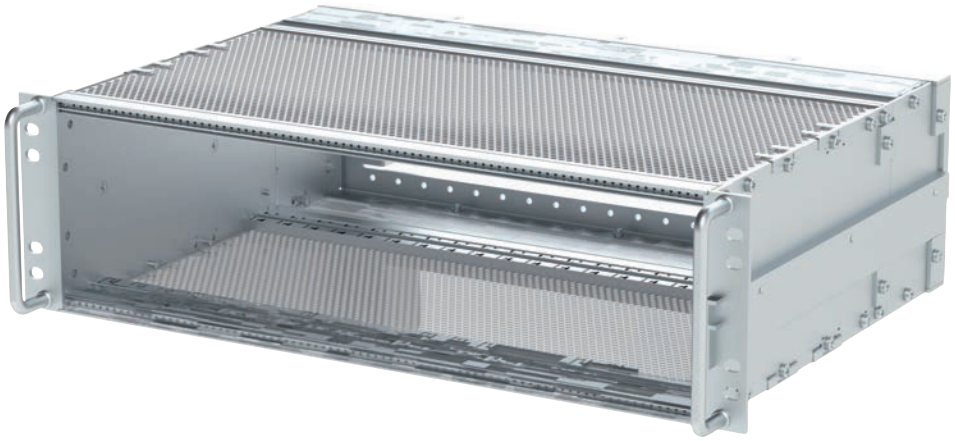
#01 POLYRACK TECH-GROUP

FERRORAIL

// Product information



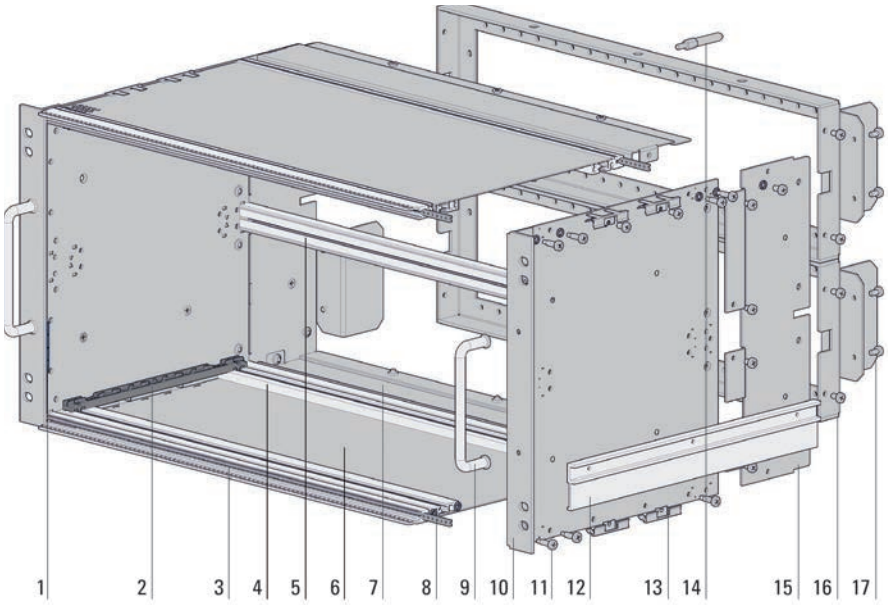
POLY RACK TECH-GROUP

FerroRAIL

// Basic units

Example of configuration

The diagram shows a typical configuration of a 19" subrack FerroRAIL 6 U.



1 EMC spring
2 Card guide*
3 Front rail (IEEE version as option)
4 Rear rail E
5 Center rail E (only with 6 U)
6 Front cover plate
7 Rear cover plate
8 Threaded inserts*
9 Handle
10 Side plate with mounting brackets, tox-joined
11 Assembly components
12 Guiding extrusion, external
13 Cover EMC spring
14 Coding block*
15 Side plate extrusion
16 Mounting frame (6 U = 2 pcs)
17 Distance bracket for mounting frame

The parts marked with * are not included in the standard scope of delivery of a basic unit.

// Specifications, measurement units and manufacturing tolerances

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

Height unit U
Unit of measurement for the height in a 19" packaging system
1 U = 44.45 mm

Increment unit HP
Unit of measurement for the width in a 19" packaging system
1 HP = 5.08 mm

Dimensions in order tables
The published dimensions, explicitly U and HP, have to be stipulated in relation to the application.

