

# #01

POLYRACKTECH-GROUP

# FreeTEC

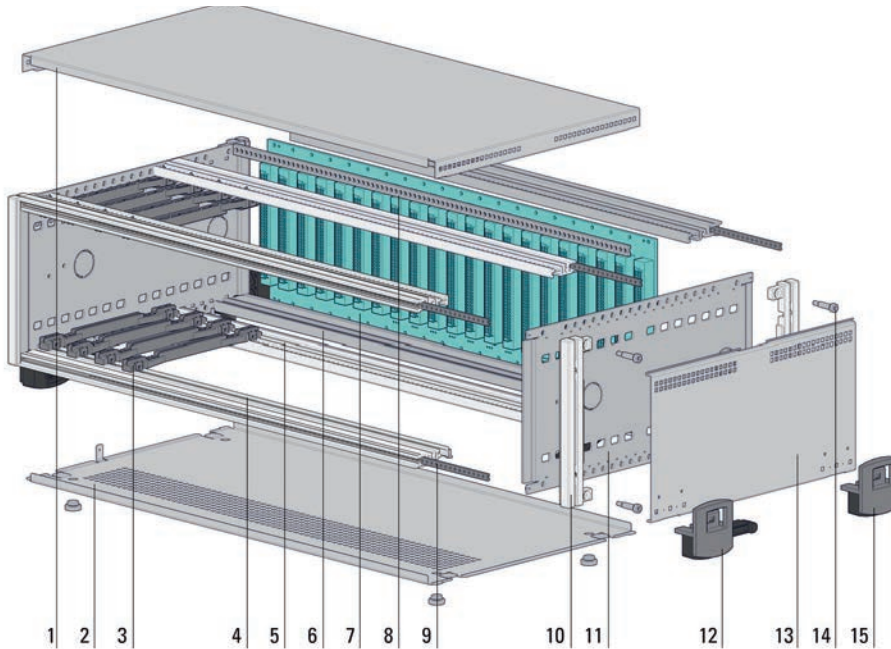
// Product information



# //02 19" RACKMOUNT/DESKTOP CASES FOR PLUG-IN UNITS

# FreeTEC

// Product information



## Configuration example

The diagram shows the configuration of a FreeTEC 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“

## // 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  $H = (n (U) \times 44.45 \text{ mm}) - 0.8 \text{ mm}$

Usable width  $W = (n (HP) \times 5.08 \text{ mm})$   
Actual rail dimension = usable width  $W + 5.08 \text{ mm}$

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

# //02 19" RACKMOUNT/DESKTOP CASES FOR PLUG-IN UNITS

# FreeTEC

## // Product information

### 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.

### Note

- Max. load 30 kg
- Adjustable in steps of 30°

### Material

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

### Dimensions

H	W
2 U	42 HP
2 U	84 HP
3 U	42 HP
3 U	84 HP
4 U	42 HP
4 U	84 HP
6 U	42 HP
6 U	84 HP

# //02 19" RACKMOUNT/DESKTOP CASES FOR PLUG-IN UNITS

# FreeTEC

// 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.

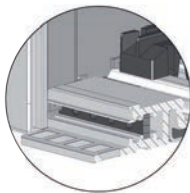
Further configurations can be made by combining different components as required

