#01 PRODUCTS

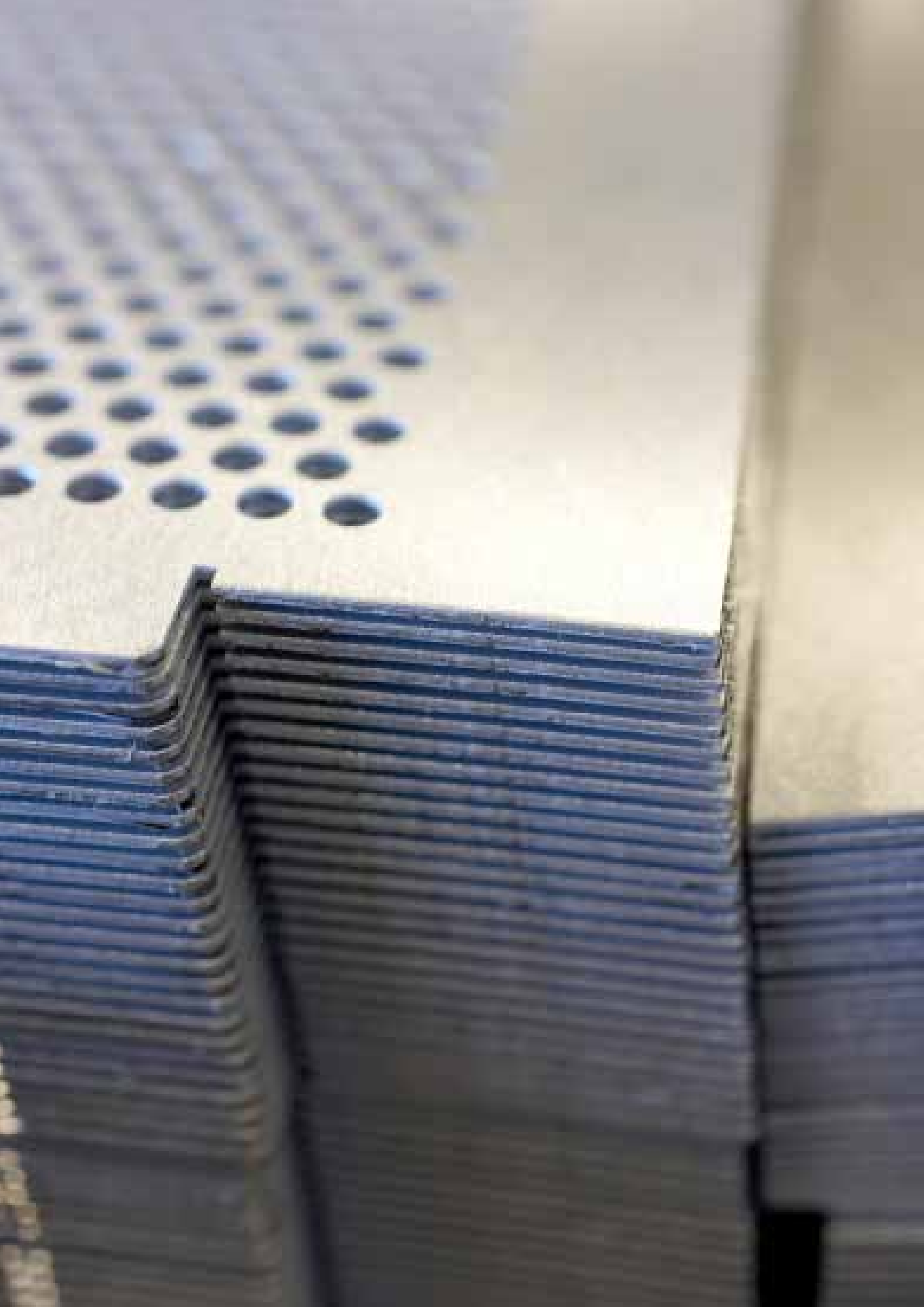
FRONT PANELS & PLUG-IN MODULES

// Front Panels // Plug-in Modules

Front Panels, Plug-in Modules

*leading.*technology

POLY RACK TECH-GROUP



#01 CONTENTS
FRONT PANELS & PLUG-IN MODULES

Front panels & Plug-in modules

Front panels

#01 CONTENTS
FRONT PANELS & PLUG-IN MODULES

Plug-in modules

Overview of front panels

Front panels

GENERAL INFORMATION

// Overview

Front panels, plug-in-modules and assemblies and 19" front panels from POLYRACK differ according to their application. Particular attention is paid to the application and the associated specific technical requirements.

	Surface finishing		Shielding concept		Handle	Extractor handle
	anodized	alodined	EMC	RFI		
Front panels	●	●	●	●	○	○
Plug-in modules	●	●	●	●	●	–

○ Used with front panels for plug-in-modules

GENERAL INFORMATION

// Overview

Front panels
Our front panel program enables you to custom-assemble your product using a variety of alternatives.
We offer an extensive portfolio of products ranging from partial front panels, front panels for plug-in modules with various handle options and for various stability and shielding requirements to 19" front panels. Cutouts, color coating and inscriptions can be added at any time in accordance with your individual requirements.

Plug-in modules
Our range of plug-in modules offers you optimum mounting options for your PC boards.
Various options with regard to size and shielding requirements are available for individual assembly.

// Questions?

We are happy to help you. Please contact us.

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

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polyrack_us@polyrack.com

Overview of front panels for plug-in modules
Front panels

#01 CONTENTS
FRONT PANELS

Front panels

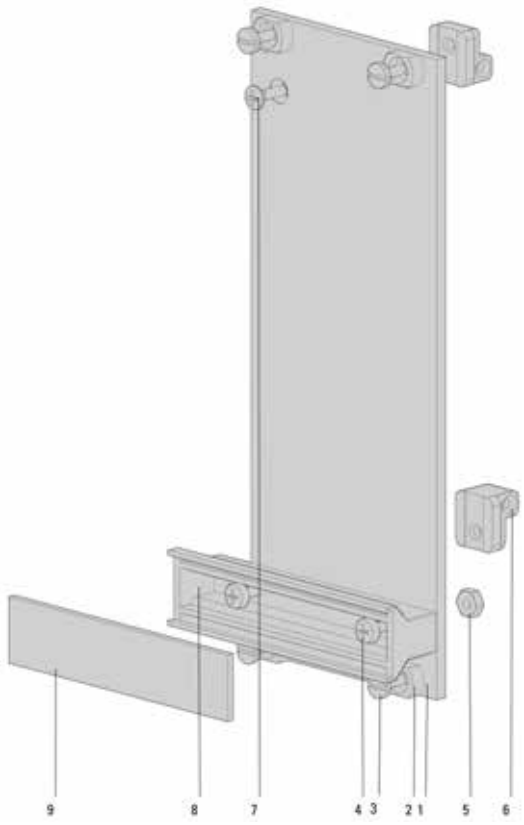
GENERAL INFORMATION

// Application

Our front panel program enables you to custom-assemble your product using a variety of options. We offer an extensive portfolio of products ranging from partial front panels, front panels for plug-in-modules with various handle options and for various stability and shielding requirements to 19" front panels. Cutouts, color coating and inscriptions can be added at any time in accordance with your individual requirements.

// Configuration example

The diagram shows a typical front panel assembly using the example of a front panel for plug-in-modules



1 Front panel
2 Metal sleeve*
3 Collar screw*
4 Cylinder head screw*
5 Hexagon nut*
6 Board holder*
7 Countersunk head screw*
8 Handle*
9 Identification plate*

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

// 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
– IEEE 1101.11

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

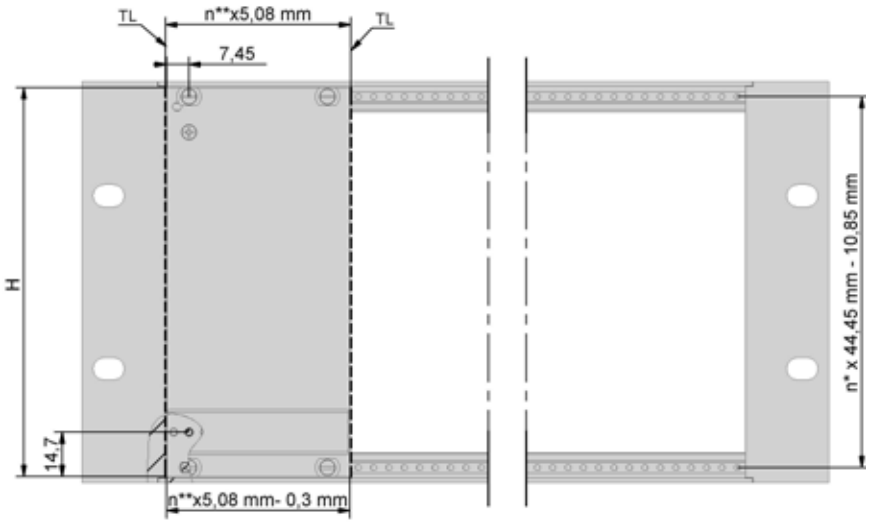
Increment unit HP
Measurement unit for width in 19" rack systems
1 HP = 5.08 mm

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) - 4.8 mm

Usable width W = (n (HP) x 0.3 mm)

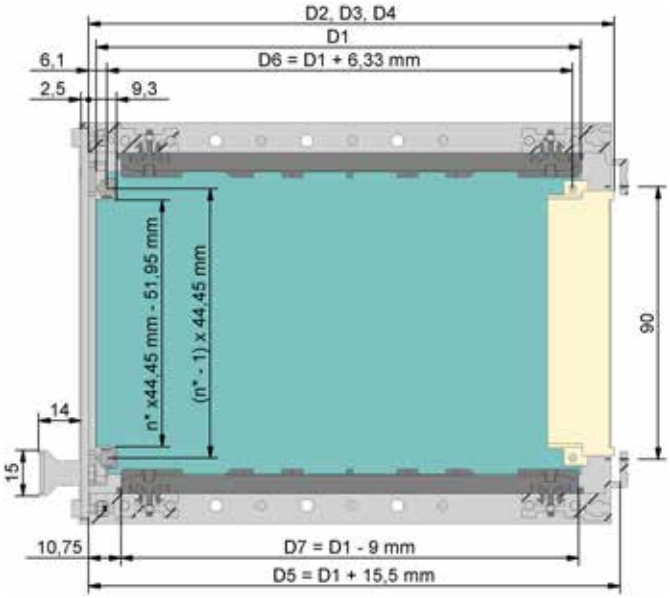
The depth D (in mm) indicates the total depth of the case without handles, connectors, etc.



Mounting dimensions (mm)

	H
3 U	= 128.5
4 U	= 173.0
6 U	= 261.9

* (U)
** (HP)
TL (partition line)



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

D = overall depth
D5 = mounting depth in 19" rack

// 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 wth DIN 16742

GENERAL INFORMATION

// Overview of series

Series	Surface finishing anod	anod / alod	EMC shielding concept	Mounting holes for board holder	Features
Front panels	●	●	●	–	For mounting in subracks or cases for plug-in units
Plug-in modules	●	●	●	●	To accommodate single Eurocards

// 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 CASES
⇨ 19"- rackmount and desktop cases
Desktop cases for plug-in units
Desktop cases for 19"

#01 SYSTEMS TECHNOLOGY
⇨ Systems

#01 19" SUBRACKS
⇨ All subrack series

// Questions?

