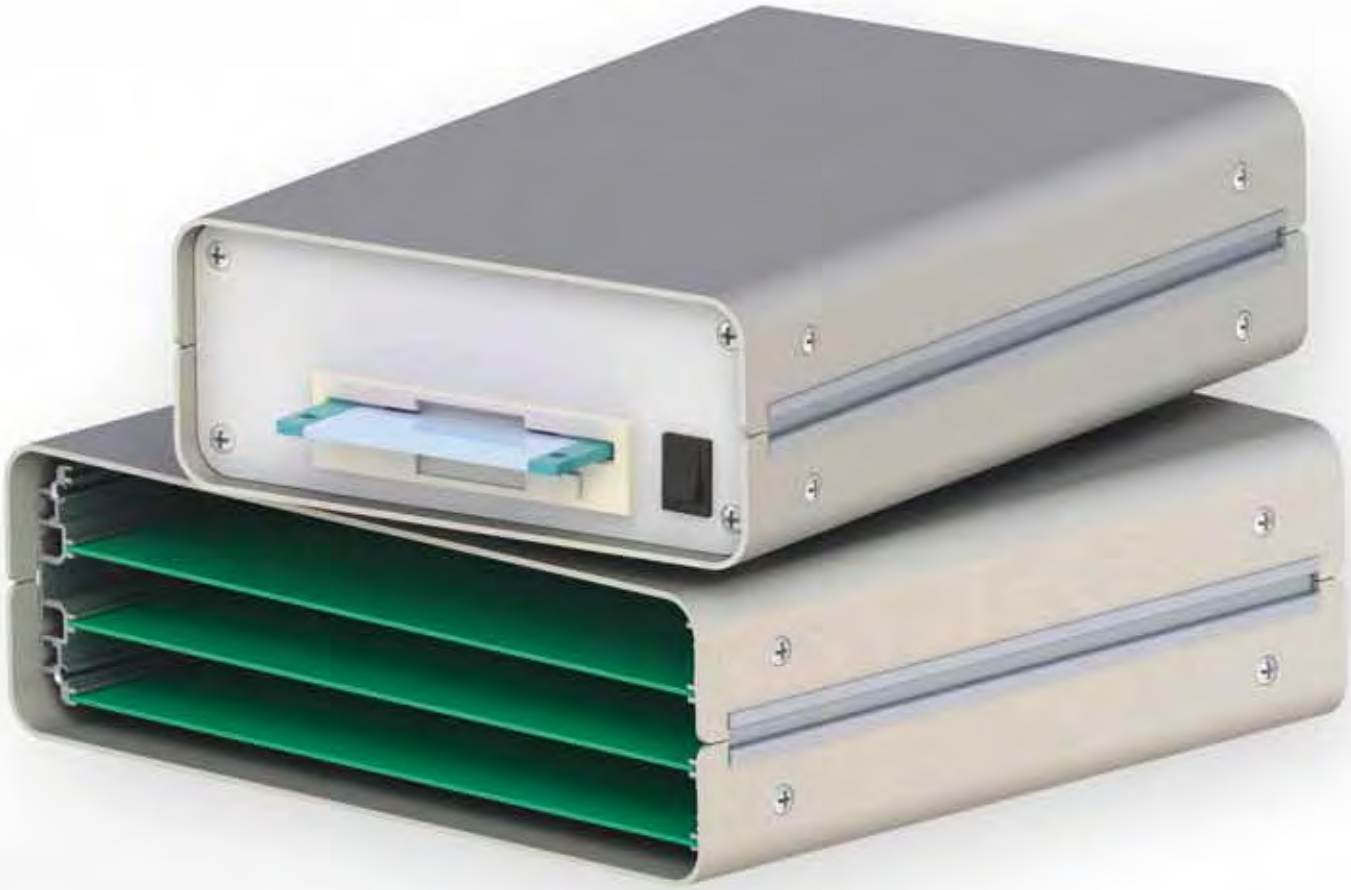
Delivery form
In units for self-assembly

Note
– Are inserted into the grooves in the side extrusion

Ordering table

W1 in mm	W2 in mm	D in mm	D1 in mm	Order no.
125	100.3	180	159.5	**79 76 31 00**
125	100.3	240	219.5	**79 76 37 00**
190	163.7	240	219.5	**79 76 34 00**
260	233.7	180	159.5	**79 76 33 00**
260	233.7	240	219.5	**79 76 35 00**

Series 72
Small equipment case



Quarto
Small equipment case

Quarto

Product information

The Quarto Series small equipment cases accommodate custom electronics. The modular concept of the extruded case construction gives dimensional flexibility as regards both width and depth. The good EMC characteristics and the possibility of rendering the case so dust-proof and water-proof that it complies with IP54 are additional benefits. Thanks to multiple configuration options, the case can be used as a desktop, wall-mounting, extension, control or 19" case.

Standards

– IP rating in accordance with IEC 60529 can comply with up to IP54, depending on configuration

Note

– No grounding tabs, but these can be mounted individually

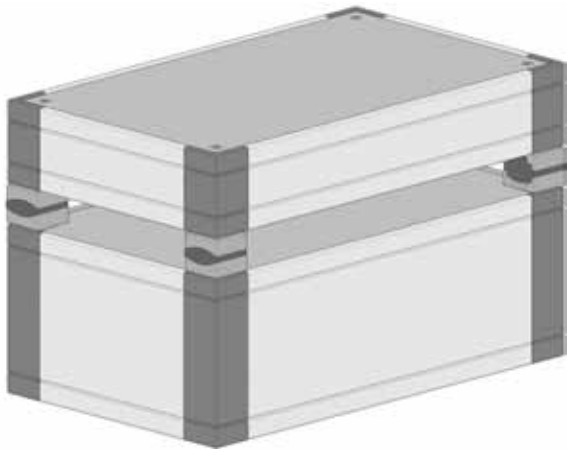
Overview

Basic Units	H			W1 in mm		D in mm		Page
	1 U	2 U	3 U	250	433	150	250	
- Standard	●	●	●	●	●	●	●	CAS 04.49
- Standard, preassembled	●	●	●	●	●	●	●	CAS 04.49
- EMC	●	●	●	●	●	●	●	CAS 04.50
- EMC/IP54	●	●	●	●	●	●	●	CAS 04.50

Quarto

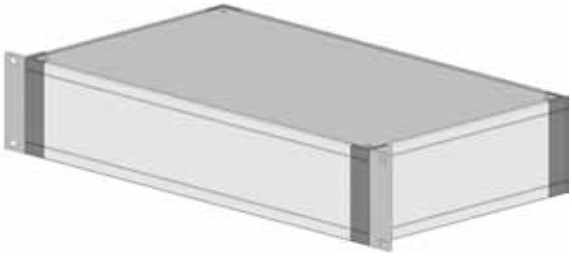
Application solutions

Desktop case



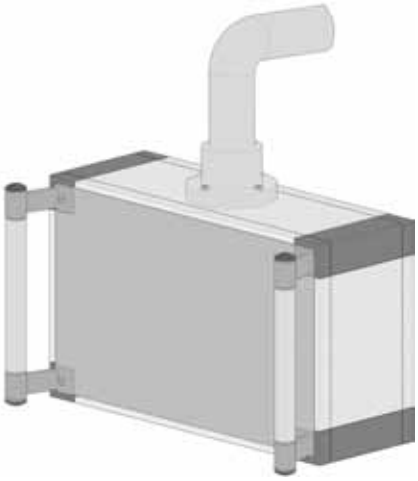
Extension case

Hinged front panel



19" case

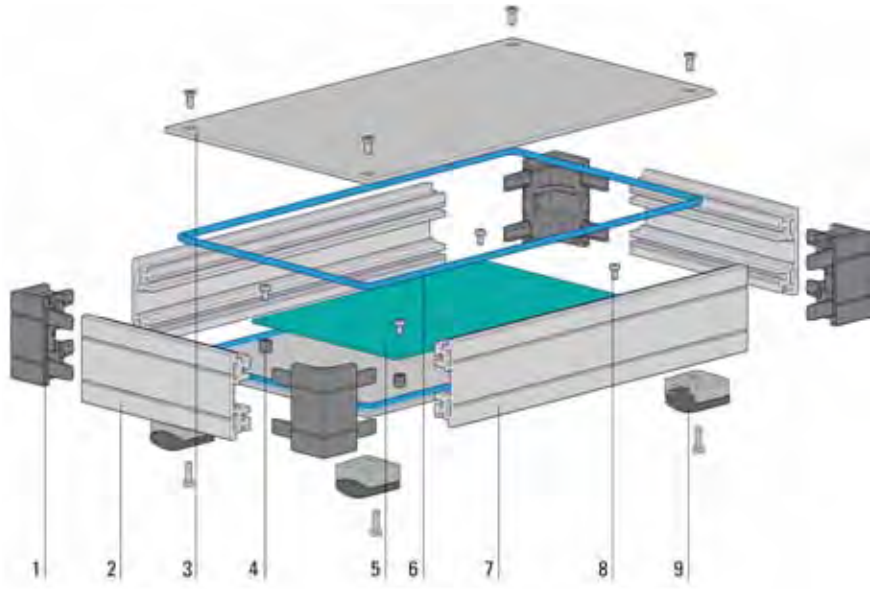
Wall-mounting case



Control case

Quarto

// Product information



Configuration example

The diagram shows the configuration of a Series Quarto desktop case.

1 Die-cast corner bracket
2 Extrusion, dimension for D
3 Front/rear panel*
4 Standoff*
5 Printed circuit board*
6 EMC/IP gasket
7 Extrusion, dimension for W1
8 Assembly hardware
9 Foot (stack foot available as option)

Parts marked with * are not included in the scope of delivery of the basic unit, i. e. must be ordered separately.

Surface finishing

– Extrusions anodized cutting edges raw, corner brackets powder-coated RAL 7001 (silver gray)
Option of case fully powder-coated RAL 7035 (light gray)

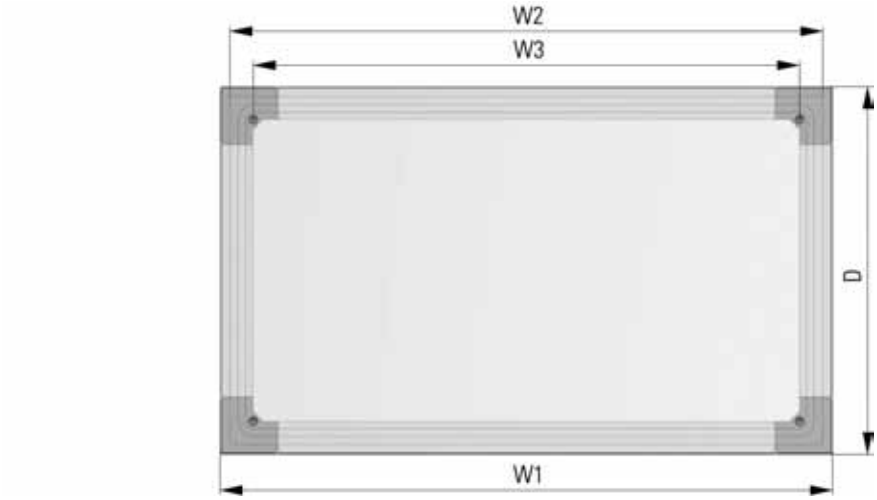
// Notes on units of measurement and mounting/overall dimensions

Unit of height U
Measurement unit for height in 19“ rack systems
1 U = 44.45 mm

Dimensions specified in ordering tables
The dimensions, especially those given in U, are specified in relation to the application:

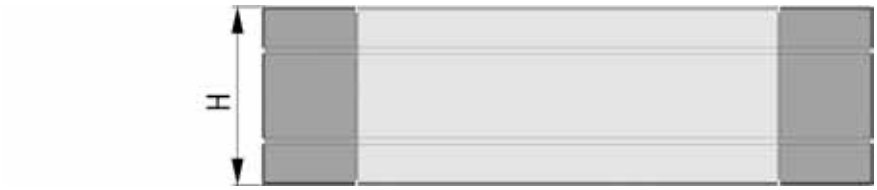
Height H = (n (U) x 44.45 mm) - 0.8 mm

Dimension diagrams



D = Case depth

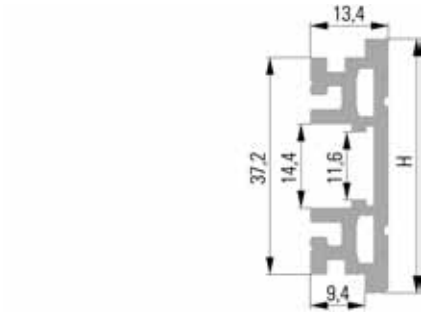
W1 = Case width
W2 = W1 - 10 mm
W3 = W1 - 13.4 mm
= inner mounting dimension
= distance between front and rear panel mounting