## Features of the basic units

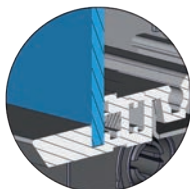
### Standard



### IEEE



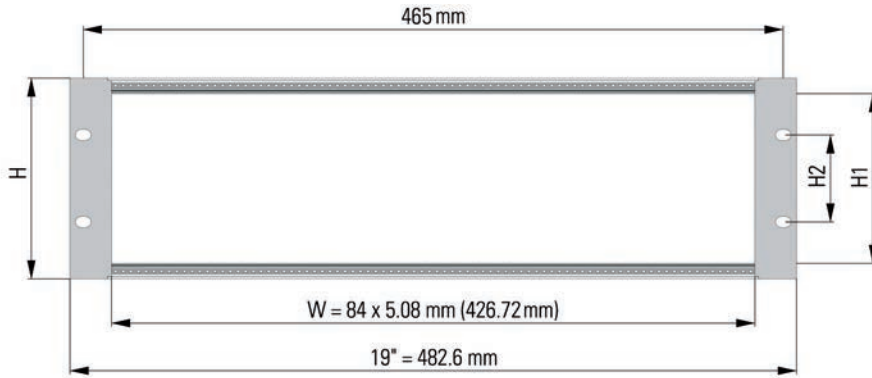
### Special-design front



# //02 19" RACKMOUNT/DESKTOP CASES FOR PLUG-IN UNITS

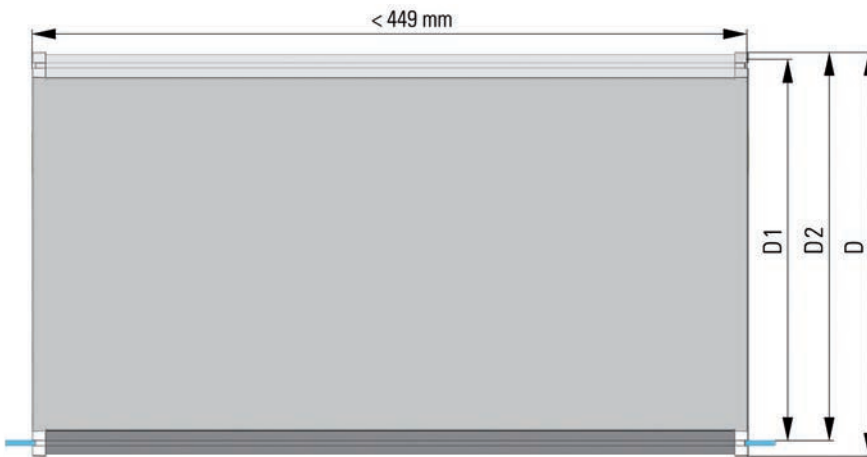
# FreeTEC

## // General information

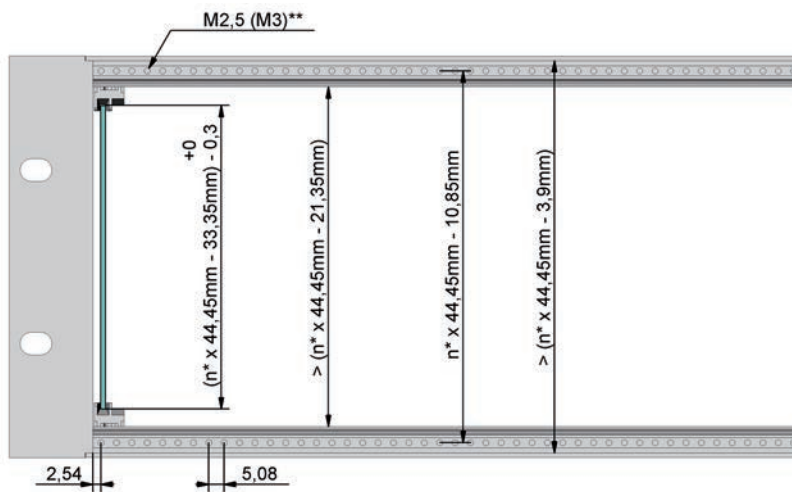


Mounting dimensions (mm)

	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



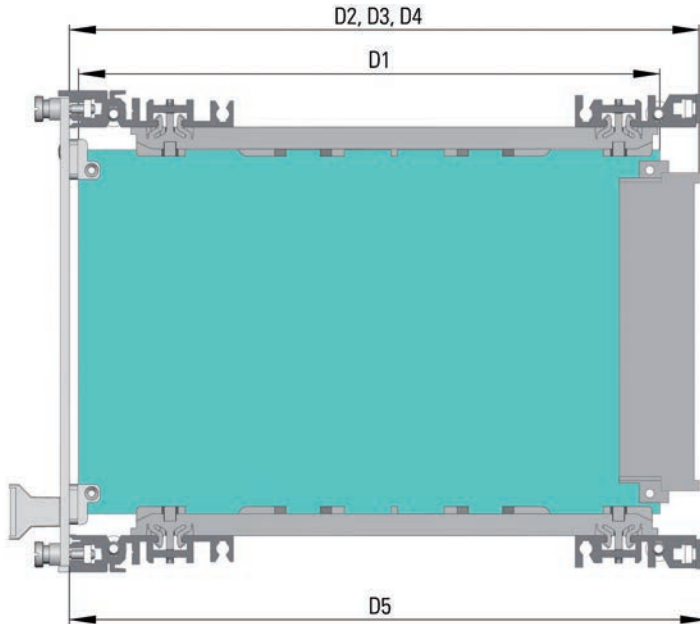
\* (U)