We are happy to help you. Please contact us.

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Overview of front panels
Front panels

FRONT PANELS

Product information

These front panels are typically used in subracks for trimming purposes.
They are available in various sizes and versions.

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

Notes
– Front panels are supplied individually
– Assembly hardware must be ordered separately

Overview

Basic units	H in U			W in HP																Page
	3	4	6	2	3	4	5	6	7	8	10	12	14	16	20	21	28	42	63	84	
- Standard	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●		●	●	●	FPL 01.16
- Future	●		●			●		●		●	●	●						●		●	FPL 01.17
- U extrusion	●		●		●	●		●	●	●	●	●									FPL 01.18
- Bottom-hinged / side-hinged with hinge extrusion	●		●															●	●	●	FPL 01.19
- Bottom-hinged / side-hinged with hinge element	●		●																	●	FPL 01.20

FRONT PANELS

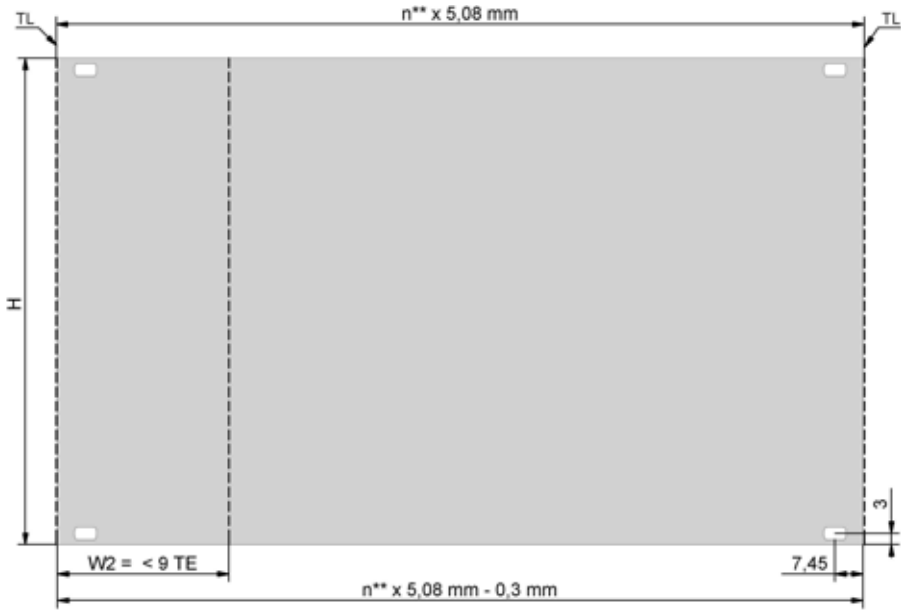
// Product information

Configuration example

The diagram shows the typical configuration of a front panel (with assembly hardware)

1 Front panel
2 Metal sleeve*
3 Collar screw*

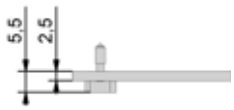
Parts marked with * are not included in the scope of delivery of the basic unit, i.e. they must be ordered separately.



Dimension diagrams

Front view, standard

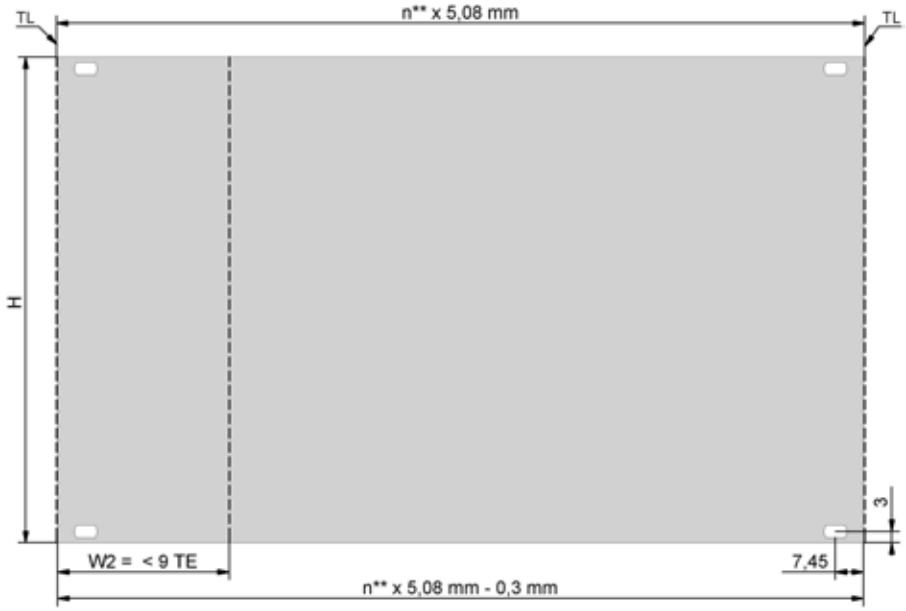
W2 = up to a width of 9 HP there are only two mounting holes in the front panel



Top view, standard

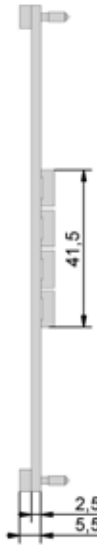
FRONT PANELS

// Product information

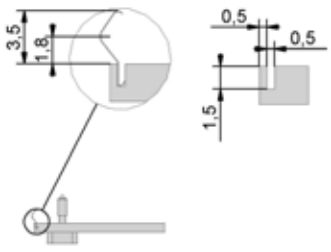


Front view, Future

W2 = up to a width of 9 HP there are only two mounting holes in the front panel

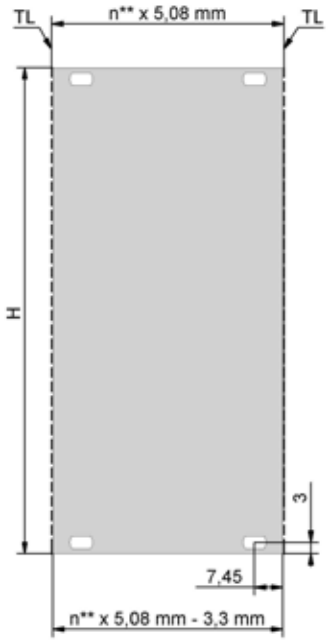


Side view, Future

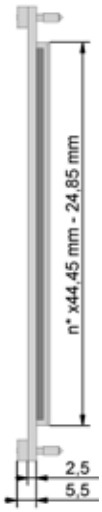


Top view, Future

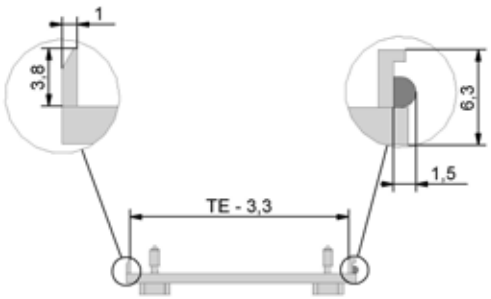
Groove on both sides



Front view, U extrusion



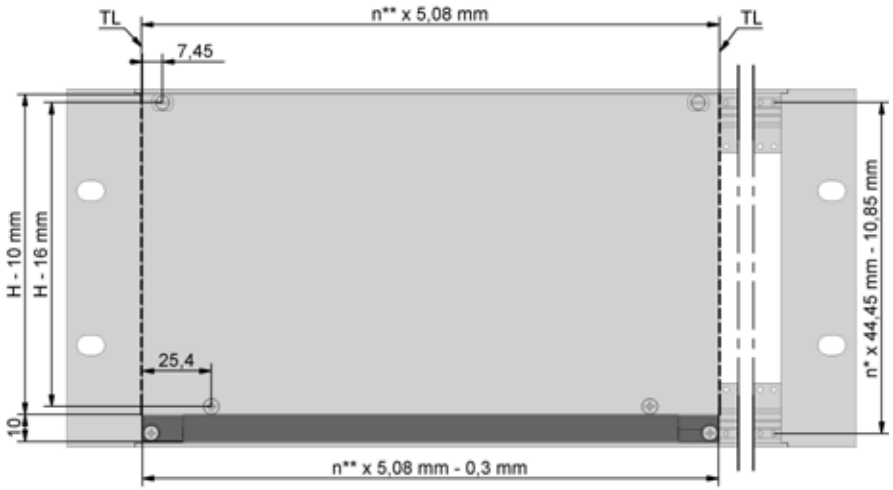
Side view, U extrusion



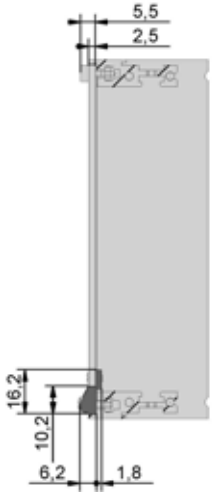
Top view, U extrusion

FRONT PANELS

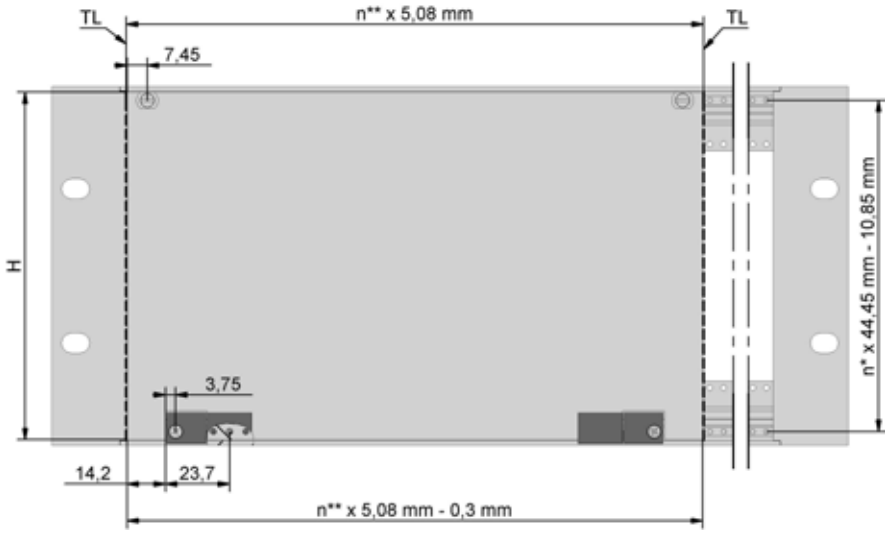
// Product information



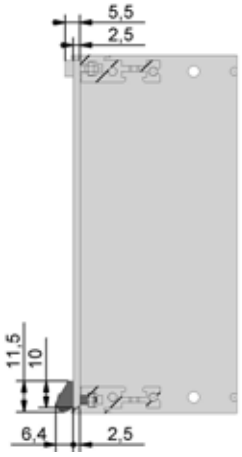
Front view, bottom-hinged / side-hinged with hinge extrusion



Side view, bottom-hinged / side-hinged with hinge extrusion



Front view, bottom-hinged / side-hinged with hinge element



Side view, bottom-hinged / side-hinged with hinge element

FRONT PANELS

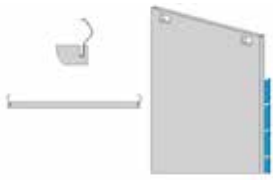
// Basic units

Basic units

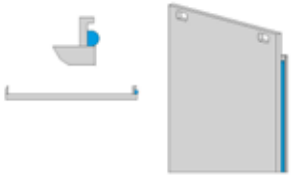
Front panels to fit all products with 19" mounting dimensions. They differ with respect to their shielding concept and hinge technique.
There are 5 basic versions available.