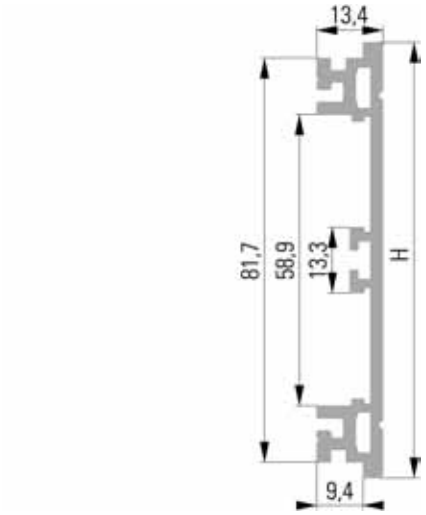
Side view

Quarto

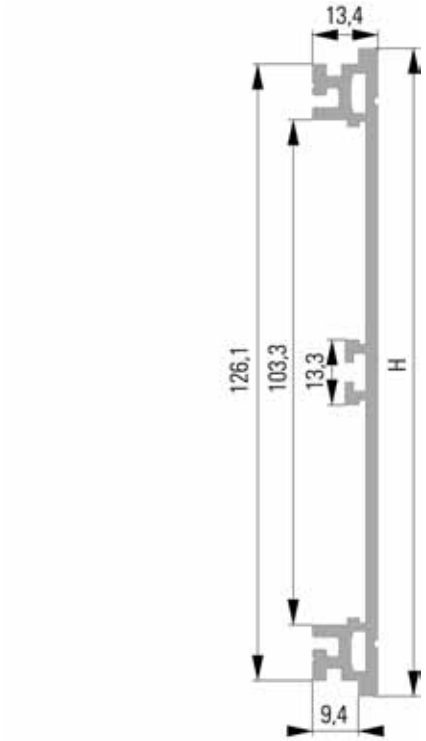
// Product information



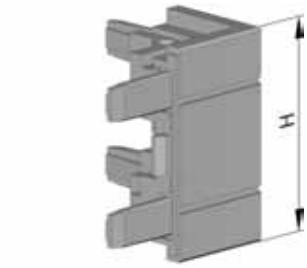
Side extrusion 1 U



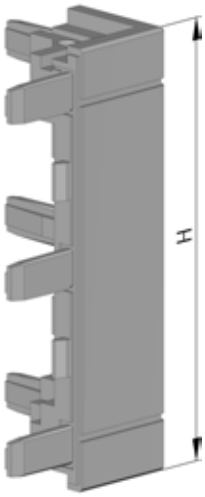
Side extrusion 2 U



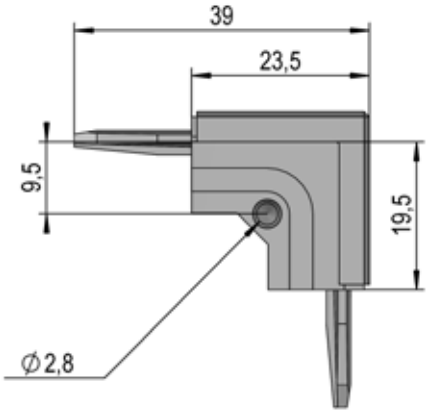
Side extrusion 3 U



Corner bracket, 1 U



Corner bracket, 2 U or 3 U



Top view of corner bracket

// Manufacturing tolerances

All parts are subject to POLYRACK's factory specifications, whereby:

Extrusion specifications comply with DIN EN 12020-1

Punched parts comply with
DIN ISO 6930-1/6930-2 and DIN 6932

Die-cast parts comply with DIN 1688-4

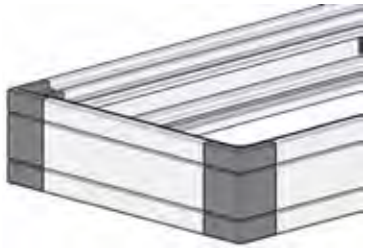
Quarto

Basic units

The Quarto Series basic units are available in 4 versions.

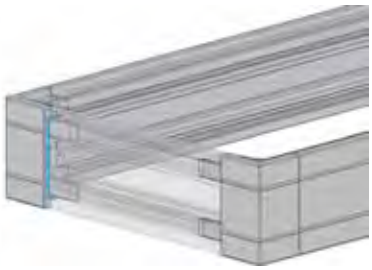
Features of the basic units

Quarto case, standard
Extrusions anodized, corner brackets RAL 7001
In units for self-assembly



Quarto case, standard, preassembled
Extrusions anodized, corner brackets RAL 7001
Frame preassembled

Quarto case, EMC
Extrusions and corner brackets RAL 7035
Frame preassembled



Quarto case, EMC/IP54
Frame and corner brackets RAL 7035
Frame preassembled

Quarto case, standard

Scope of delivery

Frame extrusion for case width W1	2 pcs
Frame extrusion for case depth D	2 pcs
Corner bracket RAL7001	4 pcs

Delivery form
Individual components in units for self-assembly

Note
– Front/rear panels must be ordered separately

Ordering table

H	W1 in mm	D in mm	Order no.
1 U	250	150	**96 00 00 01**
1 U	433	250	**96 00 00 31**
2 U	250	150	**96 00 00 06**
2 U	433	250	**96 00 00 36**
3 U	250	150	**96 00 00 11**
3 U	433	250	**96 00 00 41**

Quarto case, standard, preassembled

Scope of delivery

Frame extrusion for case width W1	2 pcs
Frame extrusion for case depth D	2 pcs
Corner bracket RAL7001	4 pcs

Delivery form
In units, frame preassembled

Note
– Front/rear panels must be ordered separately

Ordering table

H	W1 in mm	D in mm	Order no.
1 U	250	150	**96 10 00 01**
1 U	433	250	**96 10 00 31**
2 U	250	150	**96 10 00 06**
2 U	433	250	**96 10 00 36**
3 U	250	150	**96 10 00 11**
3 U	433	250	**96 10 00 41**

Quarto

// Basic units

Quarto case, EMC

Scope of delivery

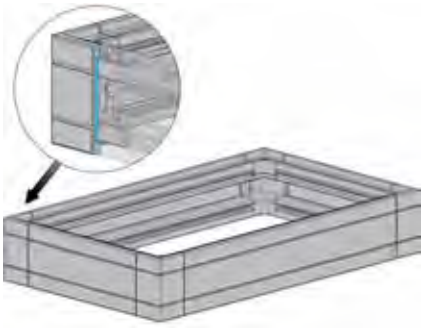
Frame extrusion for case width W1	2 pcs
Frame extrusion for case depth D	2 pcs
Corner bracket RAL7035	4 pcs

Delivery form
In units, frame preassembled

Note
– Front/rear panels must be ordered separately

Ordering table

H	W1 in mm	D in mm	Order no.
1 U	250	150	**96 10 00 02**
1 U	433	250	**96 10 00 32**
2 U	250	150	**96 10 00 07**
2 U	433	250	**96 10 00 37**
3 U	250	150	**96 10 00 12**
3 U	433	250	**96 10 00 42**



Quarto case, EMC/IP54

Scope of delivery

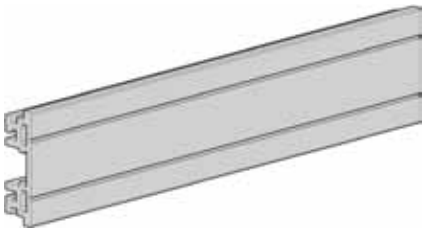
Frame extrusion for case width W1	2 pcs
Frame extrusion for case depth D	2 pcs
Corner bracket RAL7035	4 pcs
Cord gasket ø 1 mm	8 pcs

Delivery form
In units, frame preassembled

Note
– Front/rear panels, the requisite EMC/IP cord gasket ø 3.5 mm (L = 1000 mm) and slider for extra screw connection of the panels must be ordered separately

Ordering table

H	W1 in mm	D in mm	Order no.
1 U	250	150	**96 10 00 03**
1 U	433	250	**96 10 00 33**
2 U	250	150	**96 10 00 08**
2 U	433	250	**96 10 00 38**
3 U	250	150	**96 10 00 13**
3 U	433	250	**96 10 00 43**



Frame extrusion – Quarto

Frame extrusion 2700 mm long in 1 U, 2 U and 3 U for cutting to individual lengths.
The frame extrusions are compression-joined with the die-cast corner brackets

Material
Aluminum extrusion, clear anodized

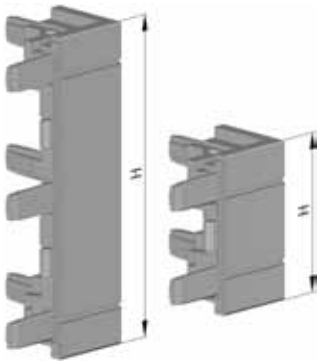
Scope of delivery
Frame extrusion
Extrusion (L = 2700 mm) 1 pc

Delivery form
In units for self-assembly

Note
– Cutting dimensions of frame extrusions = W1 or D - 47 mm

Ordering table

H	H in mm	Order no.
1 U	43.6	**96 42 10 01**
2 U	88.1	**96 42 10 03**
3 U	132.5	**96 42 10 05**



Corner bracket – Quarto

To construct the case, the die-cast corner brackets are compression-joined with the frame extrusions.

Material
Die-cast aluminum, powder-coated RAL 7001 (silver gray)

Scope of delivery
Corner bracket 1 pc

Delivery form
In units for self-assembly

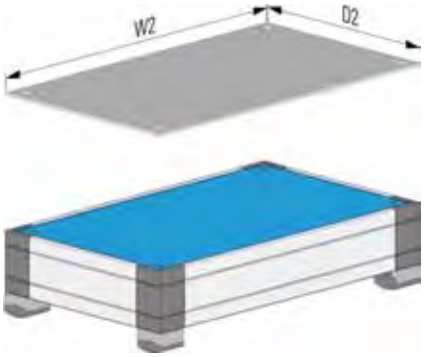
Note
– IP cord gasket ø 1 mm must be ordered separately

Ordering table

H	H in mm	Order no.
1 U	43.6	**96 42 41 11**
2 U	88.1	**96 42 41 12**
3 U	132.5	**96 42 41 13**

Quarto

// Single components



Front/rear panel, standard – Quarto

As front/rear cover

Material
Aluminum 2.5 mm, anodized/cutting edges raw

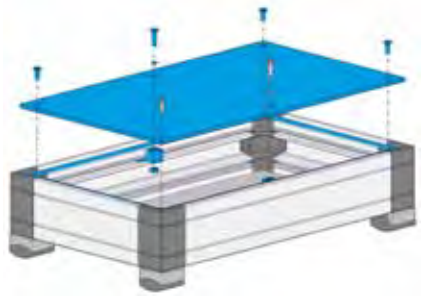
Scope of delivery

Front/rear panel	1 pc
Assembly kit	1 pc

Delivery form
Individual components in units for self-assembly

Ordering table

W1 in mm	D in mm	W2 in mm	D2 in mm	Anodized/cutting edges raw
250	150	240	140	**96 21 50 00**
433	250	423	240	**96 21 50 04**



Front/rear panel, EMC/IP54 – Quarto

As front/rear cover, in EMC/IP54 version

Material
Aluminum 2.5 mm, front anodized/rear alodined

Scope of delivery

Front/rear panel	1 pc
Cord gasket ø = 3.5 mm, L = 700 mm or 1400 mm (EMC/IP54 version only)	1 pc
slider for screw connection	2 or 4 pcs
Assembly kit	1 pc

Delivery form
Individual components in units for self-assembly

Ordering table

W1 in mm	D in mm	W2 in mm	D2 in mm	Front anodized / rear alodined (EMC/IP54)
250	150	240	140	**96 21 50 01**
433	250	423	240	**96 21 50 05**

Slider for extra screw connection EMC/IP54 – Quarto

For additional screw connection of front panels in EMC/IP54 version

Material
PPO black, UL94 V0

Scope of delivery

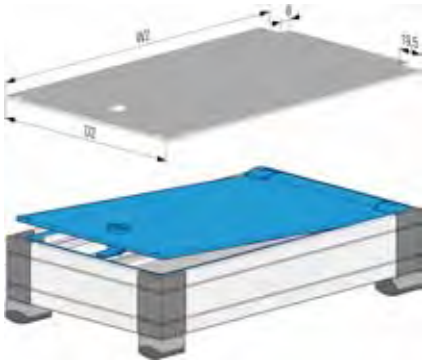
Slider for extra screw connection	1 PU 50 pcs

Delivery form
Individual components in units for self-assembly

Notes
– To be mounted approx. every 140 mm
– Assembly components must be ordered separately

Ordering table

Order no.
96 21 70 10



Front panel, hinged – Quarto

As front cover, available in standard version and EMC version

Material
Front panel 2.5 mm, option of anodized/ cutting edges raw or front/anodized/rear alodined/cutting edges raw (EMC version)
Hinges PA UL 94 V0, RAL 7001

Scope of delivery

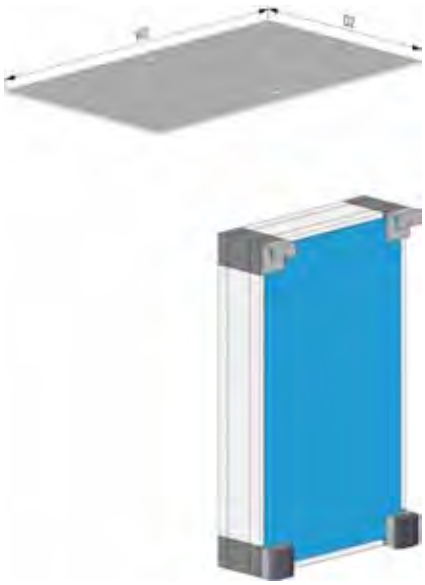
Front panel	1 pc
Hinge extrusion	1 pc
Hinge left/right	2 pcs
Lock with key	1 pc
Mounting spring	1 pc
Assembly kit	1 pc

Delivery form
Individual components in units for self-assembly

Note
– Handle elements and handle bar must be ordered separately

Ordering table

W1 in mm	D in mm	W2 in mm	D2 in mm	Anodized/ cutting edges raw	Front anodized / rear alodined EMC
250	150	240	140	**96 21 50 10**	**96 21 50 11**
433	250	423	240	**96 21 50 14**	**96 21 50 15**



Rear panel for wall mounting – Quarto

As rear cover and for attaching wall-mount elements, available in standard version and in EMC version

Material
Aluminum 2.5 mm, option of anodized/ cutting edges raw or front anodized/rear alodined (EMC)

Scope of delivery

Front panel	1 pc
Assembly kit	1 pc
For EMC version, the following is also required:	
Cord gasket ø 3.5 mm	2 pcs
Slider for extra screw connection	2 or 4 pcs

Delivery form
Individual components in units for self-assembly

Note
– Cord gasket ø 3.5 mm for EMC must be ordered separately

Ordering table

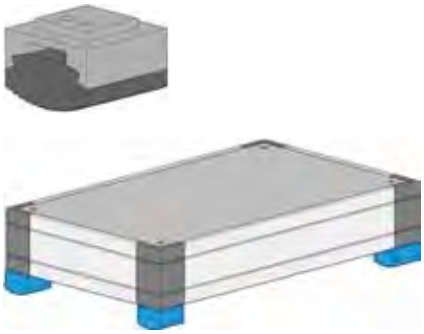
W1 in mm	D in mm	W2 in mm	D2 in mm	Anodized/ cutting edges raw	Front anodized / rear alodined EMC
250	150	240	140	**96 21 50 20**	**96 21 50 25**
433	250	423	240	**96 21 50 21**	**96 21 50 26**

Quarto

// Single components

Foot, stack foot, wall mounting

Foot, stack foot and wall mounting are screwed to the corner brackets together with the front/ rear panel.