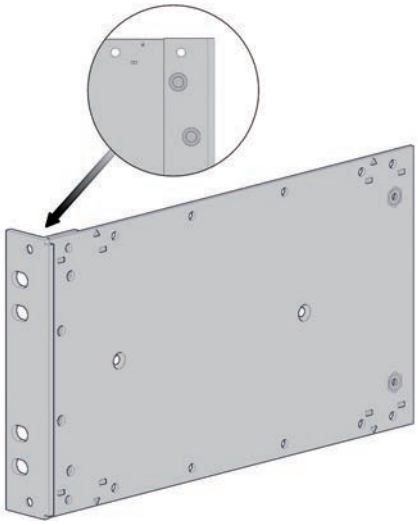
Height H = (n (U) x 44.45 mm) - 0.8 mm

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

The depth D (in mm) defines the total depth of the subrack from the supporting surface of the front rail (supporting surface of the 19" mounting bracket) to the rear of the side plate.

Basic units

The basic units of the FerroRAIL series are available as standard and IEEE versions.
The standard versions are vibration-resistant and are equipped with side plate extrusions and a mounting frame.
All IEEE basic units are shielded with EMC springs and are available either with side plate extrusions and mounting frame or in a shortened version. Further configurations can be created by individual combination of components.

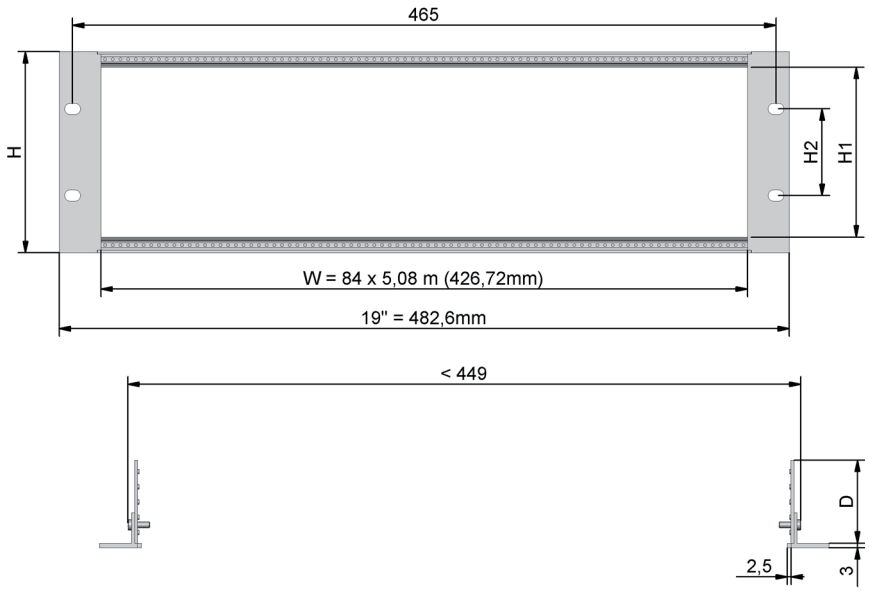


Features of the basic units

Vibration resistant
Side plate/mounting brackets and corner brackets are tox-joined, horizontal rails are secured with two screws on each side.

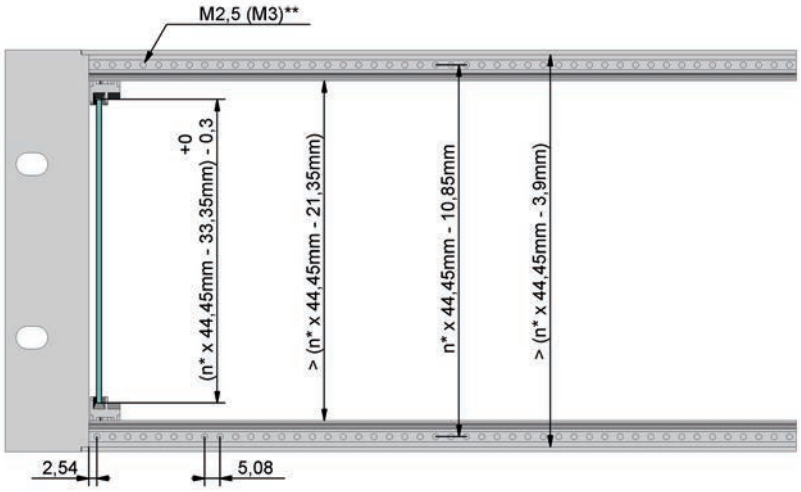
“EMC spring” shielding concept
Mounting brackets with groove for mounting EMC springs

// General information



Mounting dimensions (mm)