\*\* Mounting holes for front panels

# //02 19" RACKMOUNT/DESKTOP CASES FOR PLUG-IN UNITS

## FreeTEC

### // 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

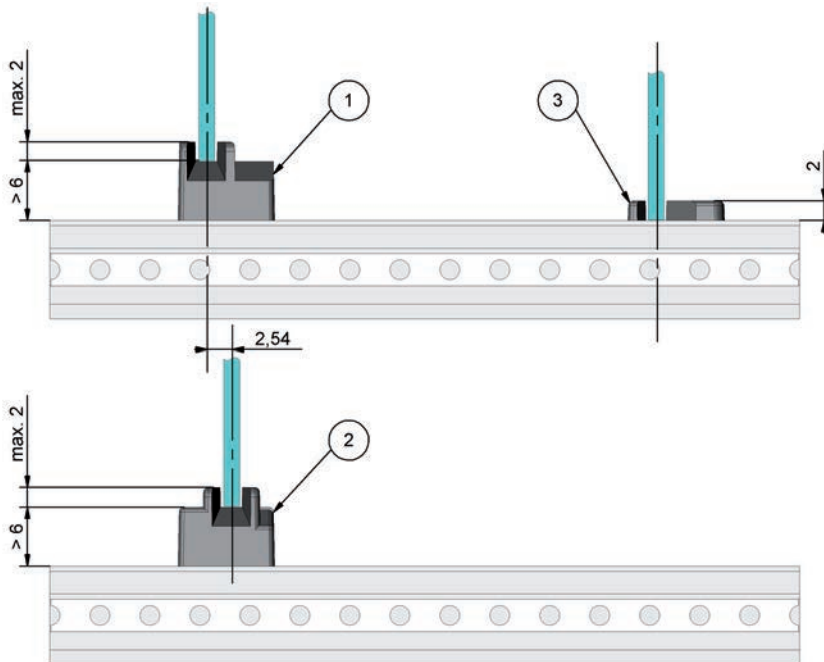
\* PCB depth

\*\* 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

$$D5 = D1 + 15.5 \text{ mm}$$



Card guides - front view

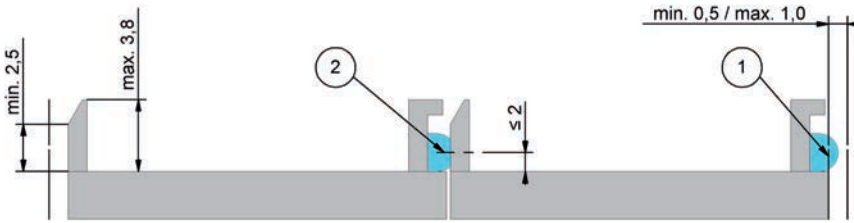
- 1 Card guide, standard
- 2 Card guide 2.54 mm offset
- 3 Card guide 4.4" (111.7 mm)