Foot, standard – Quarto

Can be added later, with anti-slip insert

Material
Base foot PA RAL 7001, UL94V0
Foot rubber EPDM, RAL 9005, 60 Shore

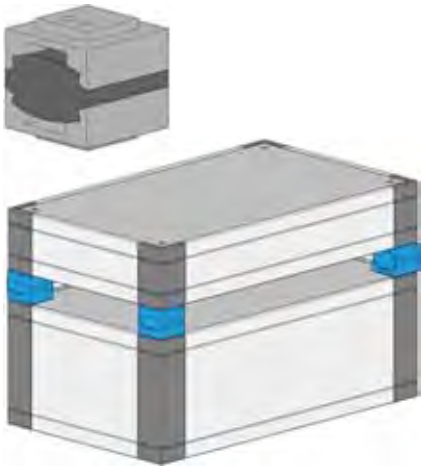
Scope of delivery

Base foot	4 pcs
Foot rubber	4 pcs
Assembly kit	1 pc

Delivery form
In units for self-assembly

Ordering table

Order no.
96 21 70 02



Stack foot – Quarto

Connection element for stacking Quarto cases

Material
Base foot PA RAL 7001, UL94V0
Coupling rubber EPDM, RAL 9005, 60 Shore

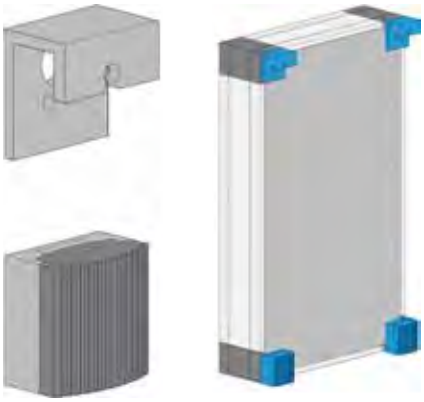
Scope of delivery

Base foot	8 pcs
Coupling rubber	4 pcs
Assembly kit	1 pc

Delivery form
In units for self-assembly

Ordering table

Order no.
96 21 70 03



Wall mount – Quarto

Can be added later, with anti-slip insert in base foot

Material
Base foot/wall-mounting element
PA, RAL 7001, UL94V0
Foot rubber EPDM, RAL 9005, 60 Shore

Scope of delivery

Base foot	2 pcs
Foot rubber	2 pcs
Wall-mounting element	2 pcs
Assembly kit	1 pc

Delivery form
In units for self-assembly

Ordering table

Order no.
96 21 70 01

Handle

Handle elements are screwed to the corner brackets together with the front panel.
The handle bar connects the handle elements.

Handle elements – Quarto

Material
Handle elements PA, RAL 7001, UL94V0
Handle faceplate screw, brass, bright nickel-plated

Scope of delivery

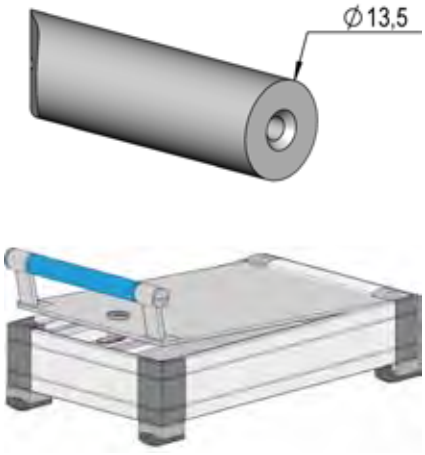
Handle elements	2 pcs
Handle faceplate screw M4	2 pcs
Assembly kit	1 pc

Delivery form
In units for self-assembly

Note
– Handle extrusion (available by length) must be ordered separately

Ordering table

Order no.
96 21 70 05



Handle bar – Quarto

Material
Aluminum extrusion, anodized

Scope of delivery
Handle extrusion (by length L = 2700 mm) 1 pc

Delivery form
In units for self-assembly

Notes
– Length of extrusion = case width - 47 mm
– For mounting, create M4/12 mm thread

Ordering table

Order no.
96 42 10 21

Quarto

// Single components

Hinge – Quarto

Hinge elements are screwed to the corner brackets together with the hinge extrusion. The front panel is clamped into the groove of the hinge extrusion.

Hinge elements – Quarto

Material
Hinge elements, PA RAL7001, UL94V0

Scope of delivery

Hinge elements	2 pcs
Assembly kit	1 pc

Delivery form
In units for self-assembly

Note
– Hinge extrusion must be ordered separately (by length)

Ordering table

Order no.
96 21 70 04

Hinge extrusion – Quarto

Material
Aluminum extrusion, anodized/cutting edges raw

Scope of delivery

Hinge extrusion (by length L = 2700 mm)	1 pc

Delivery form
In units for self-assembly

Note
– Length of hinge = case width - 47 mm

Ordering table

Order no.
96 42 10 11

19" Mounting bracket

19" mounting brackets are mounted on the sides of the case and enable the case to be mounted in 19" racks.

19" Mounting bracket – Quarto

Material
Aluminum extrusion, anodized/cutting edges raw

Scope of delivery

19" mounting bracket	2 pcs
Assembly kit	1 pc

Delivery form
In units for self-assembly

Notes
- Can be standardly used with cases W1 = 433 mm (84HP)
- Indentations are provided on the insides of the corner brackets so that the bore holes can be broken through using an appropriate tool

Ordering table

H	H1 in mm	Order no.
1 U	31.75	**96 21 70 06**
2 U	76.20	**96 21 70 07**
3 U	57.15	**96 21 70 08**

// Single components

EMC shielding material/IP gaskets

To ensure that electronic products function satisfactorily in an electromagnetic environment i. e. that the electromagnetic compatibility (EMC) of the products is guaranteed, shielding material is required, dependent on the electronics and on the ambient conditions.

EMC shielding materials are used to establish contact with mechanical components and thus protect plug-in units and electronics against radio frequency interference.
For electronic equipment that is used in industrial environments the so-called "IP ratings" in accordance with IEC 60529 apply.

EMC/IP cord gasket ø 1.0 mm – Quarto

The EMC shielding material is used to establish contactbetween the mounting bracket and the extrusion.

Material
Silicone with silver-coated particles, 65 Shore

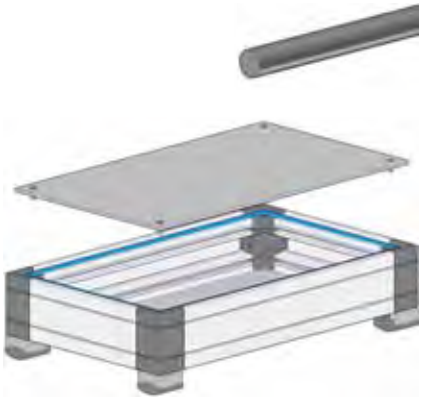
Scope of delivery
Cord gasket ø 1.0 mm:
by length (L = 1000 mm) 1 pc

Delivery form
In units for self-assembly

Notes
– Thermal resistance: -50°C to +160°C
– Requirement for 1 case = approx. 8 x H

Ordering table

Order no.
96 48 60 01



EMC/IP cord gasket ø 3.5 mm – Quarto

The EMC shielding material is used to establishcontact between the case bezel and the front/rear panel.

Material
Silicone with silver-coated particles, 65 Shore

Scope of delivery
Cord gasket ø 3.5 mm:
by length (L = 1000 mm) 1 pc

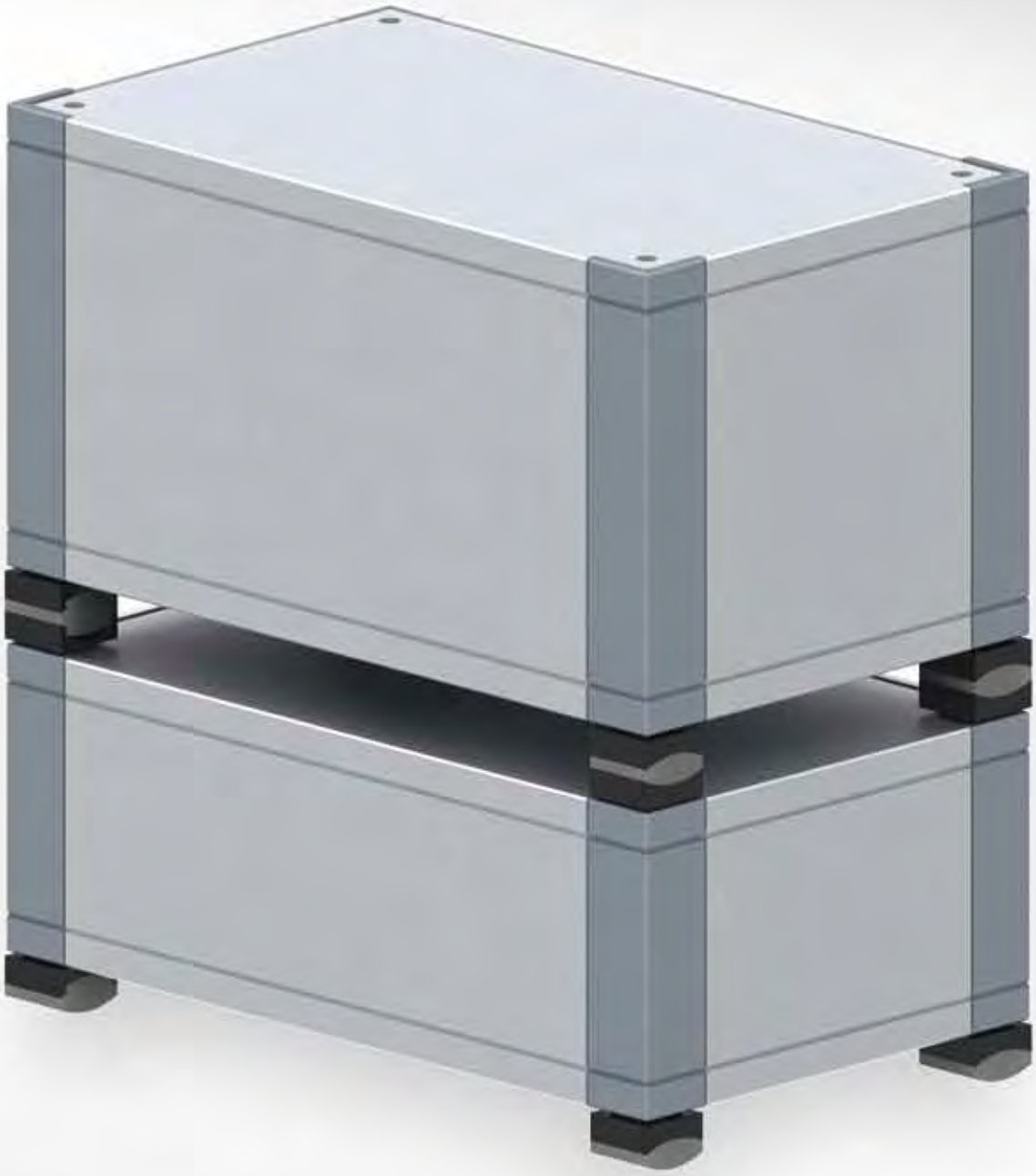
Delivery form
In units for self-assembly

Notes
– Thermal resistance: -50°C to +160°C
– Requirement for 1 case = approx. 2 x W1+ 2 x D
– Slider and assembly components for extra screw connection must be ordered separately

Ordering table

Order no.
96 48 60 11

Quarto
Small equipment case



Series 73
Small equipment case

Series 73

Product information

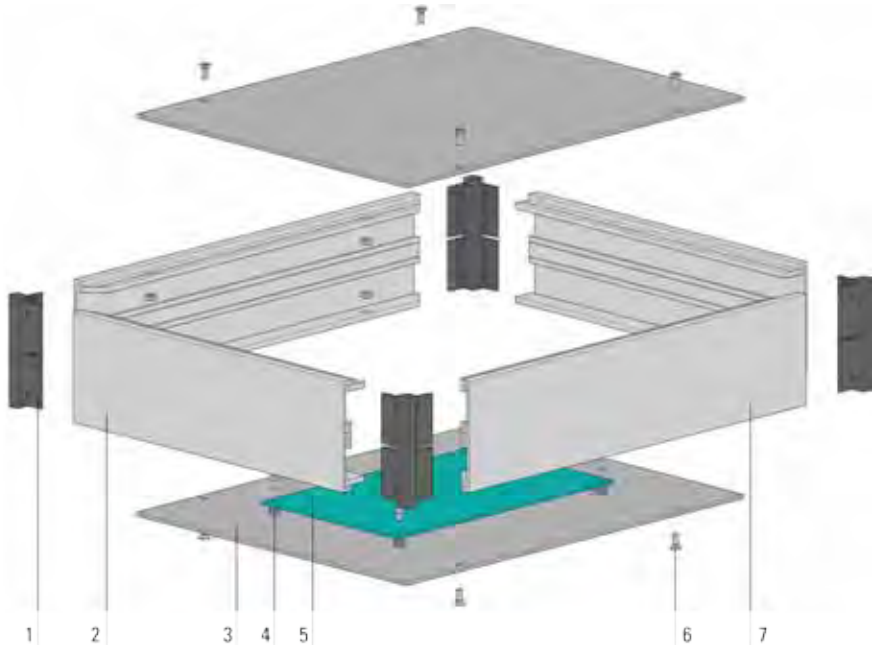
The Series 73 is a versatile slim-line case series made of aluminum that accommodates custom electronics. The cases are available in three different frame heights, the width and depth are flexible.
Available by the meter, the extrusions can be cut to the required length. The corner brackets are fully processed and require no extra work.