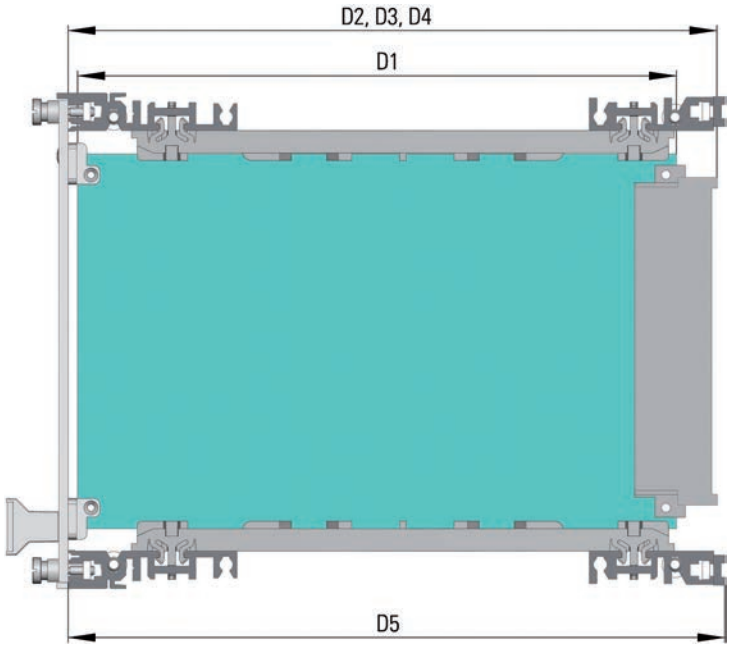
	H	H1	H2
1 U	= 43.6	≤ 23.1	= 31.7
2 U	= 88.1	≤ 67.5	= 76.2
3 U	= 132.5	≤ 112.0	= 57.1
4 U	= 177.0	≤ 156.45	= 101.6
6 U	= 265.9	≤ 245.35	= 190.5



* (U)

** Mounting holes for front panels

// General information

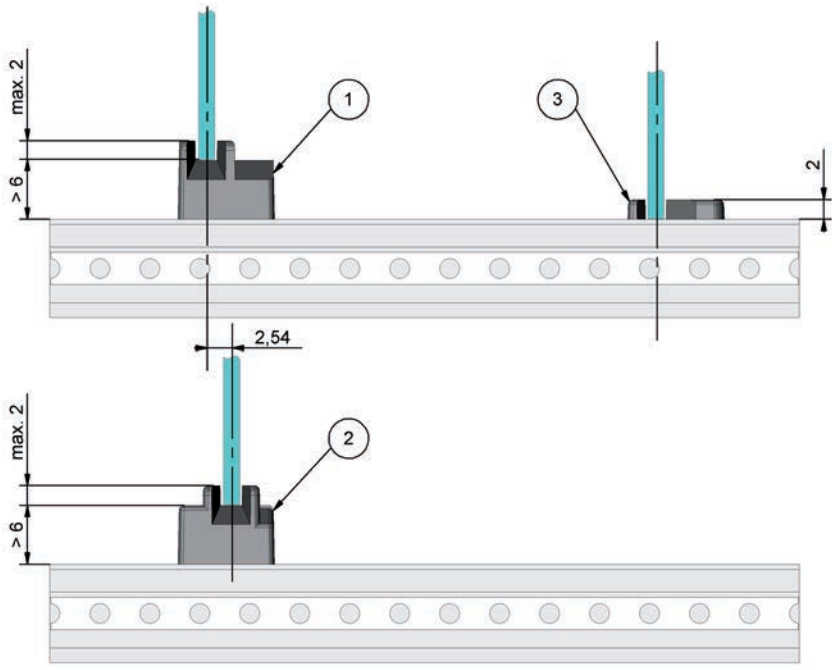


Dimensions for plug-in modules (mm)

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

* Board depth
** Plug-in depth for connector IEC 60603-2, Type B, C, D and IEC 61076-4-113
*** Plug-in depth for connector IEC 60603-2, Type F, G, H
**** Plug-in depth for connector IEC 61076-4-101