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

# //02 19" RACKMOUNT/DESKTOP CASES FOR PLUG-IN UNITS

# FreeTEC

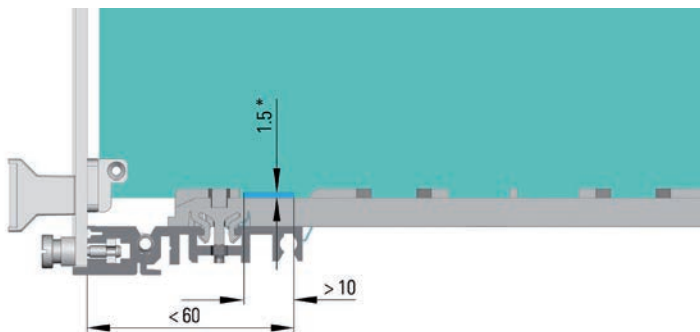
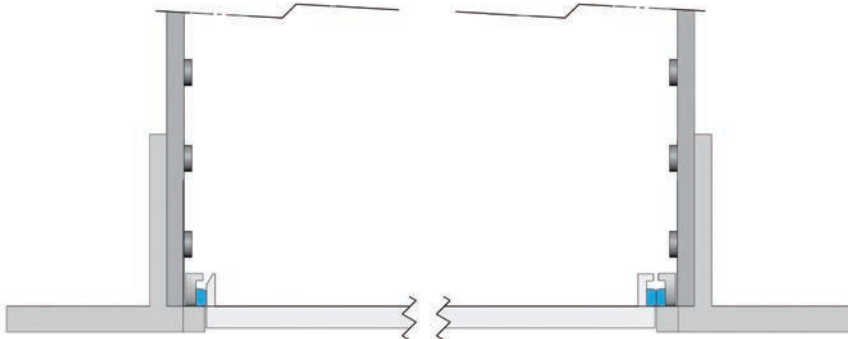
## // General information



**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

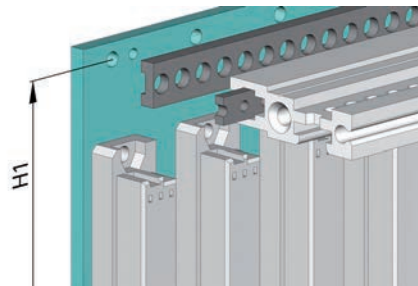
# //02 19" RACKMOUNT/DESKTOP CASES FOR PLUG-IN UNITS

# FreeTEC

## // General information

### // Basic units

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



#### Basic Unit B

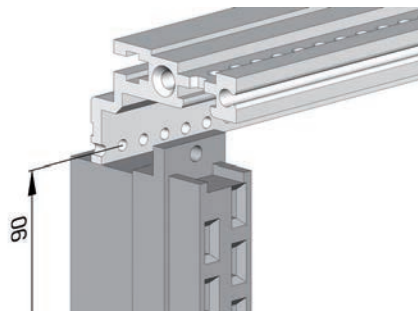
For indirect mounting of backplanes with isolating strips or for mounting Z-rails.

The dimensions for backplane mounting are calculated as follows:

$$H1 = n \times U - 10.85 \text{ mm}$$

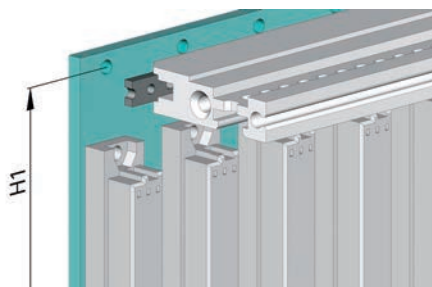
Calculation example for 3 U:

$$H1 = 3 \times 44.45 \text{ mm} - 10.85 \text{ mm} = 122.5 \text{ mm}$$



#### 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:

$$H1 = n \times U - 10.85 \text{ mm}$$

Calculation example for 3 U:

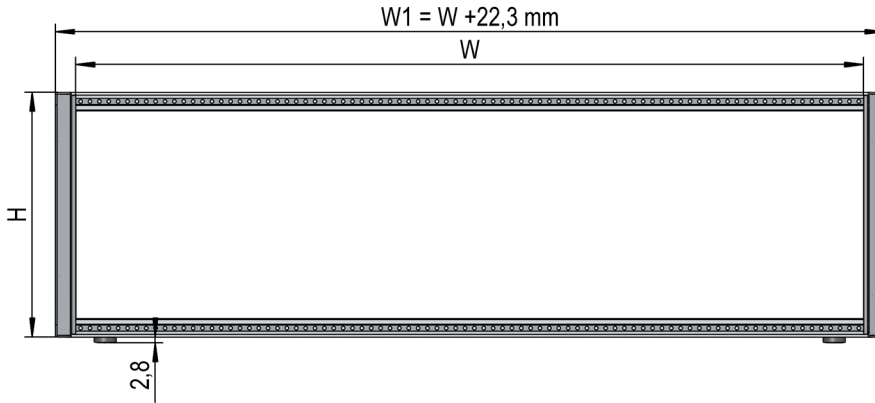
$$H1 = 3 \times 44.45 \text{ mm} - 10.85 \text{ mm} = 122.5 \text{ mm}$$