Features of the basic units

Standard
Without shielding

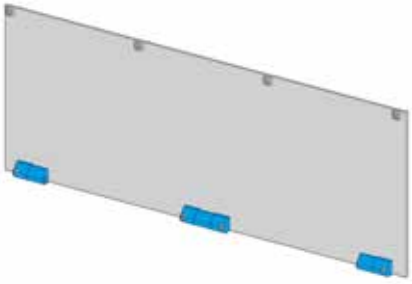


Future
"EMC spring" shielding concept
Front panels with groove on left and right to accept EMC spring.



U extrusion
"EMC fabric"shielding concept
Front panels with contact edge left and shielding edge right to affix EMC shielding fabric D

Bottom-hinged / side-hinged with hinge extrusion
Front panels with possibility of mounting hinge extrusion



Bottom-hinged / side-hinged with hinge element
Front panels with possibility of mounting individual hinge elements

FRONT PANELS

// Basic units

Front panel, standard

Material
Aluminum 2.5 mm

Scope of delivery
Front panel 1 pc

Delivery form
In units for self-assembly

Note
– Assembly hardware must be ordered separately

Ordering table

U	HP	Clear anodized cutting edges raw	Front anodized rear alodined
3 U	2 HP	79 41 20 15	–
3 U	3 HP	79 41 20 19	–
3 U	4 HP	79 41 20 23	79 41 54 00
3 U	5 HP	79 41 20 27	79 41 54 18
3 U	6 HP	79 41 20 31	79 41 54 01
3 U	7 HP	79 41 20 35	79 41 54 19
3 U	8 HP	79 41 20 39	79 41 54 02
3 U	10 HP	79 41 20 43	79 41 54 03
3 U	12 HP	79 41 20 47	79 41 54 04
3 U	14 HP	79 41 20 51	–
3 U	16 HP	79 41 20 55	–
3 U	20 HP	79 41 20 59	–
3 U	21 HP	79 41 20 63	–
3 U	42 HP	79 41 20 67	79 41 54 05
3 U	63 HP	79 41 20 71	79 41 54 06
3 U	84 HP	79 41 20 75	79 41 54 07
4 U	42 HP	79 41 20 79	–
4 U	63 HP	79 41 20 83	–
4 U	84 HP	79 41 20 87	–
6 U	2 HP	79 41 20 91	–
6 U	3 HP	79 41 20 95	–
6 U	4 HP	79 41 20 99	79 41 54 08
6 U	5 HP	79 41 21 03	–
6 U	6 HP	79 41 21 07	79 41 54 09
6 U	7 HP	79 41 21 11	–
6 U	8 HP	79 41 21 15	79 41 54 10
6 U	10 HP	79 41 21 19	79 41 54 11
6 U	12 HP	79 41 21 23	79 41 54 12
6 U	14 HP	79 41 21 27	–
6 U	16 HP	79 41 21 31	–
6 U	20 HP	79 41 21 35	–
6 U	21 HP	79 41 21 39	–
6 U	42 HP	79 41 21 43	79 41 54 13
6 U	63 HP	79 41 21 47	79 41 54 14
6 U	84 HP	79 41 21 51	79 41 54 15

Front panel, Future

Material
Aluminum 2.5 mm, front anodized / rear alodined

Scope of delivery
Front panel 1 pc

Delivery form
In units for self-assembly

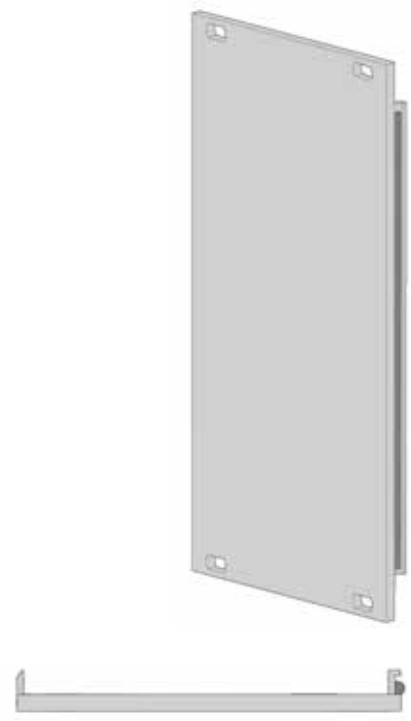
Note
– Assembly hardware must be ordered separately

Ordering table

U	HP	Order no.
3 U	4 HP	23 10 03 00
3 U	6 HP	23 10 03 01
3 U	8 HP	23 10 03 02
3 U	10 HP	23 10 03 03
3 U	12 HP	23 10 03 04
3 U	42 HP	23 10 03 05
3 U	84 HP	23 10 03 07
6 U	4 HP	23 10 03 08
6 U	6 HP	23 10 03 09
6 U	8 HP	23 10 03 10
6 U	10 HP	23 10 03 11
6 U	12 HP	23 10 03 12
6 U	42 HP	23 10 03 13
6 U	84 HP	23 10 03 15

FRONT PANELS

// Basic units



Front panel, U extrusion

Material
Aluminum extrusion, front anodized / rear alodined

Scope of delivery
U extrusion front panel 1 pc

Delivery form
In units for self-assembly

Note
– Assembly hardware must be ordered separately

Ordering table

U	HP	Order no.
3 U	4 HP	23 10 08 00
3 U	6 HP	23 10 08 01
3 U	8 HP	23 10 08 02
3 U	10 HP	23 10 08 03
3 U	12 HP	23 10 08 04
6 U	4 HP	23 10 08 20
6 U	6 HP	23 10 08 21
6 U	8 HP	23 10 08 22
6 U	10 HP	23 10 08 23
6 U	12 HP	23 10 03 24

Front panel, bottom-hinged / side-hinged with hinge extrusion

Material
Aluminum 2.5 mm, surface anodized / cutting edges raw, hinge parts aluminum anodized

Scope of delivery

Front panel	1 pc
Hinge parts with assembly hardware	1 pc

Delivery form
In units for self-assembly

Note
– Assembly hardware must be ordered separately

Ordering table

U	HP	Bottom-hinged	Side-hinged
3 U	42 HP	79 00 00 91	79 00 00 67
3 U	63 HP	79 00 00 95	79 00 00 71
3 U	84 HP	79 00 00 99	79 00 00 75
6 U	42 HP	79 00 01 03	79 00 00 79
6 U	63 HP	79 00 01 07	79 00 00 83
6 U	84 HP	79 00 01 11	79 00 00 87

FRONT PANELS

// Basic units

Front panel, bottom-hinged / side-hinged with hinge element

Material
Aluminum 2.5 mm, hinge parts PA 6

Scope of delivery
Front panel, bottom-hinged

Front panel	1 pc
Hinge element left	2 pcs
Hinge element right	2 pcs
Hinge joint	3 pcs
Assembly hardware for hinge elements	1 pc

Front panel, side-hinged

Front panel	1 pc
Hinge element top	1 pc
Hinge element bottom	1 pc
Hinge joint	2 pcs
Assembly hardware for hinge elements	1 pc

Delivery form
In units for self-assembly

Note
– Assembly hardware must be ordered separately

Ordering table

U	HP	Bottom-hinged anodized / cutting edges raw	Bottom-hinged, front anodized, rear alodined	Side-hinged anodized / cutting edges raw	Side-hinged, front anodized, rear alodined
3 U	84 HP	**79 23 50 00**	**79 23 50 01**	**79 23 50 02**	**79 23 50 03**
6 U	84 HP	**79 23 50 10**	**79 23 50 11**	**79 23 50 12**	**79 23 50 13**

Series 75 subrack with side-hinged and bottom-hinged front panels
Front panels

Future subrack with front panels
for plug-in modules
Front panels

FOR PLUG-IN MODULES

Product information

Front panels for plug-in-modules standardly accommodate single or double Eurocards. There are various handle and shielding options available.

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

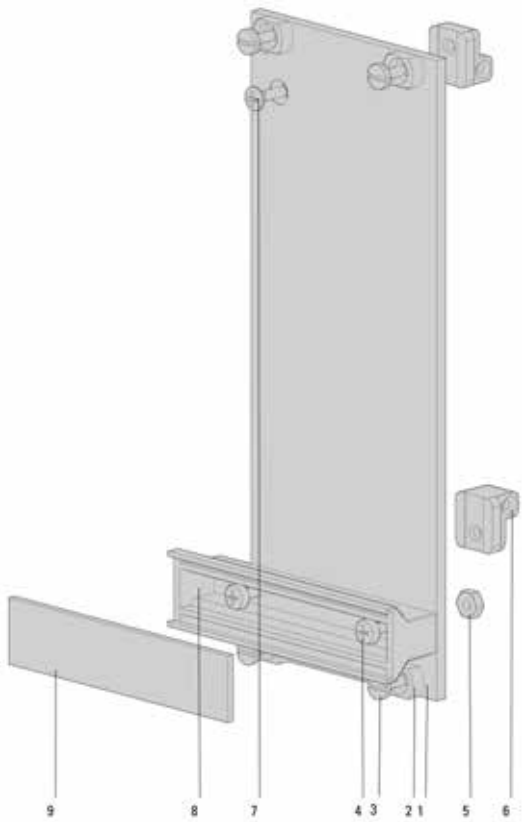
Notes
– In conjunction with the extractor handle the front panels comply with the dimensions specified in the IEEE 1101.10 standard
– The front panels are supplied individually
– Assembly hardware must be ordered separately

Overview

Basic units	H in U			W in HP																Page
	3	4	6	2	3	4	5	6	7	8	10	12	14	16	20	21	28	42	63	84	
- Standard	●		●		●	●	●	●	●	●	●	●	●	●							FPL 01.29
- Future	●		●			●		●		●	●	●									FPL 01.30
- U extrusion	●		●		●	●		●	●	●	●	●									FPL 01.31

FOR PLUG-IN MODULES

// Product information



Configuration example

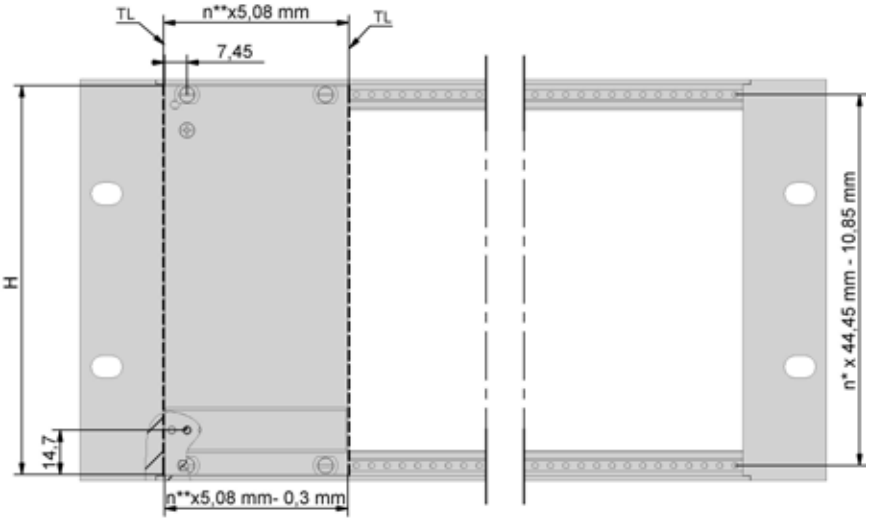
The diagram shows the typical configuration of a front panel for plug-in-modules with assembly hardware and handle