Overview

Basic units	D in mm			Material by length in mm	Page
	60	80	130	2500	
- Frame extrusion 60/80 mm	●	●		●	CAS 04 .69
- Frame extrusion 130 mm			●	●	CAS 04 .69

Series 73

// Product information

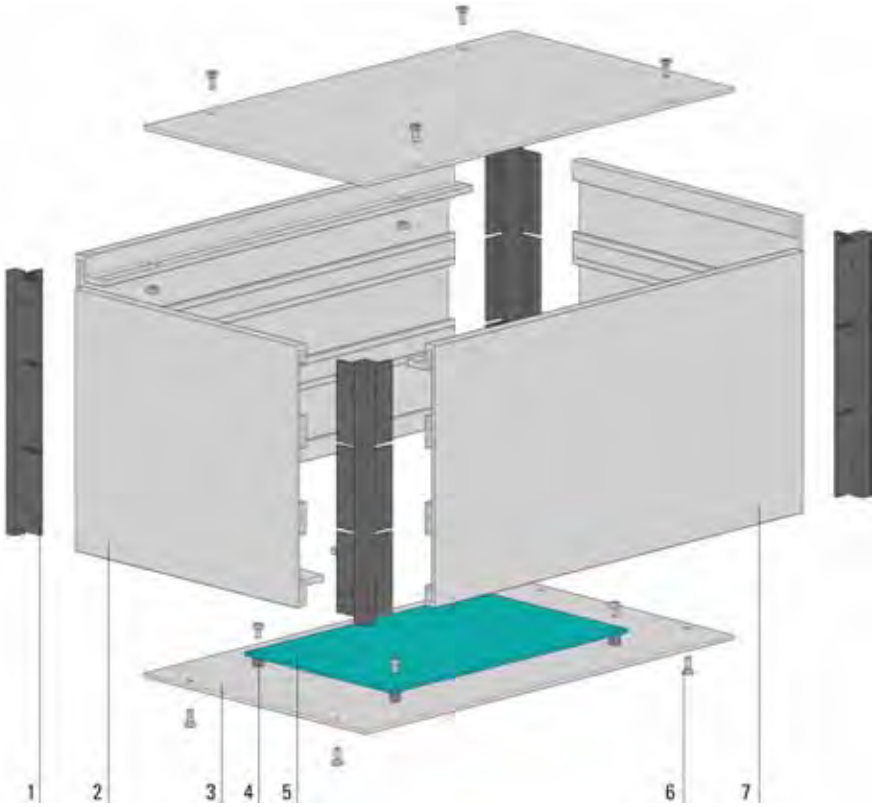


Configuration examples

The diagram shows the configuration of a Series 73 slimline case with a depth of 60 or 80 mm.

1 Mounting bracket (Al-extrusion)
2 Frame extrusion (by length 2500 mm)
3 Front/rear panel*
4 Standoff*
5 Printed circuit board*
6 Assembly hardware
7 Frame extrusion (by length 2500 mm)

Parts marked with * are not included in the scope of delivery of the basic unit, i. e. must be ordered separately.



The diagram shows the configuration of a Series 73 slimline case with a depth of 130 mm.

1 Mounting bracket (Al-extrusion)
2 Frame extrusion (by length 2500 mm)
3 Front/rear panel*
4 Standoff*
5 Printed circuit board*
6 Assembly hardware
7 Frame extrusion (by length 2500 mm)

Parts marked with * are not included in the scope of delivery of the basic unit, i. e. must be ordered separately.

Surface finishing

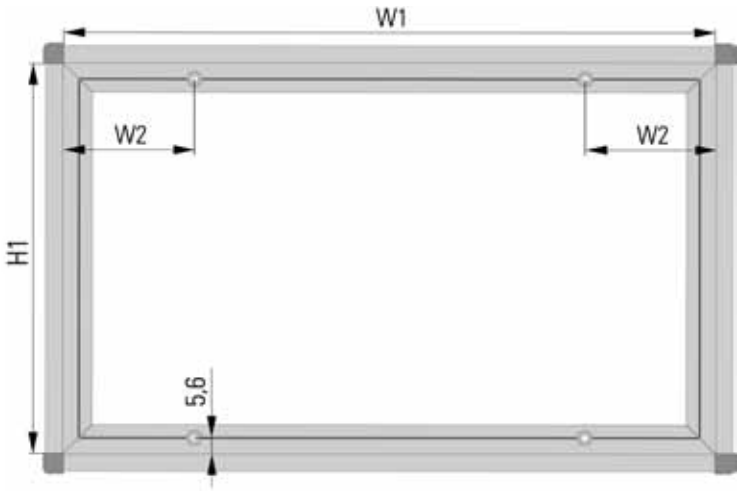
– Frame extrusion raw,
  option of anodized, cutting edges raw
– Corner brackets anodized, cutting edges raw,
  option of individually anodized

// Notes on mounting/overall dimensions

Dimensions specified in ordering tables
The dimensions are specified in relation to the application.

Series 73

Dimension diagrams



Front view for cases made of frame extrusions with depth D1 = 60 mm or 80 mm

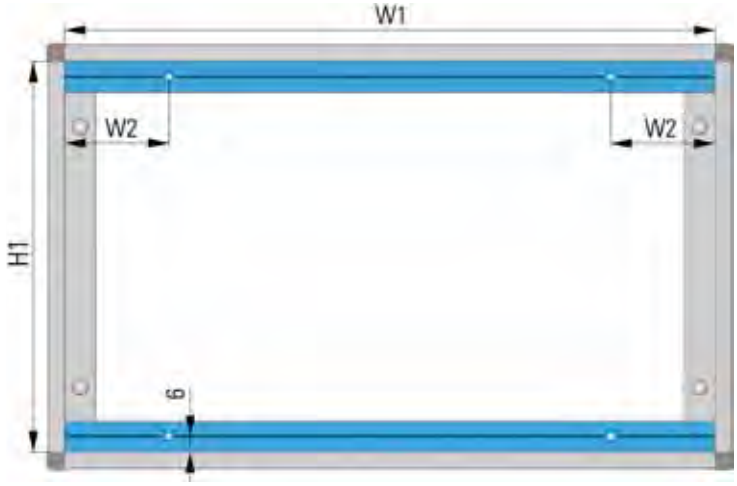
W1 = Front panel width
H1 = Front panel height

W1 - 20 mm = inner mounting dimension

W2 = Recommended clearance for
Extrusion length 100 - 149 mm = 20 mm
Extrusion length 150 - 299 mm = 30 mm
Extrusion length 300 - 400 mm = 50 mm

Side view

D1 = Depth of frame extrusion
= 60 mm or 80 mm



Front view for cases made of frame extrusions with depth D1 = 130 mm

W1 = Front panel width
H1 = Front panel height

W1 - 20 mm = inner mounting dimension

W2 = Recommended clearance for
Extrusion length 100 - 149 mm = 20 mm
Extrusion length 150 - 299 mm = 30 mm
Extrusion length 300 - 400 mm = 50 mm

Rear view for cases made of frame extrusions with depth D1 = 130 mm

W1 = Rear panel width
H1 = Rear panel height

W1 - 20 mm = inner mounting dimension

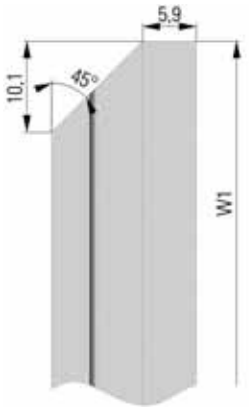
W2 = Recommended clearance for
Extrusion length 100 - 149 mm = 20 mm
Extrusion length 150 - 299 mm = 30 mm
Extrusion length 300 - 400 mm = 50 mm

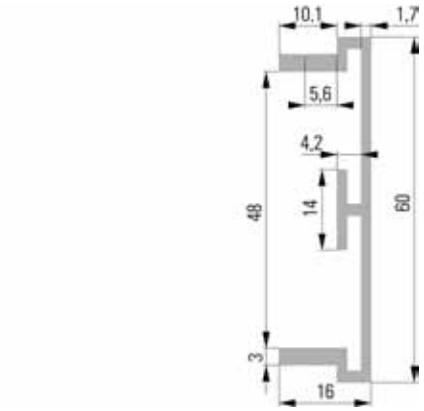
Side view

D1 = Depth of frame extrusion
= 130 mm

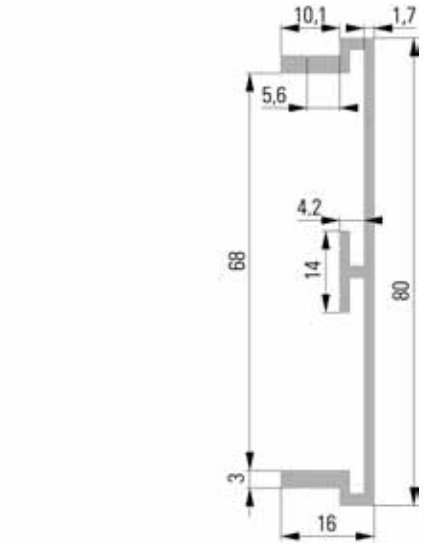
Series 73

// Product information

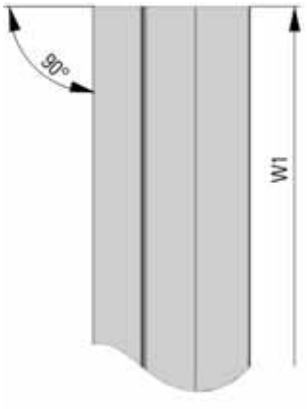


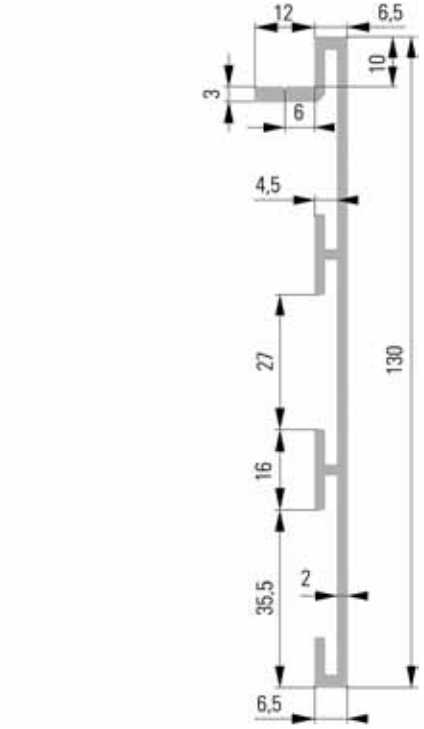


Frame extrusion 60 mm (D1)

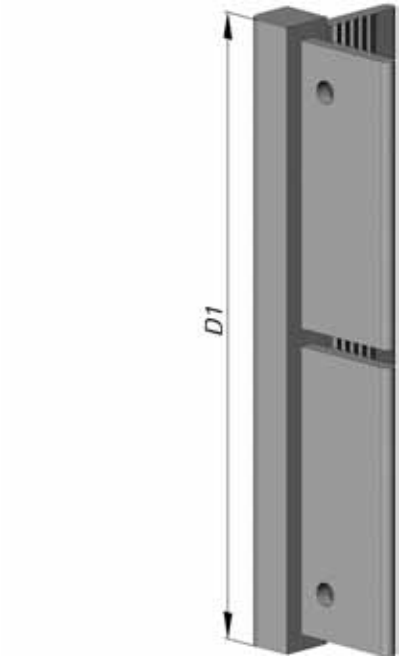


Frame extrusion 80 mm (D1)

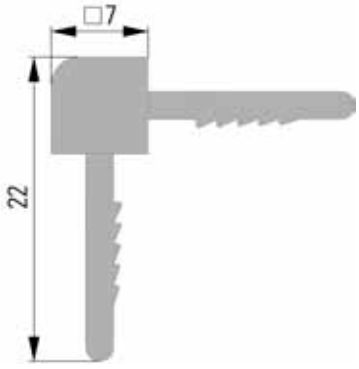




Frame extrusion 130 mm (D1)



Corner brackets



Top view of corner bracket

// Manufacturing tolerances

All parts are subject to POLYRACK's factory specifications, whereby:

Extrusion specifications comply with DIN EN 12020-1

Punched parts comply with DIN ISO 6930-1/6930-2 and DIN 6932

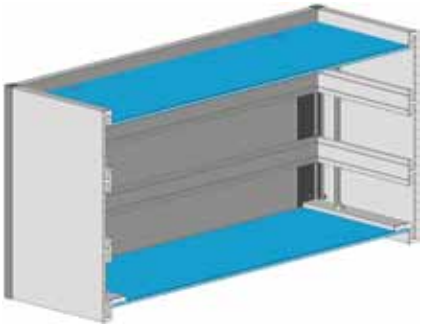
Series 73

Basic units

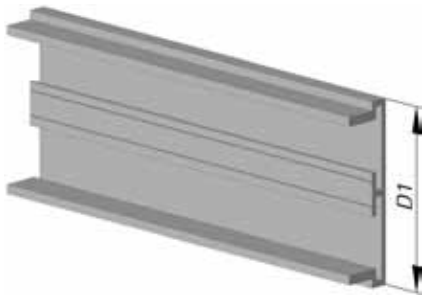
The Series 73 basic units are available in 2 versions made of extrusions (available by length, L = 2500 mm). The two versions differ in depth, required cut and method of extrusion assembly.