D5 = D1 + 15.5 mm

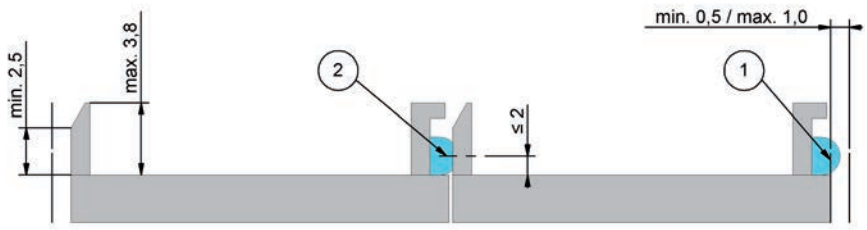


Card guides – front view

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

Slot width 2 mm or 2.4 mm, respectively

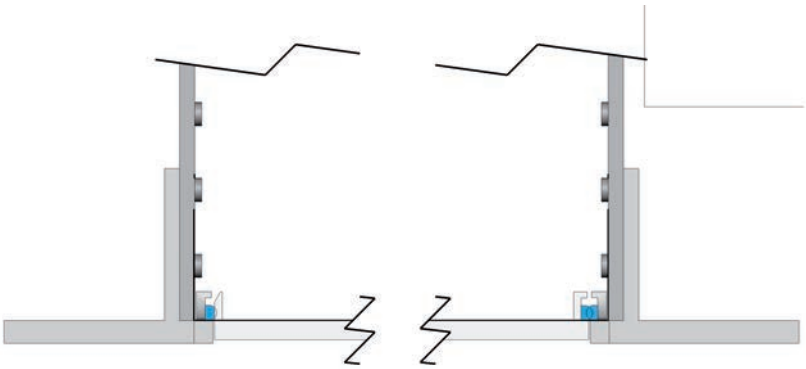
// General information

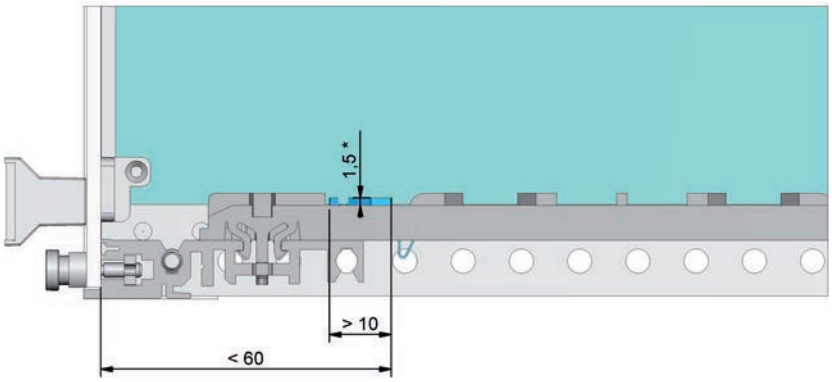


Shielding concept EMC Fabric – front panel
Standards for contact points (contact surface) are specified in IEEE 1101.10.

The diagram shows extracts from the IEEE 1101.10 specification in relation to EMC fabric

1 Not compressed EMC Fabric
2 Compressed EMC Fabric





ESD contact area
The electrostatic discharge is via a contact clip, which is clipped into the front of the guide rail. To ensure proper functioning, the ESD clip must have contact with the grounded section of the subrack as well as the conductive section of the board.

*ESD contact area

// Manufacturing tolerances

In general, parts tolerances are subject to the POLYRACK factory specifications, with the following exceptions:

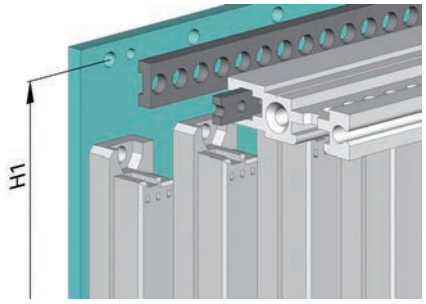
Extrusions comply with
DIN EN 12020-1

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

// General information

// Basic units

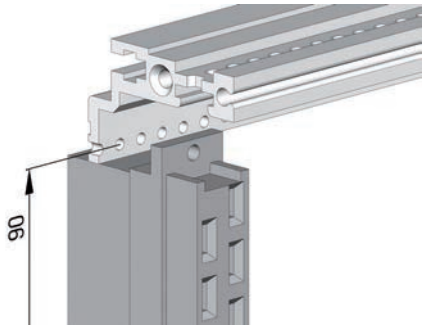
There is a choice of four different basic units, depending on the application:



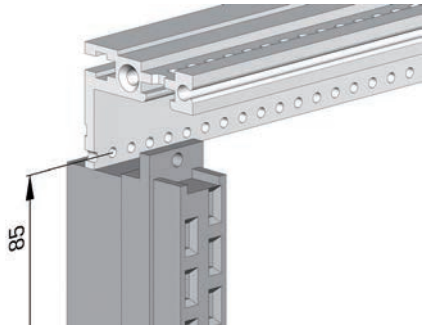
Basic unit B
For indirect mounting of backplanes using an isolating strip or for Z-rail

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

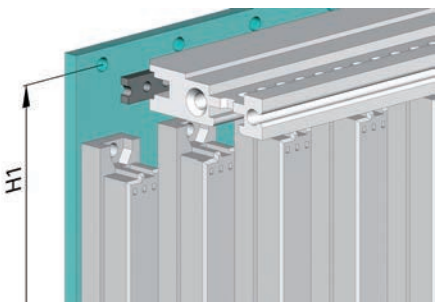
Calculation example for 3 U:
H1 = 3 x 44.45 mm - 10.85 mm = 122.5 mm



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



Basic unit D
With integrated Z-rail for connectors according to IEC 60603-1



Basic unit E
For direct mounting of backplanes without isolating strips or for perforated rails. Rail width + 3 mm in comparison to basic unit

The dimensions for mounting the backplane 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