1 Front panel
2 Metal sleeve*
3 Collar screw*
4 Cylinder head screw*
5 Hexagon nut*
6 Board holder*
7 Countersunk head screw*
8 Handle*
9 Identification plate*

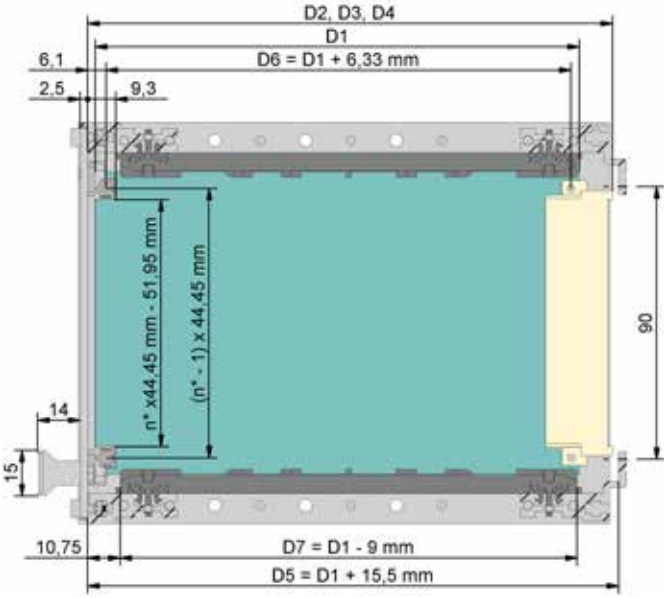
Parts marked with * are not included in the scope of delivery of the basic unit, i.e. must be ordered separately.

Dimension diagrams

Front view, standard

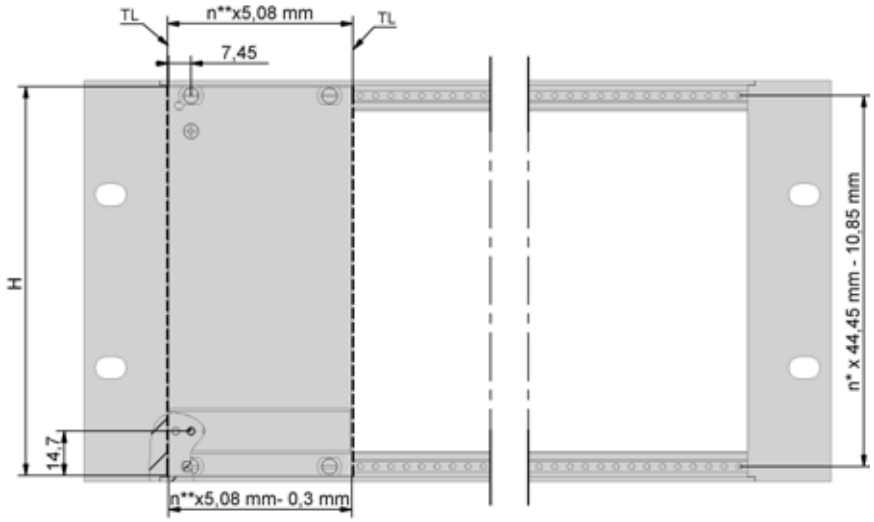


Side view, standard



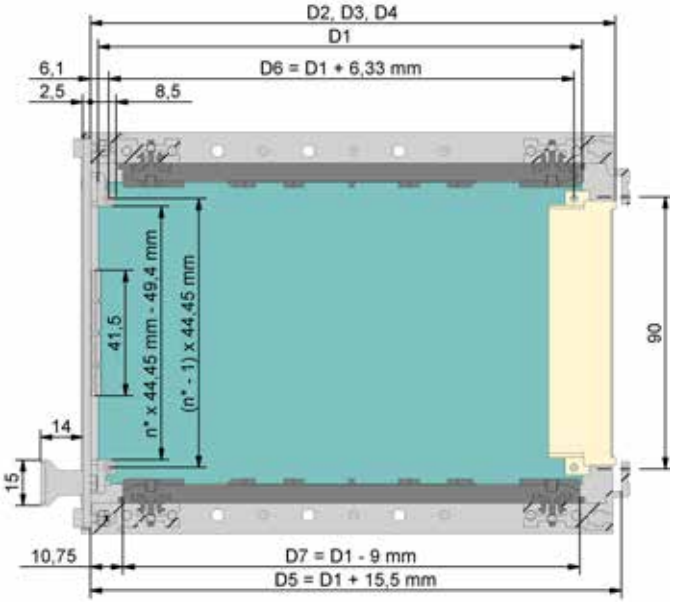
FOR PLUG-IN MODULES

// Product information

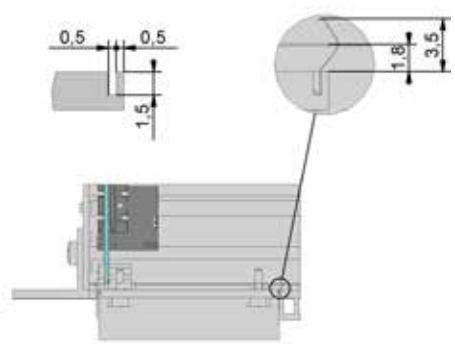


Front view, Future

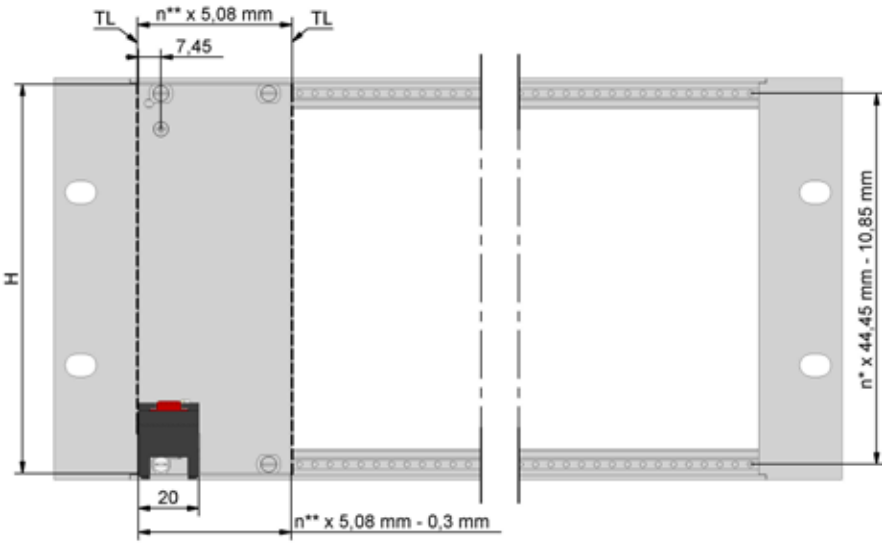
W2 = up to a width of 9 HP there are only two mounting holes in the front panel



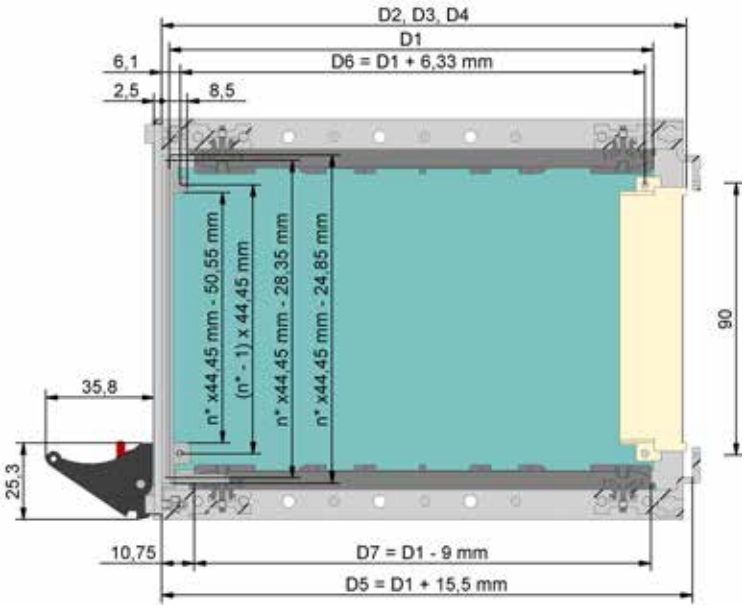
Side view, Future



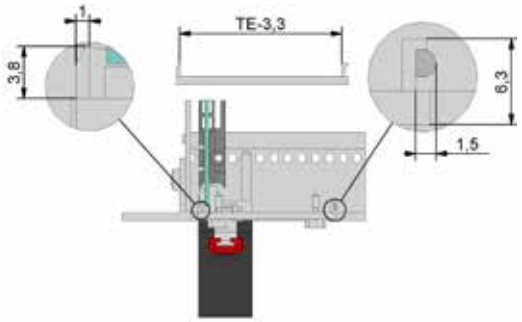
Top view, Future



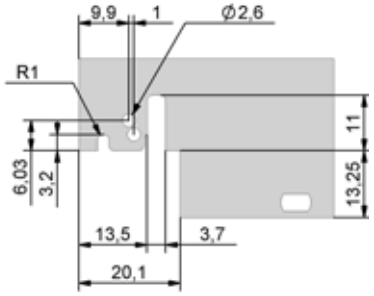
Front view, U extrusion



Side view, U extrusion



Top view, U extrusion



Detail view of cutout dimensions for extractor handle

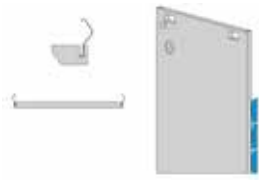
FOR PLUG-IN MODULES

Basic units

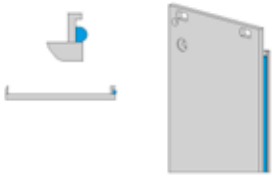
Front panels for plug-in-modules are suitable for all products with 19" mounting dimensions.
They differ with respect to their shielding concept.
There are 3 basic versions available.

Features of the basic units

Standard
Without shielding



Future
"EMC spring" shielding concept
Front panels with groove on left and right to accept EMC spring.