Features of the basic units

Series 73 case, 60/80 mm frame extrusion
Frame extrusions miter-cut 45°
Contact surfaces of front/rear panels make full contact (to 4 frame extrusions)



Series 73 case,130 mm frame extrusion
Frame extrusions cut 90°
Contact surfaces of front/rear panels make contactto only 2 frame extrusions, respectively



Series 73 case, standard, 60/80 mm frame extrusion

Material
Aluminum extrusion, raw or anodized/cutting edges raw

Scope of delivery
Slim-line extrusion
(Extrusion L = 2500 mm) 1 pc

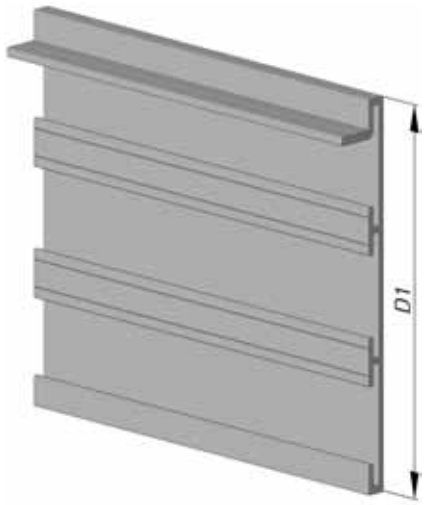
D1 = extrusion depth

Delivery form
In units for self-assembly

Notes
– Miter-cut 45°
– Corner brackets must be ordered separately.
– Front/rear panels on request

Ordering table

D1 in mm	L in mm	Raw	Anodized
60	2500	90 30 10 00	90 30 00 00
80	2500	90 31 10 00	90 31 00 00



Series 73 case, standard, 130 mm frame extrusion

Material
Aluminum extrusion, raw or anodized/cutting edges raw

Scope of delivery
Slim-line extrusion
(Extrusion L = 2500 mm) 1 pc

D1 = extrusion depth

Delivery form
In units for self-assembly

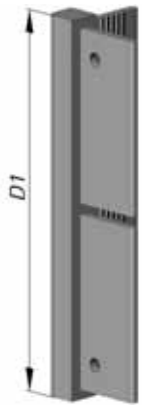
Notes
– Cut 90°
– Corner brackets must be ordered separately.
– Front/rear panels on request

Ordering table

D1 in mm	L in mm	Raw	Anodized
130	2500	90 32 10 00	90 32 00 00

Series 73

// Single components



Corner bracket – Series 73

To construct the case, the corner brackets are compression-joined with the frame extrusions.

Scope of delivery
Corner bracket 1 pc

Material
– Aluminum extrusions anodized/ cutting edges raw, option of individually anodized

Delivery form
In units for self-assembly

Ordering table

D1 in mm	L in mm	Anodized	Individually anodized
60	2500	90 34 11 00	90 34 01 00
80	2500	90 34 12 00	90 34 02 00
130	2500	90 34 13 00	90 34 03 00

CasTEC
Small equipment case

CasTEC

Product information

The CasTEC case series was designed specifically for use in harsh industrial environments. The case consists of two covers made of die-cast aluminum. The sealing profile required for IP 65 compliance is positioned internally in the top cover, recessed.
The possibility of unintentional damage is thus practically excluded. This guarantees the reliability of the case, even when it is frequently opened and closed. A chassis plate can be mounted in the base of the bottom cover. Easy-to-mount and retrofittable mounting flanges enable wall mounting.

Chassis plate and mounting flanges are optionally available for every case size.

Standards

– Protection class IP65 in accordance with IEC 60529

Note

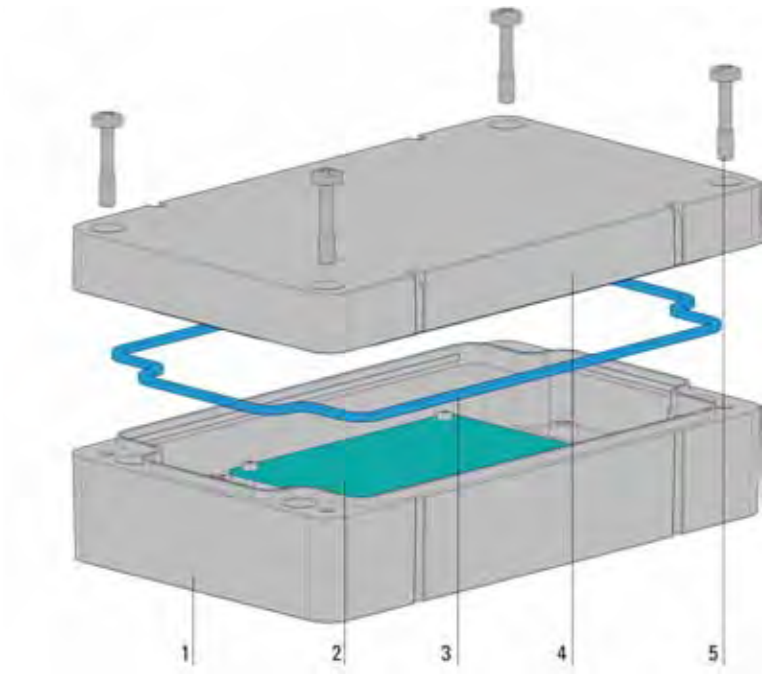
– No grounding straps, but these can be introduced individually

Overview

Basic units	H1 in U			W1 in mm		D in mm		Page
	55	65	105	200	260	120	160	
- Standard	●			●	–	●	–	CAS 04 .77
		●		–	●	–	●	CAS 04 .77
			●	–	●	–	●	CAS 04 .77

CasTEC

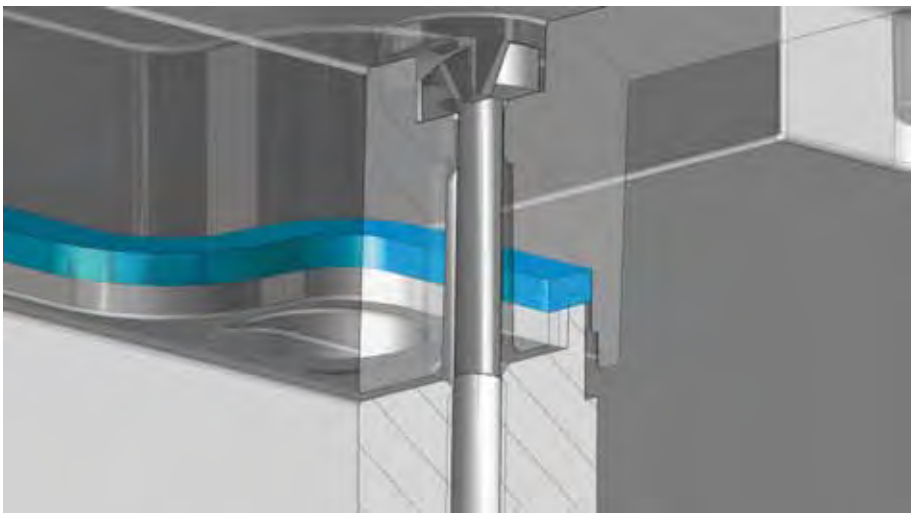
// Product information



The diagram shows the configuration of a CasTEC Series die-cast case.

1 Bottom cover
2 Printed circuit board*
3 IP gasket
4 Top cover
5 Assembly hardware

Parts marked with * are not included in the scope of delivery of the basic unit.



The gasket required for IP 65 compliance is positioned in the top cover, recessed.

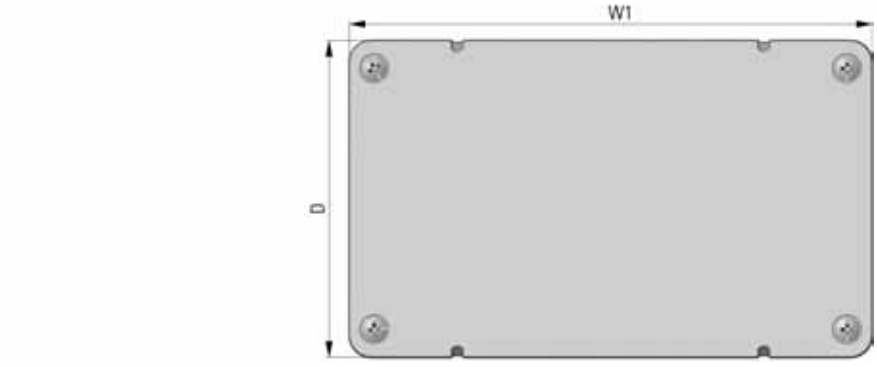
Surface finishing

– Case covers made of die-cast aluminum, powder-coated "anthracite-metallic"
– Molded gasket made of EPDM, 50 Shore

// Notes on mounting/overall dimensions

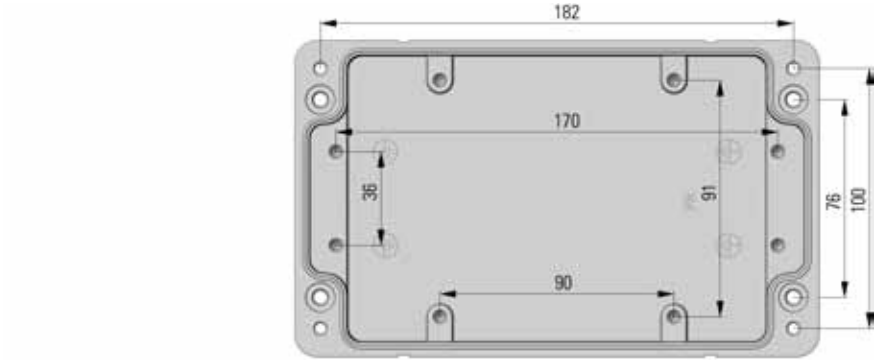
Dimensions specified in ordering tables
The dimensions are specified in relation to the application.

Dimension diagrams

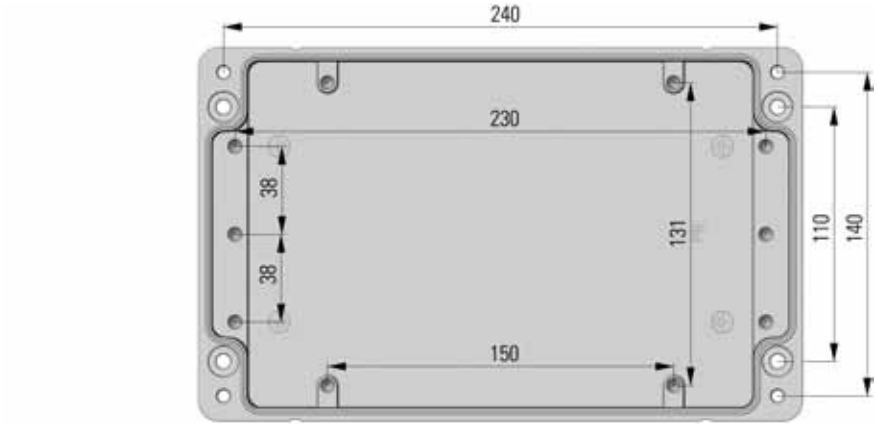


Front view
W1= total width
H1 = total height

Side view



Interior view (W1 = 200 mm)
All threads M5



Interior view (W1 = 260 mm)
All threads M6

// Manufacturing tolerances

All parts are subject to POLYRACK's factory specifications, whereby:
Die-cast parts comply with DIN 1688-4

CasTEC

// Basic units

Basic unit

In the CasTEC Series there is one basic unit available.

Features of the basic unit

The CasTEC Series cases are available in 3 sizes.