# //02 19" RACKMOUNT/DESKTOP CASES FOR PLUG-IN UNITS

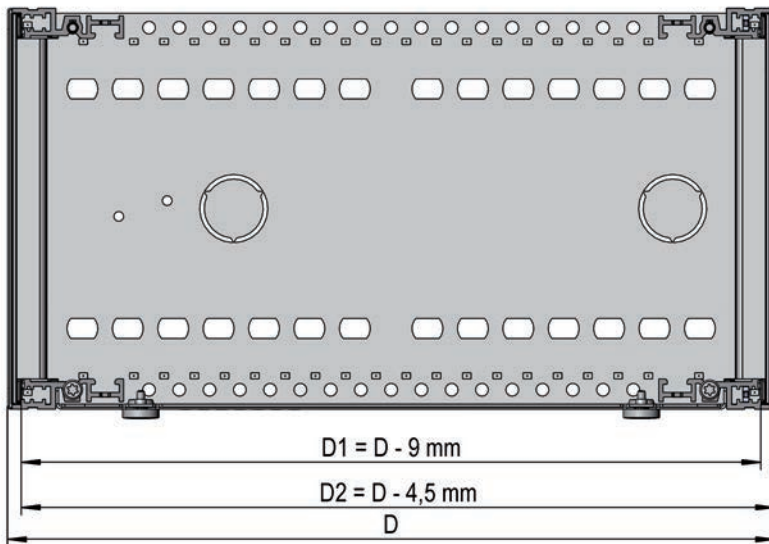
# FreeTEC

// Product information



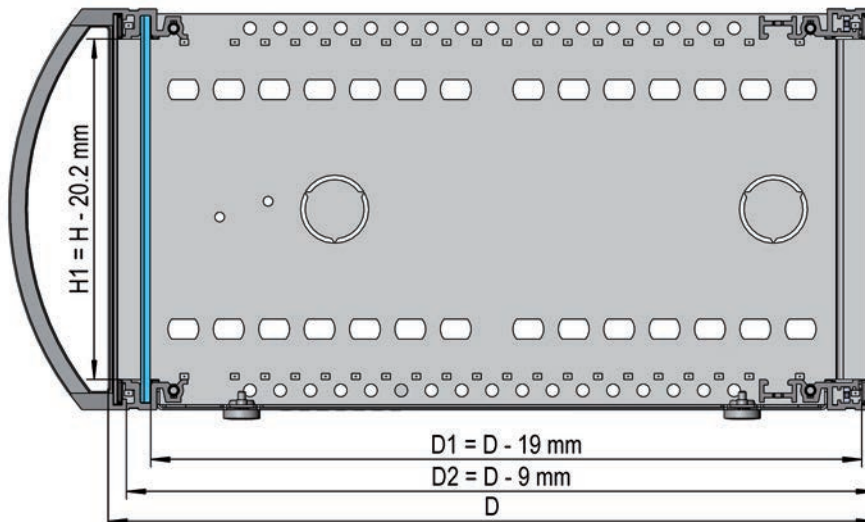
Dimension diagrams

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)

# //02 19" RACKMOUNT/DESKTOP CASES FOR PLUG-IN UNITS

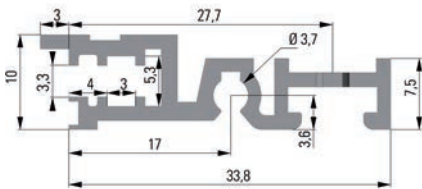
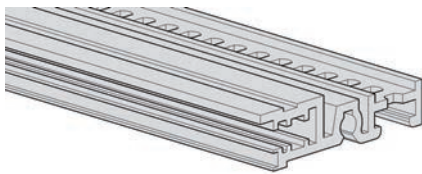
## FreeTEC