U extrusion
"EMC fabric" shielding concept
Front panels with contact edge left and shielding edge right to affix EMC shielding fabric D

Front panel for plug-in-modules, standard

Material
Aluminum 2.5 mm

Scope of delivery
Plug-in module 1 pc

Delivery form
In units for self-assembly

Note
– Assembly hardware must be ordered separately

Ordering table

U	HP	Front anodized cutting edges raw	Front anodized rear alodined
3 U	4 HP	79 41 21 59	79 41 26 52
3 U	6 HP	79 41 21 67	79 41 26 54
3 U	8 HP	79 41 21 75	79 41 26 56
3 U	10 HP	79 41 21 79	79 41 26 57
3 U	12 HP	79 41 21 83	79 41 26 58
6 U	4 HP	79 41 21 99	79 41 26 62
6 U	6 HP	79 41 22 07	79 41 26 64
6 U	8 HP	79 41 22 15	79 41 26 66
6 U	10 HP	79 41 22 19	79 41 26 67
6 U	12 HP	79 41 22 23	79 41 26 68

FOR PLUG-IN MODULES

// Basic units

Front panel for plug-in-modules, Future

Material
Aluminum 2.5 mm, front anodized / rear alodined

Scope of delivery
Plug-in module 1 pc

Delivery form
In units for self-assembly

Note
– Assembly hardware must be ordered separately

Ordering table

U	HP	Order no.
3 U	4 HP	23 10 03 50
3 U	6 HP	23 10 03 51
3 U	8 HP	23 10 03 52
3 U	10 HP	23 10 03 53
3 U	12 HP	23 10 03 54
6 U	4 HP	23 10 03 70
6 U	6 HP	23 10 03 71
6 U	8 HP	23 10 03 72
6 U	10 HP	23 10 03 73
6 U	12 HP	23 10 03 74

Front panel for plug-in-modules, U extrusion

Material
Aluminum extrusion, front anodized / rear alodined

Scope of delivery
Plug-in module, U extrusion 1 pc

Delivery form
In units for self-assembly

Note
– Assembly hardware must be ordered separately

Ordering table

U	HP	Order no.
3 U	4 HP	**23 10 08 50**
3 U	6 HP	**23 10 08 51**
3 U	8 HP	**23 10 08 52**
3 U	10 HP	**23 10 08 53**
3 U	12 HP	**23 10 08 54**
6 U	4 HP	**23 10 08 70**
6 U	6 HP	**23 10 08 71**
6 U	8 HP	**23 10 08 72**
6 U	10 HP	**23 10 08 73**
6 U	12 HP	**23 10 08 74**

Overview of 19" front panels
Front panels

19" FRONT PANELS

Product information

19" front panels are designed for use in 19" cases and cabinets. They are standardly used as front panels. They can be custom-manufactured with cutouts and surface finishing in accordance with customer requirements.

Standards
- Dimensions in accordance with IEC 60297-2
- IP20 rating in accordance with IEC 60529

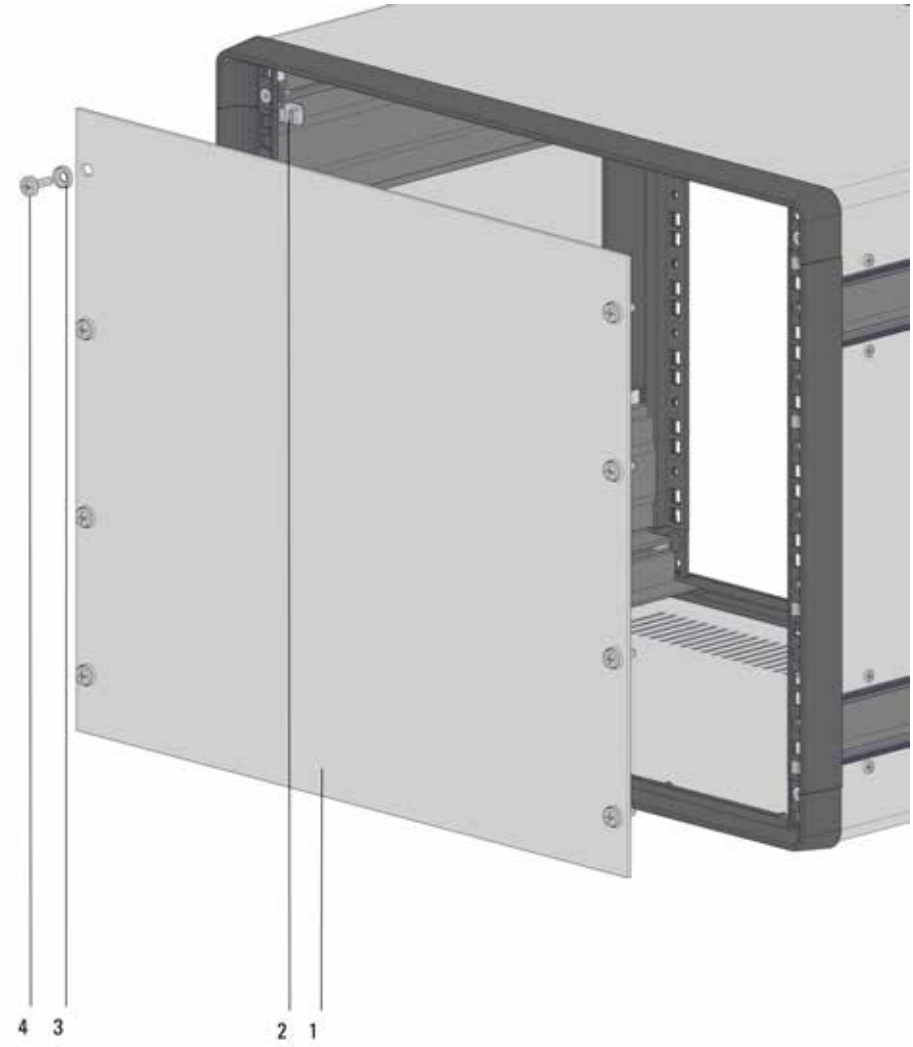
Notes
- The front panels are supplied individually
- Assembly hardware must be ordered separately

Overview

Basic units	H in U											Page
	1	2	3	4	5	6	7	8	9	12	15	
- 19" front panels	●	●	●	●	●	●	●	●	●	●	●	FPL 01.37

19" FRONT PANELS

// Product information

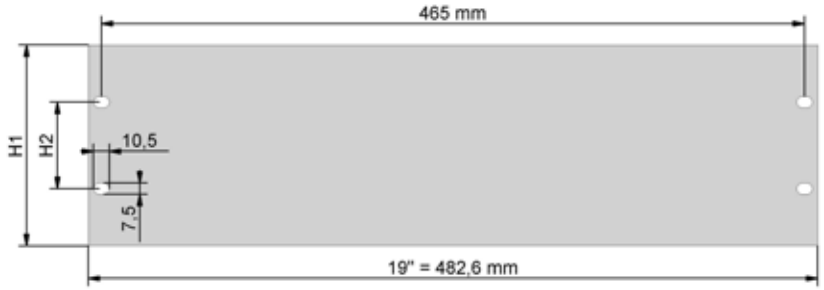


Configuration example

The diagram shows the typical configuration of a 19" front panel mounted in a case

1 Front panel
2 Cage nut*
3 Plastic washer*
4 Cylinder head screw*

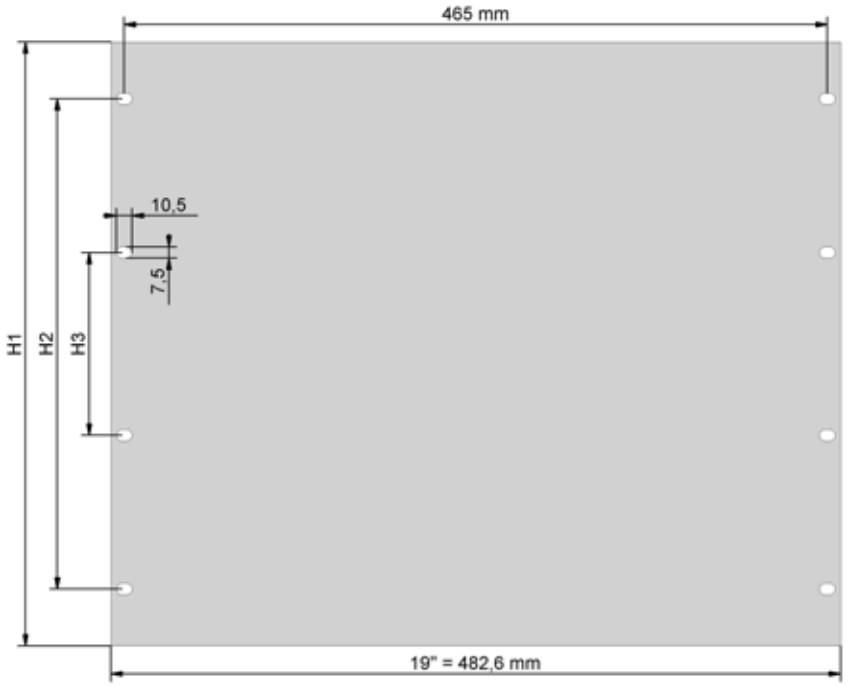
Parts marked with * are not included in the scope of delivery of the basic unit, i.e. must be ordered separately.



Dimension diagrams

Front view

See ordering table for dimensions H1, H2



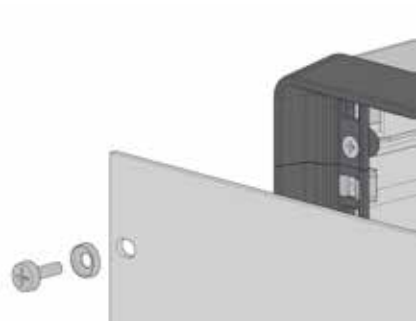
Front view

See ordering table for dimensions H1, H2, H3

19" FRONT PANELS

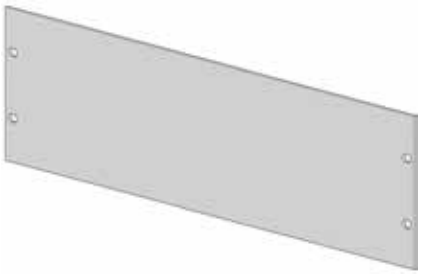
Basic units

19" front panels are intended for use in 19" cabinets or in cases designed to accept 19" dimensions



Features of the basic units

19" Front panels



19" Front panels

Material
Aluminum 3 mm, anodized / cutting edges raw

Delivery form
In units for self-assembly

Scope of delivery
Front panel 1 pc

Notes
– Suitable for 19" case, front and rear
– Assembly hardware must be ordered separately

Ordering table

U	H1	H2	H3	Order no.
1 U	43.6	31.7	-	10 10 13 00
2 U	88.1	76.2	-	10 20 13 00
3 U	132.5	57.1	-	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
7 U	310.3	234.9	-	10 70 13 00
8 U	354.8	279.4	-	10 80 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
15 U	665.9	590.5	235.0	10 15 13 00

Front panels with various accessories
Front panels

ACCESSORIES

// Contents

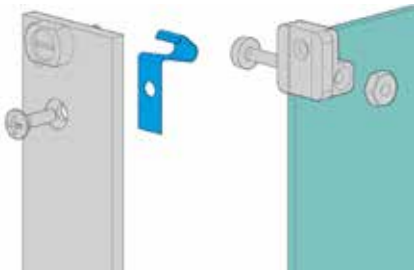
ACCESSORIES

// EMC/ESD shielding material

EMC/ESD shielding material

To ensure that the electronic products function satisfactorily in their electromagnetic environment, i.e. to guarantee the electromagnetic compatibility (EMC) of the products, shielding material is required subject to the electronics and the ambient conditions. Shielding material

EMC springs / gaskets are used to establish contact with mechanical components and thus protect plug-in units and electronics against radio frequency interference. ESD springs / screws are used to discharge static electricity ("ESD" is abbreviation for "electrostatic discharge").