55 x 200 x 120 mm

65 x 260 x 160 mm

105 x 260 x 160 mm

CasTEC case, standard

Scope of delivery

Bottom cover	1 pc
Top cover	1 pc
Assembly kit including molded gasket	1 pc

Delivery form

In units for self-assembly

Notes

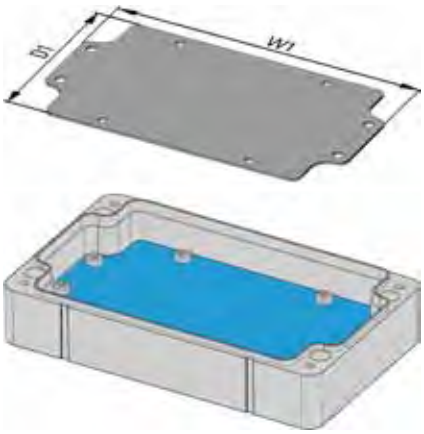
– Chassis plate must be ordered separately.
– The assembly kit for cases where
W1 = 200 mm includes:
Pan head screws M5 x 27 mm
W1 = 260 mm:
Pan head screws M6 x 27 mm

Ordering table

H1 in mm	W1 in mm	D in mm	Order no.
55	200	120	**21 01 00 01**
65	260	160	**21 01 00 02**
105	260	160	**21 01 00 03**

// Single components

Chassis plate, wall-mounting kit



Chassis plate – CasTEC

For mounting custom electronics

Material
Sheet steel, hot-dip galvanized 1.5 mm

Scope of delivery

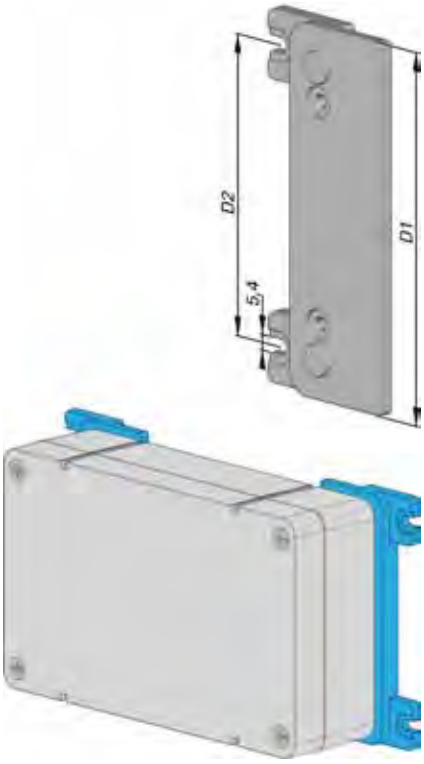
Chassis plate	1 pc
Assembly kit	1 pc

Delivery form
In units for self-assembly

Note
– The assembly kit for cases where W1 = 200 mm includes:
Cylinder head screws M5 x 8 mm
W1 = 260 mm:
Cylinder head screws M6 x 8 mm

Ordering table

W1 in mm	W2 in mm	D in mm	D1 in mm	Order no.
200	185	120	105	**21 01 00 21**
260	245	160	145	**21 01 00 22**



Wall mounting kit – CasTEC

For mounting to custom wall-mount plate or for wall mounting

Material
Die-cast aluminum, powder-coated "anthracite metallic"

Scope of delivery (1 PU)

Wall mounting plate	2 pcs
Assembly kit	1 pc

Delivery form
In units for self-assembly

Note
– The assembly kit for cases where D1 = 120 mm includes:
Pan head screws M5 x 30 mm
D1 = 160 mm:
Pan head screws M6 x 30 mm

Ordering table

For D in mm	D1 in mm	D2 in mm	Order no.
120	128	103	**21 01 00 11**
160	168	143	**21 01 00 12**

Assembly kits

Case assembly kit – CasTEC

Scope of delivery

Usage	Description	Version/ Material	Standard	Quantity	Order no.
Screwing top/bottom covers into place (W1 = 200 mm)	Pan head screw	M5 x 27 mm A2		4 pcs	21 01 00 30
Screwing top/bottom covers into place (W1 = 260 mm)	Pan head screw	M5 x 27 mm A2		4 pcs	21 01 00 31

Chassis plate assembly kit – CasTEC

Note
– available as A2 version on request

Scope of delivery

Usage	Description	Version/ Material	Standard	Quantity	Order no.
Mounting the chassis plate in the case (W1 = 200 mm)	Cylinder head screw	M5 x 8 mm Steel zinc-plated	DIN 7985	8 pcs	21 01 00 32
Mounting the chassis plate in the case (W1 = 260 mm)	Cylinder head screw	M6 x 8 mm Steel zinc-plated	DIN 7985	8 pcs	21 01 00 33

Wall mounting assembly kit – CasTEC

Scope of delivery

Usage	Description	Version/ Material	Standard	Quantity	Order no.
Mounting the wall-mounting plate to the case (D = 120 mm)	Pan head screw	M5 x 30 mm A2	DIN 7985	4 pcs	21 01 00 34
Mounting the wall-mounting plate to the case (D = 160 mm)	Pan head screw	M5 x 30 mm A2	DIN 7985	4 pcs	21 01 00 35

//03 SMALL EQUIPMENT CASES
ACCESSORIES

// Content

ACCESSORIES

// Chassis feet

Chassis feet

Tilt foot – Series 72

Can be used as an alternative to the self-adhesive rubber feet that are supplied as standard; can be mounted later

Material
Case/tilt feet ABS
Anti-slip insert NBR

Scope of delivery

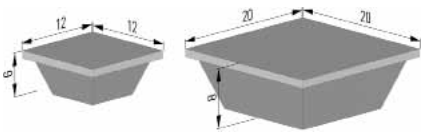
Foot, rear	2 pcs
Tilt foot, front	2 pcs
Assembly kit	1 pc

Delivery form
As kit for self-assembly

Notes
– Max. load 5 kg
– Tilt angle of case 10°
– With anti-slip inserts

Ordering table

Color	Order no.
Black	79 50 30 00
Gray	79 50 31 00



Rubber foot, self-adhesive

Can be used for all series

Material
Hard rubber, black

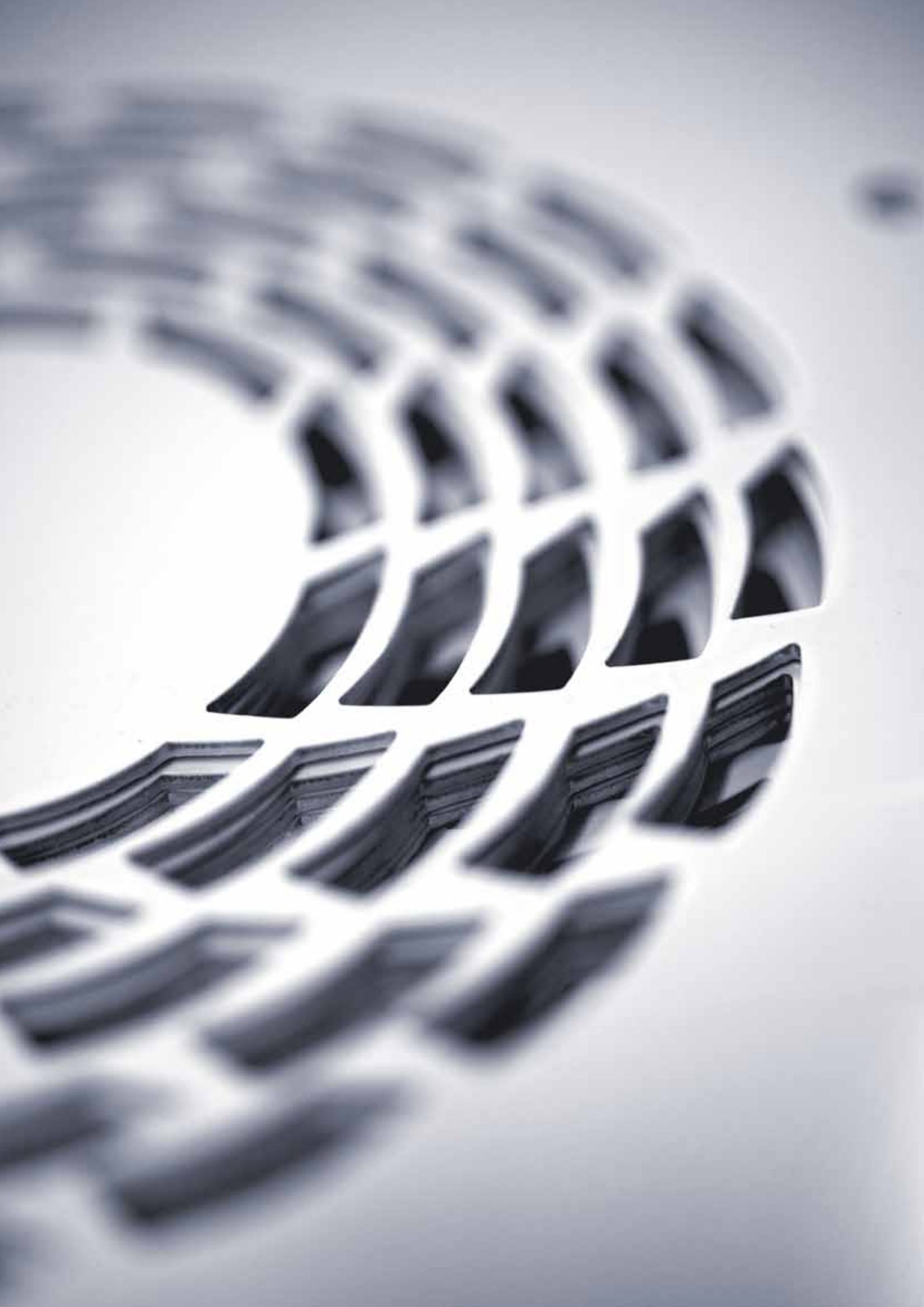
Scope of delivery

Rubber foot	1 PU (20 pcs)

Delivery form
In units for self-assembly

Ordering table

Dimensions	Order no.
12 x 12 mm	79 50 00 00
20 x 20 mm	79 50 01 00



ACCESSORIES

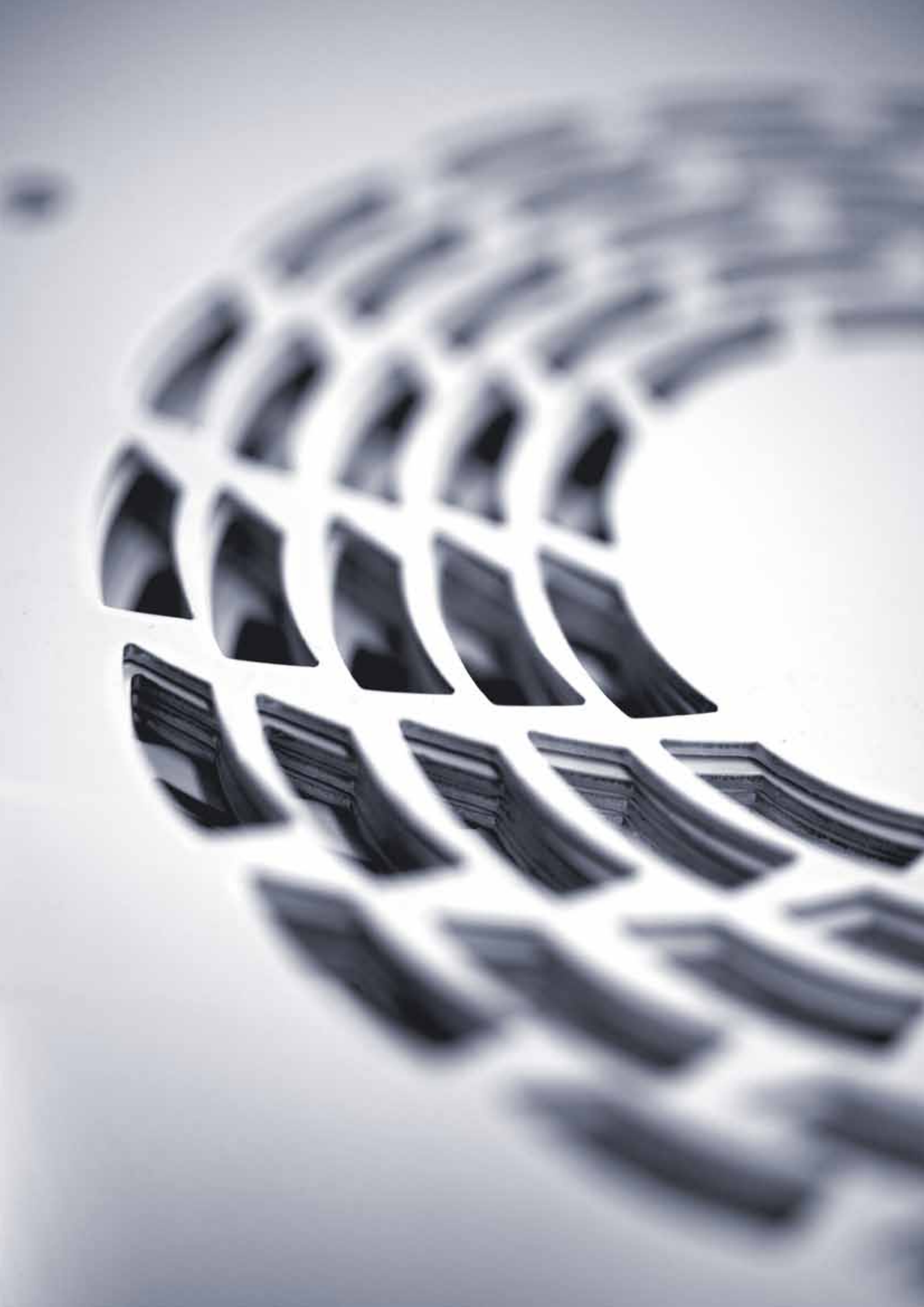
// Assembly components

Ordering table

Usage		Description	Version Material	Standard	SmarTEC	Sequence	Series 72	Quarto	Series 73	CasTEC	Order no.	PU
Mounting top/ bottom cover		Cross-recessed raised countersunk head screw	M4 x 8 mm Steel nickel-plated	DIN 966			●				79 91 42 00	1 PU (100 pcs)
		Square nut with nut holder	M4/SW7 Steel zinc-plated/PP				●				79 91 44 00	1 PU (100 pcs)
Mounting front/rear panel		Cross-recessed countersunk head screw	M3 x 8 mm Steel nickel-plated	DIN 965					●		79 91 16 00	1 PU (100 pcs)
		Press nut	M3 Steel zinc-plated/ passivated - colorless						●		79 91 38 00	1 PU (100 pcs)
		Cross-recessed countersunk head screw	M3 x 8 mm Steel blue zinc-plated	DIN 7500				●			79 51 50 42	1 PU (100 pcs)
Mounting front panel		Cross-recessed raised countersunk head screw	M4 x 10 mm Steel nickel-plated				●				79 91 06 00	1 PU (100 pcs)
Mounting rear panel		Cross-recessed pan head screw	M4 x 10 mm Steel nickel-plated	DIN 7985			●				79 91 33 00	1 PU (100 pcs)
Mounting tilt feet		Cross-recessed pan head screw	M3 x 6 mm Steel nickel-plated	DIN 7985			●				79 91 40 00	1 PU (100 pcs)
		Square nut	M3/SW5 Steel nickel-plated	similar to DIN 562			●				79 91 54 00	1 PU (100 pcs)
Mounting carrying/ support handle		Cross-recessed pan head screw	M5 x 12 mm Steel nickel-plated	DIN 7985			●				79 91 32 00	1 PU (100 pcs)