### // 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

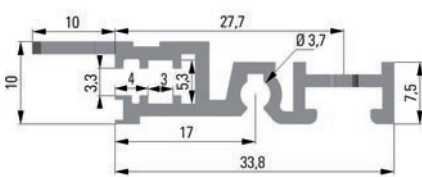
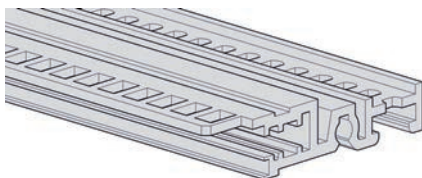
For mounting plug-in units or front panels

#### Note

– Secured with one screw

#### Material

Aluminum extrusion alodined, visible side powder-coated „sand metallic“



#### Front rail, IEEE – FreeTEC

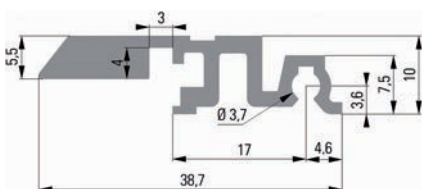
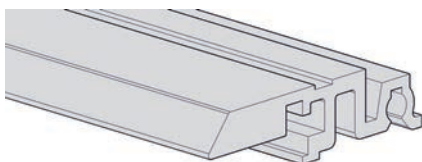
For mounting plug-in units in compliance with IEEE 1101.1/IEEE 1101.10

#### Note

– Secured with one screw  
– Corners notched

#### Material

Aluminum extrusion alodined, visible side powder-coated „sand metallic“



#### Front rail, special-design front – FreeTEC

For mounting the special-design front panel without screws

#### Note

– Special-design handles must be ordered separately.  
– Secured with one screw

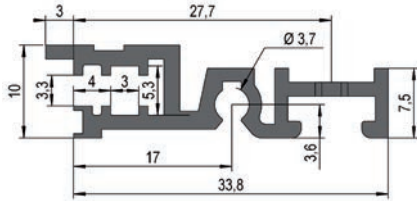
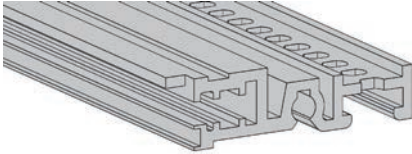
#### Material

Aluminum extrusion alodined, visible side powder-coated „sand metallic“

# //02 19" RACKMOUNT/DESKTOP CASES FOR PLUG-IN UNITS

## FreeTEC

### // Single components



#### Front rail, double-level – FreeTEC

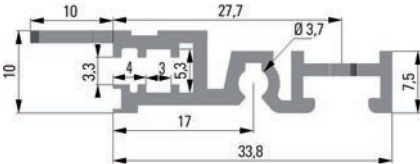
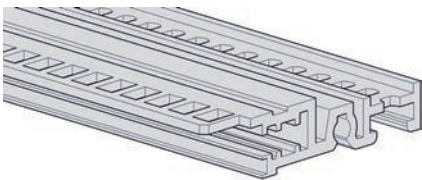
For double-level mounting of plug-in units

#### Material

Aluminum extrusion, alodined

#### Note

- Secured with one screw
- Corners notched



#### Front rail, IEEE, double-level – FreeTEC

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

#### Material

Aluminum extrusion, alodined

#### Note

- Secured with one screw
- Corners notched

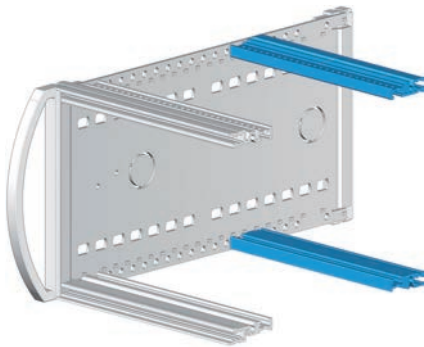
# //02 19" RACKMOUNT/DESKTOP CASES FOR PLUG-IN UNITS

# FreeTEC

## // Single components

### Conversion

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

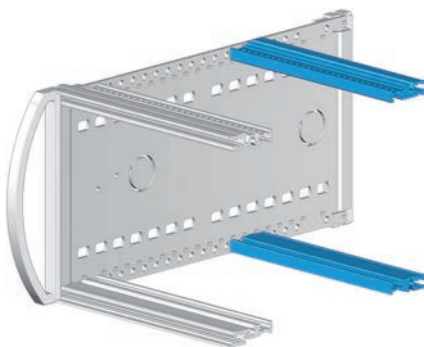
For indirect mounting of backplanes with isolating strips or for mounting Z-rails

#### Material

Aluminum extrusion, alodined

#### Note

– Threaded inserts and card guides must be ordered separately.