ESD spring

Material
Copper-beryllium

Delivery form
In units for self-assembly

Scope of delivery
ESD spring 1 pc

Note
– is screwed to board holder.

Ordering table

Order no.
79 21 70 02

EMC spring

Is inserted into the groove in the mounting bracket, corner bracket or front panel using a tool. Can be used left or right.

Material
Spring steel 0.3 mm

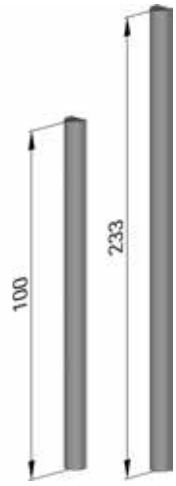
Scope of delivery
EMC spring 1 PU (50 pcs)
Mounting aid (optional) 1 pc

Delivery form
In units for self-assembly

Note
– The number of springs can be determined on an individual basis subject to the degree of shielding required.

Ordering table

Version	Order no.
EMC spring	23 10 04 24
Mounting aid	23 10 04 28



EMC shielding fabric

EMC shielding D is affixed to the edge of the mounting bracket, corner bracket or front panel. Can be used left or right.

Material
Conductive fabric, 1.5 x 2 mm, CuNi coated

Scope of delivery

EMC shielding fabric	1 PU (10 pcs)
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

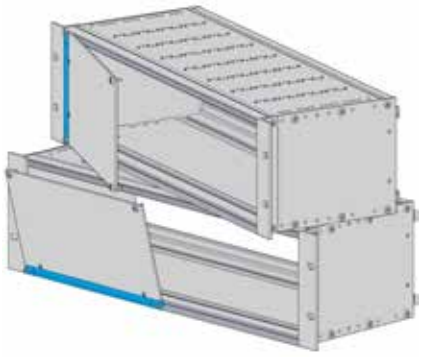
H	Order no.
3 U	**23 10 04 30**
6 U	**23 10 04 31**
by length (1000 mm)	**23 10 04 32**

ACCESSORIES

// Hinges

Hinge extrusion kit

for customized bottom-hinged or side-hinged front panels in conjunction with front rails in 19" environments.



Hinge extrusion with assembly hardware

Material
Aluminum extrusion, anodized
Hinge joints, aluminum anodized

Scope of delivery

Hinge extrusion	1 pc
Hinge joint left	1 pc
Hinge joint right	1 pc
Assembly hardware	1 pc

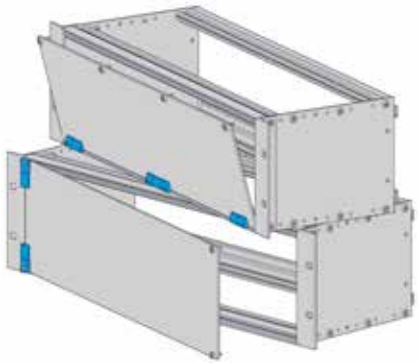
Delivery form
In units for self-assembly

Ordering table

H	W	Bottom-hinged	Side-hinged
	42 HP	79 00 01 13	
	63 HP	79 00 01 14	
	84 HP	79 13 00 00	
3 U			79 14 00 00
6 U			79 14 09 00

Hinge element kit

for customized bottom-hinged or side-hinged front panels in conjunction with front rails in 19" environments.



Hinge elements with assembly hardware

Material
Hinge parts PA 6

Scope of delivery
Hinge elements, bottom-hinged

Hinge element left	2 pcs
Hinge element right	2 pcs
Hinge joint	3 pcs
Assembly hardware for hinge elements	1 pc

Hinge elements, side-hinged

Hinge element top	1 pc
Hinge element bottom	1 pc
Hinge joint	2 pcs
Assembly hardware for hinge elements	1 pc

Delivery form
In units for self-assembly

Ordering table

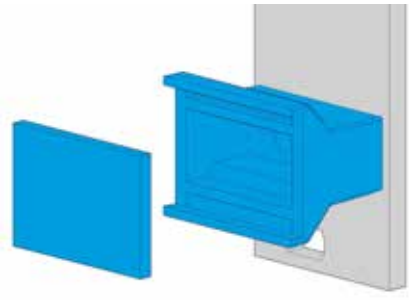
Bottom-hinged	Side-hinged
79 21 01 40	79 21 01 41

ACCESSORIES

Handles

The handles are mounted to the front panels for plug-in-modules. They facilitate insertion and extraction of the front panels. Molded handles are equipped with inscription plates for labeling purposes.

Extractor handles are used for higher insertion and extraction forces. The extractor handles are prepared for mounting of the coding clips with ESD contact pin.



Molded handle

Material
Molded handles made of Noryl (UL-94 V 1).
Identification plate made of aluminum clear anodized.

Scope of delivery

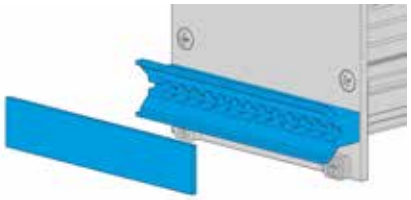
Molded handle	1 pc
Identification plate	1 pc

Delivery form
In units for self-assembly

Notes
- The identification plates are simply snapped on to the molded handles
- Assembly hardware must be ordered separately

Ordering table

W	Gray	Black
3 HP	79 35 01 00	79 35 10 00
4 HP	79 35 02 00	79 35 11 00
5 HP	79 35 03 00	79 35 12 00
6 HP	79 35 04 00	79 35 13 00
7 HP	79 35 05 00	79 35 14 00
8 HP	79 35 06 00	79 35 15 00
10 HP	79 35 07 00	79 35 16 00
12 HP	79 35 08 00	79 35 17 00



Molded handle

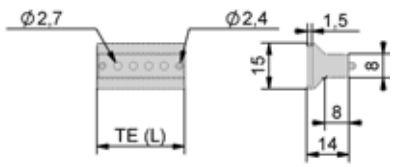
Material
Molded handles made of Noryl (UL-94 V 1).
Identification plate made of aluminum clear anodized.

Scope of delivery

Molded handle	1 pc
Identification plate	1 pc

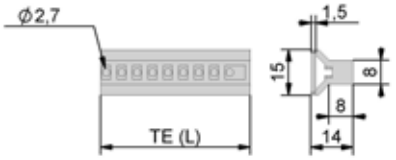
Delivery form
In units for self-assembly

Notes
- The identification plates are simply snapped on to the molded handles
- Assembly hardware must be ordered separately



Ordering table

W	Gray	Black
14 HP	79 35 19 00	79 35 22 00
16 HP	79 35 25 00	79 35 26 00
21 HP	79 35 20 00	79 35 23 00
28 HP	79 35 21 00	79 35 24 00
42 HP	79 35 09 00	79 35 18 00



Extractor handle, bottom, lockable, with ESD contact pin

Material
Handle, plastic, RAL 9005
Socket, zinc die-cast

Scope of delivery

Extractor handle, mounted	1 pc
Assembly kit	1 pc

Delivery form
In units for self-assembly

Notes
– Can only be used in conjunction with front rail with incremented holes
– With 3 U just one extractor handle is needed at the bottom

Ordering table

Order no.
23 11 02 42

Extractor handle, top, lockable, with ESD contact pin

Material
Handle, plastic, RAL 9005
Socket, zinc die-cast

Scope of delivery

Extractor handle, mounted	1 pc
Assembly kit	1 pc

Delivery form
In units for self-assembly

Notes
– Can only be used in conjunction with front rail with incremented holes
– The top extractor handle is standardly used from 6 U onwards

Ordering table

Order no.
23 11 02 43

Extractor handle, bottom, with ESD contact pin

Material
Handle, plastic, RAL 9005
Socket, zinc die-cast

Scope of delivery

Extractor handle, mounted	1 pc
Assembly kit	1 pc

Delivery form
In units for self-assembly

Notes
– Can only be used in conjunction with front rail with incremented holes
– With 3 U just one extractor handle is needed at the bottom

Ordering table

Order no.
23 10 01 53

ACCESSORIES

// Handles, Micro switch

Extractor handle, top, with ESD contact pin

Material
Handle, plastic, RAL 9005
Socket, zinc die-cast

Scope of delivery

Extractor handle, mounted	1 pc
Assembly kit	1 pc

Delivery form
In units for self-assembly

Notes
– Can only be used in conjunction with front rail with incremented holes
– The top extractor handle is standardly used from 6 U onwards

Ordering table

Order no.
23 10 01 54

Telecom extractor handle, bottom, lockable, with ESD contact pin

Material
Handle, plastic, RAL 9005
Socket, zinc die-cast

Scope of delivery

Extractor handle, mounted	1 pc
Assembly kit	1 pc

Delivery form
In units for self-assembly

Notes
– Can only be used in conjunction with front rail with incremented holes
– With 3 U just one extractor handle is needed at the bottom

Ordering table

Order no.
23 11 02 44

Telecom extractor handle, top, lockable, with ESD contact pin

Material
Handle, plastic, RAL 9005
Socket, zinc die-cast

Scope of delivery

Extractor handle, mounted	1 pc
Assembly kit	1 pc

Delivery form
In units for self-assembly

Notes
– Can only be used in conjunction with front rail with incremented holes
– The top extractor handle is standardly used from 6 U onwards

Ordering table

Order no.
23 11 02 45

Micro switch

Scope of delivery

Micro switch	1 pc
Assembly kit	1 pc

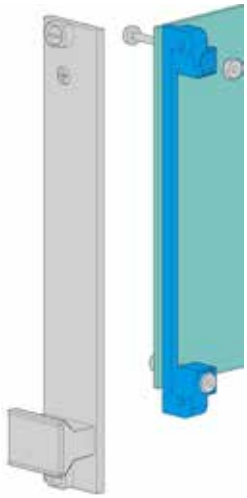
Delivery form
In units for self-assembly

Ordering table

Order no.
23 11 02 46

Board holders

Front panels for plug-in-modules are mechanically connected to the PC boards by means of the board holder.