Ordering table

Usage		Description	Version Material	Standard	SmarTEC	Sequence	Series 72	Quarto	Series 73	CasTEC	Order no.	PU
Mounting slider for extra screw connection		Cross-recessed countersunk head screw	M3 x 12 mm Steel nickel-plated	DIN 965				●			**79 51 50 55**	1 PU (100 pcs)
		Hex nut	M3 Steel nickel-plated	DIN 934				●			**79 51 50 56**	1 PU (100 pcs)
Mounting side plate/cover hood to platform extrusion		Cylinder head screw with Torx T10 and dog point	M3 x 8 mm Steel nickel-plated								**79 51 50 41**	1 PU (100 pcs)



//CAS Appendix

// Glossary A - DIN

A

ABS
Acrylonitrile butadiene styrene (ABS) is in its raw form a colorless to gray plastic material; it has a high surface hardness and is therefore suitable for scratch-resistant and semi-gloss surfaces. It features good impact and oil resistance. ABS is used for automotive and electronic parts as well as cases for electronic devices.

AC
"Alternating Current" (AC): electric current which periodically reverses direction.

ADC
Automatic (mechanical or electronic) daisy chaining see also Daisy Chain/Daisy Chaining and EADC

ANSI
The "American National Standards Institute" (ANSI) is the American organization responsible for standardization (equivalent of the German DIN), which defined e.g. the codification of character sets for computers.

ASA-PC
The plastic blends made of acrylonitrile styrene acrylate (ASA) and polycarbonate (PC) have high thermal stability, good chemical resistance and excellent resistance to weather, aging and yellowing. (Trade marks i.e. Luran® S, Terblend S)

AT
"Advanced Technology" (AT) stands for a particular generation of circuit boards for personal computers. AT-class computers are characterized by the 80286 processor from the Intel Corporation or by the 16-bit ISA bus extension. For this reason the ISA-bus is also referred to as the AT-bus.

ATX
ATX refers to a main board layout specification that was defined by Intel. ATX boards are characterized by short cables to the hard drive which allows for high transfer rates, better ventilation of the CPU and the possibility to start the computer automatically.

B

Bridge
A bridge interconnects two independent bus architectures and coordinates the communication in both directions. A bridge can be designed as a plug-in card or as a piggyback module. For special applications the components that are required can be implemented on the backplane. The bridge can for example provide for a CompactPCI system with more than 8 slots or be used to interconnect different bus architectures.

C

CE
The CE mark (Conformité Européenne, meaning "European conformity") identifies conformity of a product with respect to product safety according to EU law. By applying the CE mark the manufacturer confirms that the product complies with the effective European Union regulations.

CompactPCI
"Compact Peripheral Component Interconnect Bus" (CompactPCI) is a registered trademark of the PCI Industrial Computer Manufacturers Group (PICMG). CompactPCI systems are standardized microcomputers. The main advantage of CompactPCI lies in its hot-swap capabilities.

CompactPCI PlusIO
Extension of the existing parallel data transmission of the CompactPCI busses according to PICMG 2.0R3.0 to include serial connection (USB, PCIexpress, Ethernet, etc.).
Enables the use of both data transmission approaches as a hybrid solution and opens the transfer to solely serial. The mechanics is based on the known IEEE 1101.10 standard.

D

Daisy Chain
A daisy chain is a number of hardware components that are connected in series. The first component is connected directly to the computer, and all other components are linked to each other in a chain.

Daisy Chaining
The connected components in a daisy chain can be allocated different priorities for the exchange of data, which is meant to prevent conflicts and malfunctions. Daisy chaining on a circuit board can be done either mechanically or electronically.

DC
"Direct Current" (DC): current with just one polarity

Differential Pair
Describes the pairwise coupling technology of serial data lines which work with a very high transmission rate. Routing, as well as the length and coaxial geometry are the determining parameters, enabling speeds >5Gbits. For this, special high-speed simulation tools are used during PCB design.

DIN
Abbreviation for "Deutsches Institut für Normung" (German Institute for Standardization): comparable to the American ANSI.

// Glossary DIN - H

DIN 41494 (replaced by: IEC 60297)
DIN 41494 is the basic specification for the 19" construction system. It is separated into different parts and defines the dimensions for the individual assemblies.

DIN 41612 (replaced by: IEC 60603-2)
DIN 41612 is the basic standard for printed circuit connectors. It defines the design and assembly characteristics for connectors

DIN 41617 (replaced by: IEC 60603-1)
DIN 41617 is the basic standard for printed circuit connectors. It defines the design and assembly characteristics for connectors.

DIN 6930-1
Specification for technical terms of delivery for punched parts made of steel.

DIN 6930-2
This specification defines the general tolerances for punched parts made of steel.

DIN 6932
This specification defines the design rules for punched parts made of steel.

DIN EN 12020-1
Specification for technical terms of delivery for extruded precision profiles made of aluminum or aluminum alloys.

DIN EN 12020-2
Specification for max/min dimensions and shape tolerances for extruded precision profiles made of aluminum or aluminum alloys.

Double Eurocard
The double Eurocard is a circuit board according to IEC 297-1. The card measures 233.35 mm x 160 mm. The term "double Eurocard" means that two cards can be inserted into the space one above the other.

E

EADC
"Electronic Automatic Daisy Chaining" (EADC) is for example used in VME64x and replaces the mechanical switch connector.

EMC
Electromagnetic Compatibility (EMC) is the ability of an electrical device to function properly in its electromagnetic environment, without negatively influencing this environment, which also includes other devices.
The specifications for electromagnetic compatibility are primarily based on three European norms.

The generic standard EN 50081 covers both emitted interference and interference immunity in residential, commercial and light industrial environments. The EN 55022 norm defines the limits and measurement procedures for RFI of IT equipment.

EN
The European Norms (EN) are rules which have been ratified by one of the three European standardization committees: the European Committee for Standardization (CEN), the European Committee for Electrotechnical Standardization (CENELEC) or the European Telecommunications Standards Institute (ETSI).

EN 55022
This specification defines standards for information technology equipment and essentially covers the topics of radio interference and defines limits and measuring procedures.

EN 60950
This specification defines the safety of equipment for information technology.

ESD
Means both "Electrostatic Discharge" and "Electrostatic Sensitive Devices" (ESD).
"Electrostatic Discharge" is the process of charge equalization between solid, liquid or gaseous media that have different electrostatic charges. The charge equalization is usually accompanied by a spark or other sign of discharge.

ETSI
Members of the "European Telecommunications Standards Institute" (ETSI) include parts of the EU administration, European manufacturers and research institutes.
ETSI standards are referred to as ETS (European Telecommunication Standards).

Eurocard
The Eurocard is a circuit board according to IEC 297-1. The card measures 100 mm x 160 mm.

F

Fabric
Name for the switch-slot in networking bus topologies.

G

H

H.110
Extension of bus systems with a bus topology as required for telecommunication applications. This means e.g. providing special signal lines for the external connection of telephone installations (high-voltage test > 1.5 KV), as well as guaranteeing the supply of an operating voltage of 48 V.

Heat pipe
Metal pipe for dissipation of power loss on an electronic component (e.g. CPU). Inside the pipe there is (hermetically sealed) a vaporizable medium which improves dissipation of thermal energy. The pipe can be formed with a tool. The internal structures are also partially designed as capillary systems to improve the cooling effect. The heat pipe is used for convectional and conductive cooling in passively cooled assemblies.

Heat sink
Heat sink take over the heat dissipation in the environment by enlarging the surface of a component with power loss.

HF
High frequency (HF) is the designation for frequencies that are higher than audible sound waves (low frequency).
The frequency band from 3 to 30 MHz is also known as high frequency.

Hot swap
This refers to the exchange of computer components while the computer is running.
There are three defined stages:
1. Basic hot swap: the component that is going to be exchanged has to be deactivated beforehand or the computer configuration has to be changed first.
2. Full hot swap: software installed in the component that is to be exchanged or in another component takes care of activation or deactivation.
3. High availability model: a separate hot swap controller takes over the control centrally. This enables failed boards to be deactivated automatically and therefore prevents the computer from crashing.

HP
Abbreviation for "Horizontal Pitch" or standard width measurement which defines the width for plug-in modules in 19" construction system. One HP equals 5.08 mm.

I

IEC
Abbreviation for "International Electrotechnical Commission". The IEC is an international standards organization which is comprised of all national electrical engineering committees. It develops and adopts electrotechnical standards on a global level.

IEC 60297 (previously DIN 41494)
This is the generic specification for 19" technology. It is subdivided into 4 sections and defines the dimensions of the individual assemblies IEC 60297 defines in different sub-documents the mechanical structure of PCB's, subracks and cabinets of 19" construction. These specifications define the mechanical structure in terms of height, width and depth. Although the structure was defined on the basis of 19" the dimensions of the boards, subracks and frames are given in metric. The dimension 19" equals 482.6 mm.

IEC 60297-1
The specification 60297-1 defines front panel and rack dimensions. The dimensions given are linked to the following specification which defines the detailed dimensions of the 19" cabinets.

IEC 60297-2
This sub-document defines cabinet dimensions, incremented pitches for the subracks, covers, doors and bearing elements.

IEC 60297-3-101
Describes the dimensions for modular subracks and the plug-in boards.

IEC 60297-3-102
Supplements the previous sub-document 3-101 with mechanical fixtures for extracting and inserting boards.

IEC 60297-3-103
Specifies coding elements, guiding pins and guide rails.

IEC 60603-1 (previously DIN 41617)
This is the basic specification for PCB connectors. It defines the the design and assembly characteristics for connectors.

IEC 60603-2 (previously DIN 41612)
This is the basic specification for PCB connectors. It defines the the design and assembly characteristics for connectors.

IEC 821
The IEC 821 defines the specification for the VMEbus.

IEEE
The "Institute of Electrical and Electronics Engineers" (IEEE) is a non-profit organization which encourages and standardizes technical developments.

IEEE 1101.10
Standard which defines additional mechanical specifications for microcomputer systems. This specification applies to all microcomputer applications that have to conform to the 19" standard.

IEEE 1014
Defines the specification for the VMEbus.

IN-Board termination
The termination is positioned between the first and second and the last and next-to-last slots on the backplane. This has the advantage of not affecting the outer dimensions of the backplane due to the termination.

// Glossary IP - P

IP
"International Protection" (IP). IP protection classes define the protection of electrical devices against contact, foreign bodies or moisture. Cases and covers must be designed so as to meet the IP protection class requirements. The IP Protection Class is defined by an identification number.
The definitions and eyplonation for the IP identification numbers are given in the specifications DIN VDE 0470 Part 1, EN60529 and IEC 529.

In detail:

First digit	Protection against contact	Protection against foreign objects
0	Not protected	Not protected
1	Large body parts (back of hand)	Foreign objects ø > 50 mm
2	Fingers	Foreign objects ø > 12 mm
3	Tools and wires ø > 2.5 mm	Foreign objects ø > 2.5 mm
4	Tools and wires ø > 1.0 mm	Granular foreign objects ø > 1.0 mm
5	Complete protection against contact	Dust protected
6	Complete protection against contact	Dust tight

Second digit	Protection against water
0	Not protected
1	Dripping water (vertically falling drops)
2	Dripping water (falling at an angle of up to 15°)
3	Spraying water (max. 60°)
4	Splashing water
5	Water jets
6	Powerful water jets
7	Immersion up to 1 m
8	Immersion beyond 1 m

ISA
"Industry Standard Architecture" (ISA) refers to a bus that was developed by IBM and is still used today on almost all main boards for reasons of compatibility.