### 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

#### Note

– Threaded inserts and card guides must be ordered separately.

# //02 19" RACKMOUNT/DESKTOP CASES FOR PLUG-IN UNITS

## FreeTEC

### // Single components

#### Corner brackets, 19" adapter



#### Standard corner bracket – FreeTEC

For front and rear trimming of case

#### Material

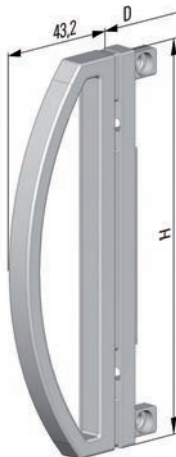
Die-cast aluminum, powder-coated  
„sand metallic“

#### Note

– Cannot be used in conjunction with special-design front rail

#### Dimensions

H
1 U
2 U
3 U
4 U
6 U



#### Corner bracket with designer handle – FreeTEC

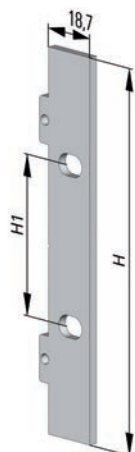
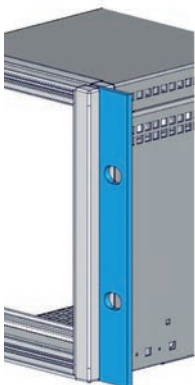
For front trimming of case

#### Material

Die-cast aluminum, powder-coated  
„sand metallic“

#### Dimensions

H
1 U
2 U
3 U
4 U
6 U



#### 19"-Adapter – FreeTEC

Enables mounting in 19" racks

#### Material

Aluminum 3 mm, powder-coated  
„sand metallic“

#### Note

– Assembly hardware contained in FreeTEC assembly kit

#### Dimensions

H	H1 in mm
1 U	31,75
2 U	76,20
3 U	57,15
4 U	101,60
6 U	190,50

# //02 19" RACKMOUNT/DESKTOP CASES FOR PLUG-IN UNITS

# FreeTEC

## // Single components

Special-design front panel, rear panel

### Special-design front panel – FreeTEC

For screwless mounting to front rail with special-design front

#### Material

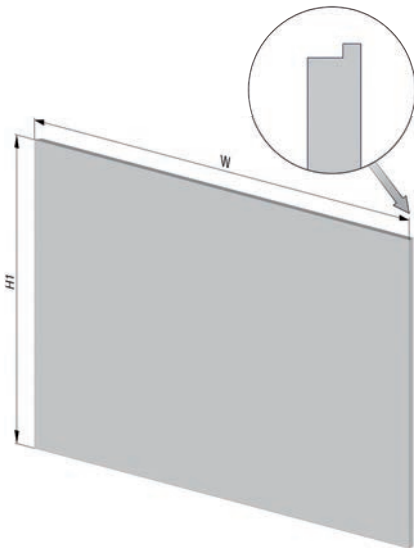
Aluminum 3 mm, front anodized/rear alodined

#### Dimensions

H	H1 in mm
1 U	40,1
2 U	84,5
3 U	129,0
4 U	173,4
6 U	262,3

#### Note

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



### Rear panel – FreeTEC

With ventilation slits for better heat dissipation

#### Material

Aluminum 2.5 mm, front anodized/rear alodined

#### Dimensions

H	H1 in mm
1 U	39,6
2 U	84,1
3 U	128,5
4 U	173,0
6 U	261,9

#### Note

- Prepared for fixation of EMC shielding D
- Prepared for assembly of tilt feet