Board holder, one-piece

Material
PA 6, fiber glass 30%, black

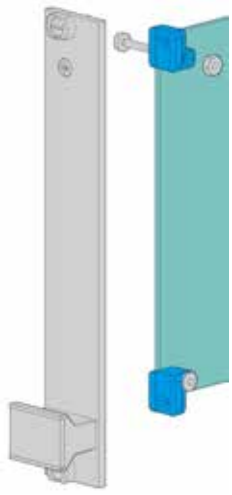
Scope of delivery
Board holder, one-piece 1 pc

Delivery form
In units for self-assembly

Notes
– One-piece, for Eurocard height H = 100 mm
– Order 2 for 6 U
– Assembly hardware must be ordered separately

Ordering table

Order no.
79 30 00 00



Board holder – Front panels

Material
Zinc die-cast

Scope of delivery
Board holder 1 pc

Delivery form
In units for self-assembly

Notes
– With M2.5 threads for front-panel and PC board mounting
– Assembly hardware must be ordered separately

Ordering table

Order no.
79 30 02 00

ACCESSORIES

// Assembly components

Ordering table

Usage		Description	Version material	Standard	Front panels	Front Panels for Plug-in Modules	19" Front Panels	Order no.	PU
Mounting 19" front panels to case / cabinet		Pan head screw with Torx T30	M6x16 stainless steel	ISO 14583			●	**79 91 85 00**	1 PU (100 pcs)
Mounting 19" front panels to case / cabinet		Cross-recessed pan head screw	M6x16 steel, nickel-plated	DIN 7985			●	**79 91 23 00**	1 PU (100 pcs)
Mounting 19" front panels to case / cabinet		Plastic washer	d = 6.8mm PP black				●	**79 91 30 00**	1 PU (100 pcs)
Mounting 19" front panels to case / cabinet		Cage nut	M6 steel zinc-plated				●	**79 91 31 00**	1 PU (100 pcs)
Mounting front panel to subrack		Knurled collar screw	M2-5 steel nickel-plated		●	●		**79 51 50 01**	1 PU (100 pcs)
Mounting front panel to subrack		Knurled collar screw	M2.5 steel galvanized		●	●		**79 51 50 02**	1 PU (100 pcs)
Mounting front panel to subrack		Slotted collar screw	M2.5 steel nickel-plated		●	●		**79 51 50 03**	1 PU (100 pcs)
Mounting front panel to subrack		Slotted collar screw	M2.5 steel black alodined		●	●		**79 51 50 04**	1 PU (100 pcs)
Mounting front panel to subrack		Cross-recessed collar screw	M2.5 steel nickel-plated		●	●		**79 51 50 05**	1 PU (100 pcs)
Mounting front panel to subrack		Cross-recessed collar screw	M2.5 steel black alodined		●	●		**79 51 50 06**	1 PU (100 pcs)
Mounting front panel to subrack		Combined slotted / cross-recessed collar screw	M2-5 steel nickel-plated		●	●		**79 51 50 07**	1 PU (100 pcs)

Ordering table

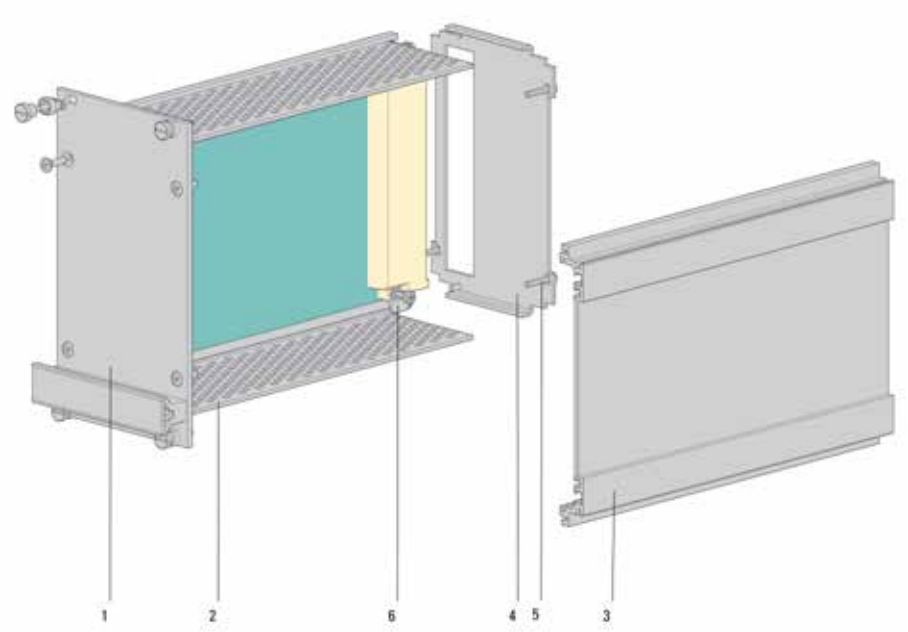
Usage		Description	Version material	Standard	Front panels	Front Panels for Plug-in Modules	19" Front Panels	Order no.	PU
Mounting collar screws to front panel		Metal sleeve	M2.5 steel nickel-plated		●	●		**79 51 50 10**	1 PU (100 pcs)
Mounting collar screws to front panel		Plastic sleeve	M2.5 gray		●	●		**79 51 40 01**	1 PU (100 pcs)
Mounting collar screws to front panel		Plastic sleeve	M2.5 black		●	●		**79 51 40 02**	1 PU (100 pcs)
Mounting molded handles to front panel		Cross-recessed countersunk head screw	M2.5x14 A2	DIN 965		●		**79 91 34 00**	1 PU (100 pcs)
Mounting molded handles to front panel		Square nut	M2.5 steel zinc-plated	DIN 562		●		**79 91 35 00**	1 PU (100 pcs)
Mounting board holder to front panel		Cross-recessed raised countersunk head screw	M2.5x8 steel nickel-plated	DIN 966		●		**79 91 05 00**	1 PU (100 pcs)
Mounting board holder to front panel		Cross-recessed raised countersunk head screw	M2.5x8 steel black zinc-plated	DIN 966		●		**79 91 82 00**	1 PU (100 pcs)
Mounting board holder to front panel		Hexagon nut	M2.5 steel nickel-plated	DIN 934		●		**79 91 07 00**	1 PU (100 pcs)
Mounting front panel to subrack		Quick-release fastener				●		**79 91 50 00**	1 PU (100 pcs)
Mounting hinges to subrack		Square nut with plastic slide	M2.5			●		**79 91 09 00**	1 PU (100 pcs)
Mounting hinges to subrack		Square nut with plastic slide	M3			●		**79 91 12 00**	1 PU (100 pcs)

Future subrack with plug-in units
Plug-in modules

#01 CONTENT
PLUG-IN MODULES

Plug-in modules

GENERAL INFORMATION



// Application

Plug-in modules are designed to accommodate one or more single or double Eurocards. They are mounted in subracks or cases for plug-in-modules.

// Configuration example

The diagram shows the configuration of a plug-in-module using a plug-in unit as an example.

1 Front panel with handle*
2 Cover plate
3 Side extrusion
4 Rear panel
5 Assembly hardware*
6 Mounting bracket for male connector*

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

// 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

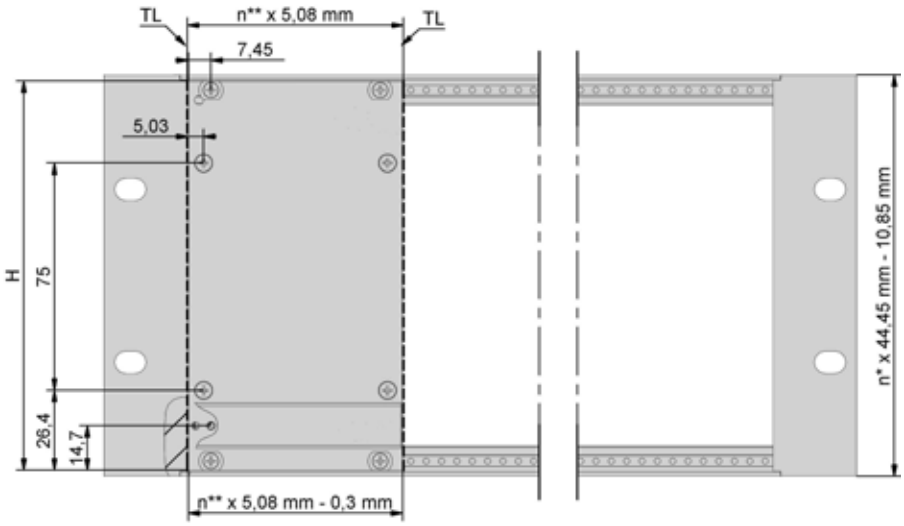
Unit of height U
Measurement unit for height in 19" rack systems
1 U = 44.45 mm

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) - 4.8 mm

Usable width W = (n (HP) x 0.3 mm)

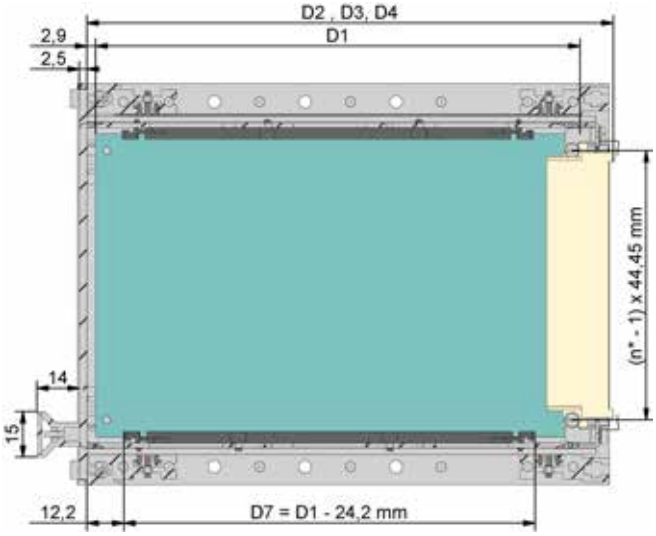


Front view of plug-in module, standard

Mounting dimensions (mm)

	H
3 U	= 128.5
4 U	= 173.0
6 U	= 261.9

* (U)
** (HP)
TL (partition line)



Side view of plug-in module, standard

Dimensions (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

D = overall depth

// 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 wth DIN 16742

GENERAL INFORMATION

// Overview of series

Series	Shielding concept		Features
	EMC	RFI	
Plug-in Units	●	●	for mounting one PCB
Cassettes	●	●	for mounting one or more PCBs

// 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 CASES
⇨ 19"- rackmount and desktop cases
Desktop cases for plug-in units
Desktop cases for 19"

#01 SYSTEMS TECHNOLOGY
⇨ Systems

#01 19" SUBRACKS
⇨ All subrack series

// Questions?

We are happy to help you. Please contact us.