ISO
"International Organization for Standardization" (ISO) is an international board composed of representatives from all standards organizations.

J
JTAG
"Joint Test Action Group" (JTAG) defines an interface to test systems that enables a system test even for installed and complex electronic assemblies. Before the system is put into operation, a boundary scan of the individual assemblies and functions can be performed. In addition, the electronic assemblies can be programmed and also debugged.

K

L
LVDS
"Low Voltage Differential Signal" (LVDS), typical triggering mode for TFT displays.

M
MDC
Manual Daisy Chaining (MDC) with jumpers for VMEbus.

MPS
Based on a Microcomputer Packaging System (MPS), industrial microcomputers are built for VMEbus, VME, VME64x, CompactPCI and Industrial PC applications mainly in the industrial environment.

N
NEMA
The "National Electrical Manufacturers Association" (NEMA) is a federation of the electronics industry in North America. The NEMA controls a variety of standards in relation to the electronics industry such as the National Electrical Code.

Node
Name for the end-point slot of a network bus topology.

O
ON-Board-Termination
The termination is positioned before the first and after the last slot on the backplane, which increases the outer dimensions of the backplane by approximately 2 HP on both the right and left sides.

Open Frame
This term is used in connection with power supply units. So-called "open-frame power supplies" do not have a cover, which means that the electronic components in the power supply are easily accessible.

P
PA
Polyamides (PA) usually refer to synthetic and technically usable thermoplastics. Most of the technically significant polyamides are partially crystalline thermoplastic polymers and feature high mechanical strength, stiffness and durability. They also provide good chemical resistance and processibility.

PBT
Polybutylene terephthalate (PBT) is used e.g. for cases in the electrical and electronics industries and for connector housings. (Trade marks e.g. Ultradur, Crastin)

PC
In its transparent form polycarbonate (PC) is used for making light conductors. (Trade marks e.g. Lexan, Makrolon)

PC-ABS
Polycarbonate+ABS blends (PC+ABS) combine the advantages of PC and ABS – both materials are used in the electronic packaging industry. The impact resistance and heat resistance, the high-grade semi-gloss and scratch-resistant surface, and the high stiffness and durability should be particularly emphasized. A typical application is casings for electronic devices.

PCI
"Peripheral Component Interconnect" (PCI) defines a standardized bus structure for interfacing between peripherals and the chipset of a CPU, as well as being the basis for several other bus standards, like Compact-PCI and PCI-Express. It is used for normal PCs and also for industrial computer-based solutions.

PE
Polyethylene (PE) is a thermoplastic which is produced by polymerization of ethylene. Polyethylene is mainly used for making cable insulation and e.g. for shrink-wrap film.

PFC
The power factor defines the relationship between active power and apparent power for an electrical appliance. The higher the power factor for any given appliance, the higher its effectiveness. The power factor correction (PFC) serves to increase the effectiveness of an electrical appliance. This is achieved by the reduction of heat loss, reduction of high frequency EMC interference as well as by improvement of the mains voltage distribution process.

PICMG
The "PCI Industrial Computer Manufacturers Group" (PICMG) is a consortium of more than 600 companies that work in close cooperation to develop specifications for high-end telecommunications and industrial computer applications. The PICMG specifications include the CompactPCI for Eurocard formats.

PMMA
Polymethyl methacrylate (PMMA), also known as acrylic glass or Plexiglas, is a synthetic, glass-like thermoplastic. PMMA is generally used in display applications.

P0
The P0 is an additional I/O connection that can be freely allocated and is used in VME64x backplanes. It is positioned between the J1 and J2 levels. A PCI Bus or network bus can be connected to the P0. (See also VME64x specification ANSI/VITA 1.1-1994 thru 1.1-1997)

POM
Thanks to its high stiffness, low friction and excellent dimensional and thermal stability, polyoxymethylene (POM), also known as polyacetal, is used as a technical plastic typically for high-precision parts. (Trade marks e.g. Hostaform, Delrin)

PP
Polypropylene (PP), also known as polypropene, is a thermoplastic that is closely related to HDPE. It is used e.g. for making injection molded parts, fiber, thermoformed parts and semi-finished parts.

PPE or PPO
Polyphenyl ether (PPE), formerly polyphenylene oxide (PPO), is rarely used in its pure form. It is typically blended with polystyrene, impact-resistant styrene-butadiene copolymer or polyamide. The material is used for making formed parts in the electronics, household and automotive industries, where high heat resistance, dimensional stability and accurate dimensions play an important role. (Trade mark e.g. Noryl)

PS
Polystyrene (PS) is a transparent, amorphous or semi-crystalline thermoplastic. Polystyrene is used as thermoplastically processible material or as foamed material (expanded polystyrene). Well known trade marks for foamed polystyrene are Styropor and Styrodur. The material provides good isolation and is used in electronics for making switches, inductors and cases. (High Impact Polystyrene, HIPS)

PSB
"Packet Switching Bus" (PSB) defines the extension of the CompactPCI as PSB2.16 or the VME64x as VITA31 and describes the bus topology for extension with a network bus on backplane level.

PT® screw
Thread-forming or self-tapping screw for plastics (especially thermoplasts), used e.g. for card guides.

PU
Abbreviation for packaging unit.

PWM
"Pulse Width Modulation" (PWM), typical triggering mode for speed-controlled fans.

Q

R

REACH
"Registration, Evaluation, Authorisation and Restriction of Chemicals" is an EU regulation on chemicals and their safe use.

// Glossary REAR I/O - UPS

Rear I/O
The term Rear I/O has to do with bus circuit boards. Rear I/O are pins on the rear of bus circuit boards which can be freely allocated so that the user can connect his expansion cards as needed.

Redundancy
This describes the availability of backup for a system-relevant assembly and its function. This guarantees that in the event of a failure the function will be taken over by the redundant assembly. Especially in the case of power supplies, two equivalent power supplies are generally intelligently connected in parallel so that a failed assembly can be exchanged during operation using hot swap technology. Indication of these functions is generally handled via the standard interfaces.

RoHS
"Restriction of Hazardous Substances Directive" (RoHS) is the EU directive 2002/95/EG on the restriction of the use of certain hazardous substances in electrical and electronic equipment.

RPM
"Revolutions per minute" (RPM), typical rotational speed signal for fans.

S

Shore
Shore hardness, named after Albert Shore, is a material parameter for elastomers and plastics and is defined in the specifications DIN 53505 and DIN 7868. To determine the hardness according to Shore the resistance of a material is measured as follows: a defined sample piece penetrates a material at a defined elastic force. The test results range from 0 to 100, whereby 0 represents the lowest and 100 the highest hardness. The hardness in Shore A is softer than that in Shore D, whereby there is an overlap between these two hardness scales. Example: 90 Shore A equals approximately 35 Shore D.

SMB
"System Management Bus" (SMB) is the bus structure used for bus systems for independent communication of system monitoring information. It is often based on a serial I²C bus and uses the IPMI protocol.

SMD
"Surface-mount device". These are electronic components that do not have connection wires but instead are mounted directly on the surface of an electronic circuit board and attached with solder.

SMT
"Surface-mount devices"(SMD), such as resistors, capacitors, unlike "wired components" using "through-hole technology" (THT), do not have connection wires but instead are mounted directly on to the surface of the PCB via soldered connection pins. This is called "surface-mount technology" (SMT).

T

Termination
Termination is a defined cable termination on a bus circuit board.

Touchscreen
Computer user interface (normally a specially coated glass plate) by means of which a technical device, usually a computer, can be directly controlled by touching specific program items. Mainly resistive or capacitive solutions are used for interaction with the screen. The controller needed for position analysis is connected to the main board via a standard interface (USB, serial, PS/2). Special drivers are needed amongst other for calibration.

TPE
Thermoplastic elastomers (TPE) are materials which can be processed thermoplastically and have properties that resemble those of rubber. TPE can be formed easily as they go through the plastic state during processing. They can be manufactured in hardnesses ranging from 5 Shore A up to 70 Shore D. Typical applications in the electronics industry are for parts such as IP seals or EMC shielding material.

U

U
Abbreviation for "Unit" (U) or standard height measurement. This defines the vertical height for plug-in modules in the 19" construction system.
1 U equals 44.45 mm

UL
"Underwriters Laboratory" (UL) is an independent organization which conducts safety tests and product certifications.

UL94
The UL94 standard "Tests for Flammability of Plastic Materials for Parts in Devices and Applications" from the Underwriters Laboratory (UL) describes a procedure to evaluate and classify the flammability of plastics.

UPS
"Uninterruptible power supply" (UPS): typically a parallel DC power supply via an additional rechargeable battery to back up the main power supply for a limited amount of time. Emergency operation is generally indicated via an additional interface, which can also be used for analysis (e.g. shut-down of the system).

V

VDE
Abbreviation for "VDE Verband der Elektrotechnik, Elektronik und Informationstechnik e.V." (Association for Electrical, Electronic & Information Technologies), based in Frankfurt am Main, Germany

VITA
Abbreviation for "VMEbus International Trading Association" (non-profit organization): Association of manufacturers and users of VMEbus products that has the goal of promoting and spreading VMEbus.

VME64x
Extension of the VMEbus to 64 bit technology. The extensions that are defined by IEEE 1101.10. (such as hot swap) are also integrated. The P0 connector provides the possibility for further bus extensions.

VMEbus
The VMEbus is a microcomputer bus system for real-time use. The VMEbus was originally designed by a consortium led by Motorola. Today the VMEbus is defined by the Standard IEEE 1014.

W

WEEE
WEEE is the abbreviation for "Waste Electrical and Electronic Equipment". This EU directive directive regulates the collection and recycling of electronic equipment. It also includes recycling rates for manufacturers.

WN
Abbreviation for "Werksnorm", POLYRACK's factory specifications

X

Y

Z

//CAS Appendix

// Information on RoHS, REACH, WEEE

// RoHS

POLYRACK TECH-GROUP products correspond to the requirements of European Directive 2002/95/EC (RoHS) unless we have been given instructions to the contrary. The corresponding status for each product is given in our business documents as appropriate.

// REACH

POLYRACK TECH-GROUP and its companies POLYRACK Electronic-Aufbausysteme GmbH, RAPP Kunststofftechnik GmbH and RAPP Oberflächenbearbeitung GmbH are primarily downstreamed users. The measures taken by our enterprises conform with those of the other market participants in the supply chain. Products of the POLYRACK TECH-GROUP comply as of todays status of knowledge to the requirements of REACH regulation EG 1907/2006.

// WEEE

POLYRACK TECH-GROUP is not a manufacturer in accordance with the European Directive 2002/96/EC (WEEE) and is therefore essentially released from this directive. Responsibility for fulfilling the required recycling quotas lies solely with the manufacturer of the end product.

// Brochure Remarks

We reserve the right to make technical changes in the course of ongoing development and improvement of our product ranges with respect to the information provided in our publications. Compensation cannot be claimed because of changes, omissions or printing errors.

// POLYRACK TECH-GROUP

// Contact information

// POLYRACK TECH-GROUP

POLYRACK TECH-GROUP
Holding GmbH & Co. KG
Steinbeisstraße 4
75334 Straubenhardt
Germany
Phone +49.(0)7082.7919.0
Fax +49.(0)7082.7919.330
info@polyrack.com
www.polyrack.com

// Companies of the TECH-GROUP

POLYRACK
Electronic-Aufbausysteme
GmbH
Steinbeisstraße 4
75334 Straubenhardt
Germany
Phone +49.(0)7082.7919.0
Fax +49.(0)7082.7919.330

RAPP
Kunststofftechnik
GmbH
Heinrich-Hertz-Straße 25
75334 Straubenhardt
Germany
Phone +49.(0)7082.7919.703
Fax +49.(0)7082.7919.630

RAPP
Oberflächenbearbeitung
GmbH
Forlenweg 12
75334 Straubenhardt
Germany
Phone +49.(0)7082.7919.651
Fax +49.(0)7082.7919.660

Metalle in Form
Geräteteile GmbH
Ottostraße 10
76227 Karlsruhe
Germany
Phone +49(0)721.94496.0
www.metalle-in-form.com

// Foreign subsidiaries

Switzerland

POLYRACK AG

Seefeldstraße 283
8008 Zürich
Switzerland
Phone +41(0)71.6951455
polyrack_ch@polyrack.com

USA / Canada

POLYRACK North America Corp.

1600 Highland Corporate Drive
Cumberland, RI 02864
USA
Phone +1.401.770.1500
Fax +1.401.770.1550
polyrack_us@polyrack.com

Asia/China

POLYRACK Science &
Technology Co., Ltd.
7th floor, Building No. 11
Langkou Industrial Park
DaLang Street,
Longhua New District
Shenzhen 518054
China
Phone +86.755.8202.8946
Fax +86.755.8202.8949
polyrack_asia@polyrack.com

Benelux, Belgium

POLYRACK Benelux S.P.R.L.

Rue Georges Cosse, 6
5380 Fernelmont
Belgium
Phone +32.81.411.500
polyrack_benelux@polyrack.com

You will find the closest sales representative or distribution partner responsible for your area at: **www.polyrack.com**

#01 PRODUCTS

CASES

\\ 19" Rackmount/desktop cases for plug-in units \\ Desktop cases for plug in units
\\ 19" Desktop cases \\ Small equipment cases

POLYRACK TECH-GROUP
Steinbeisstraße 4
75334 Straubenhardt
Germany
www.polyrack.com

HOTLINE
+49.(0)800 - POLYRACK
(+49.(0)800.76597225)
sales@polyrack.com

Visit us online!

CAS / 02-01 // 212717