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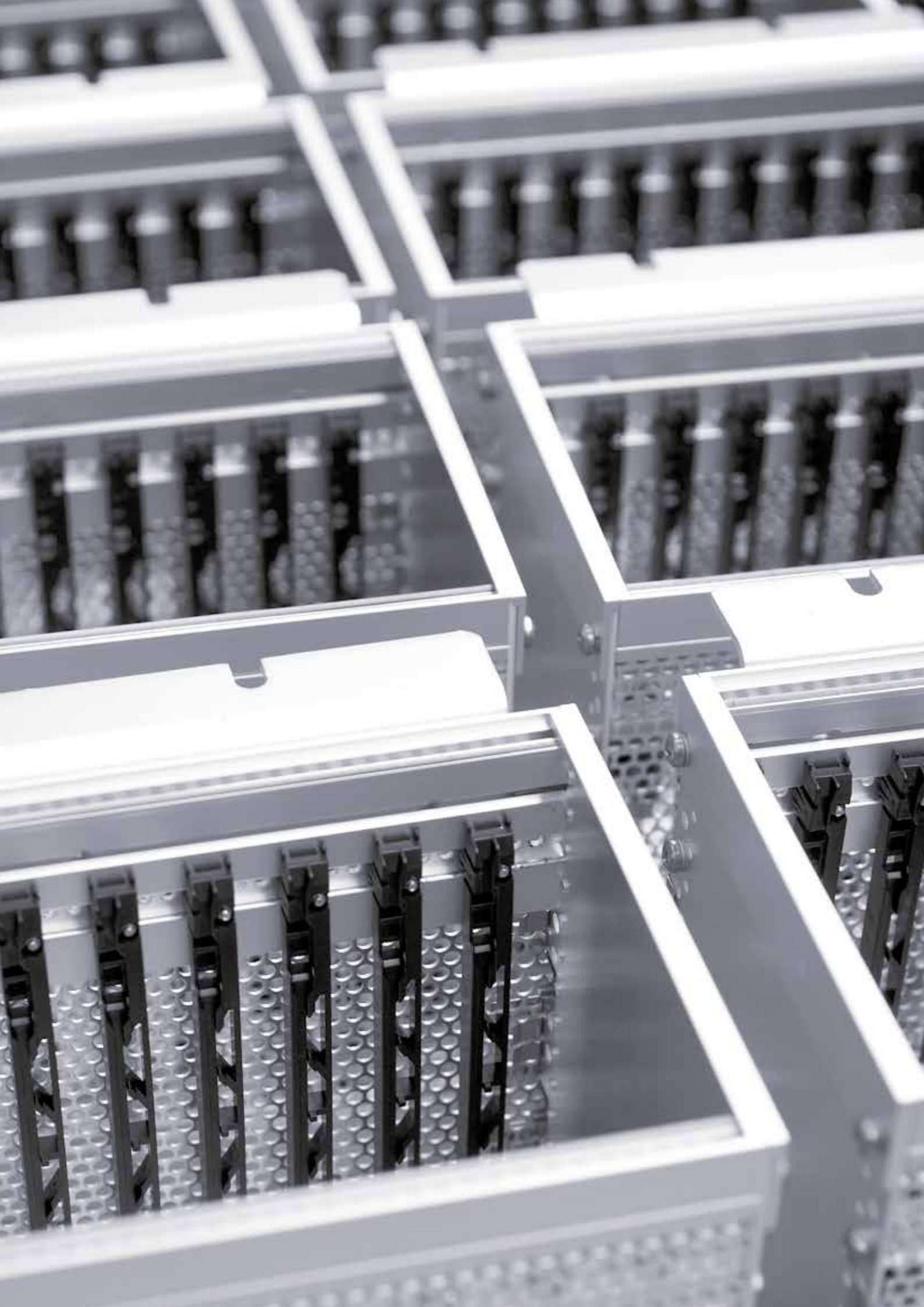


Collection of plug-in units
Plug-in modules

PLUG-IN UNITS

Product information

Shielded assemblies and plug-in units are used for PCB mounting. They guarantee optimum protection for individual PCBs in subracks and cases.

Standards
- Dimensions in accordance with IEC 60297-3-101
- IP 20 rating in accordance with IEC 60529

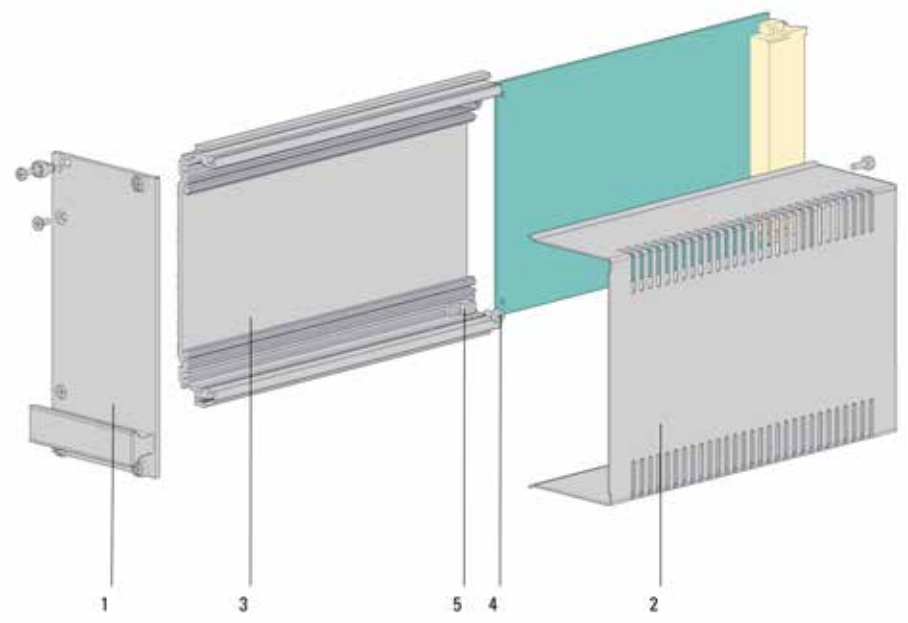
Note
- Plug-in units are supplied in units without front panels and accessories

Overview

Basic units	H in U			W in HP								Page
	3	4	6	6	8	10	12	14	21	28	42	
Shielded assemblies, RFI	●			●	●	●	●					FPL 02.13
Plug-in units, RFI	●		●					●	●	●		FPL 02.14
Plug-in units, shielded	●		●					●	●	●	●	FPL 02.15

PLUG-IN UNITS

// Product information



Configuration example

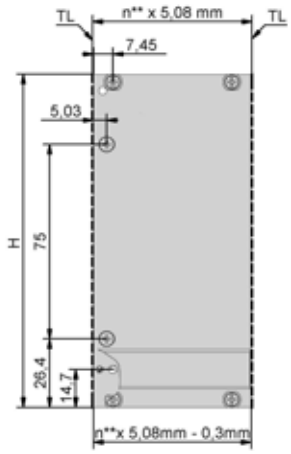
The diagram shows the configuration of a plug-in unit using a shielded assembly with hood and front panel as an example

1 Front panel with handle*
2 Hood
3 Side extrusion
4 Assembly hardware*
5 Board holder for plug-in modules*

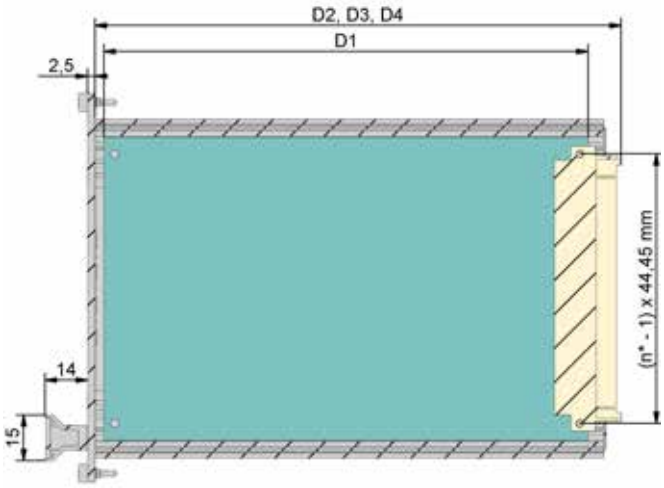
Parts marked with * are not included in the scope of delivery of the basic unit, i.e. must be ordered separately.

Dimension diagrams

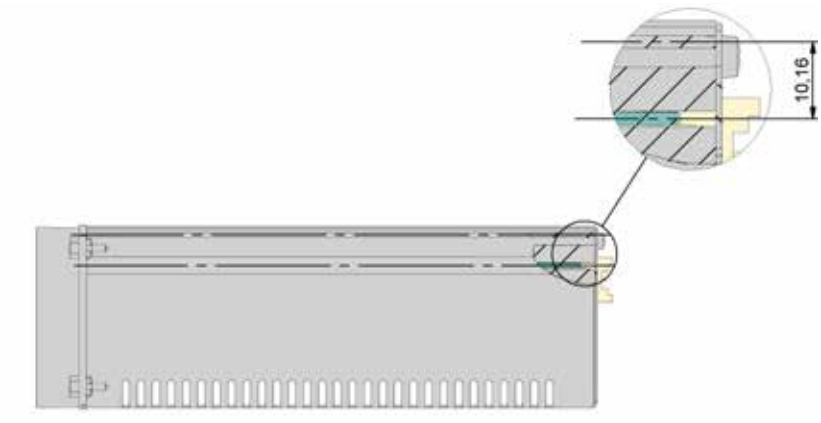
Front view, shielded assembly, RFI



Side view, shielded assembly, RFI

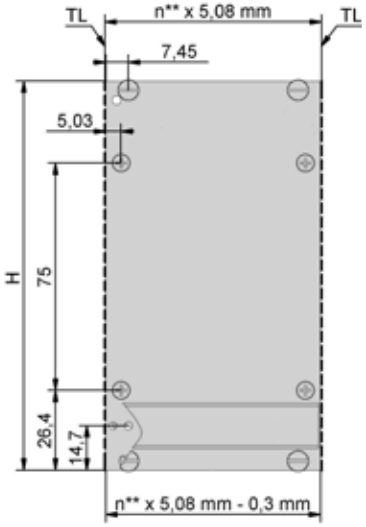


Top view, shielded assembly, RFI

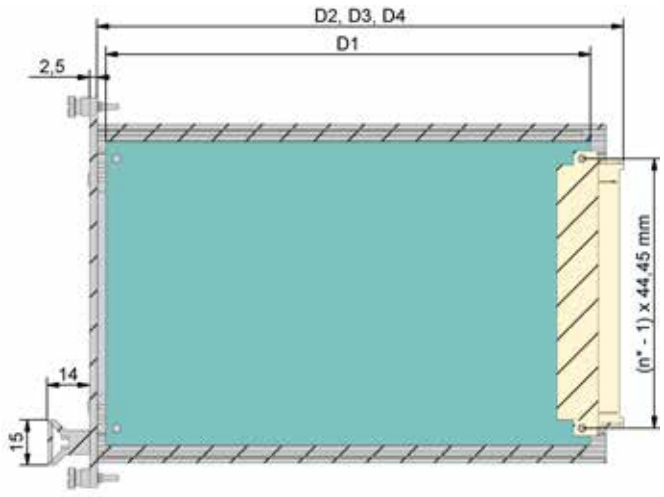


PLUG-IN UNITS

// Product information

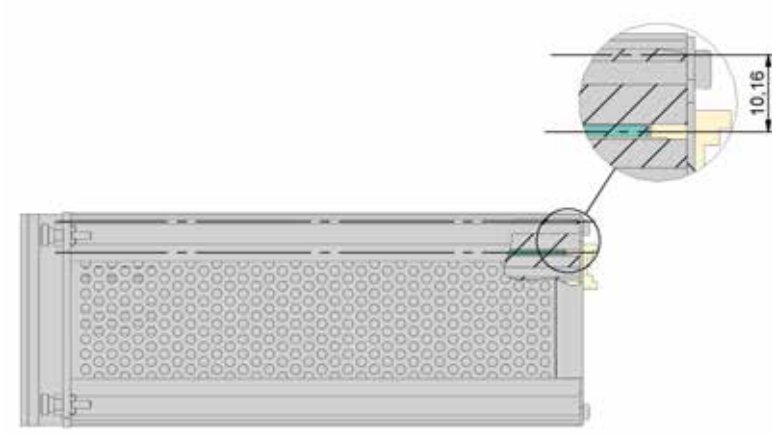


Front view, plug-in units, RFI

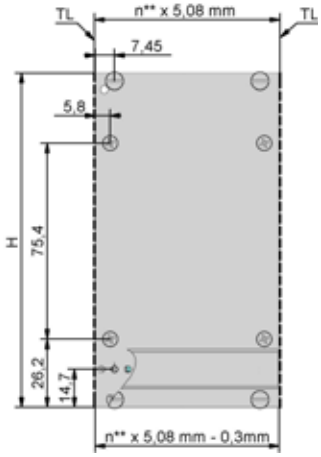


Side view, plug-in units, RFI

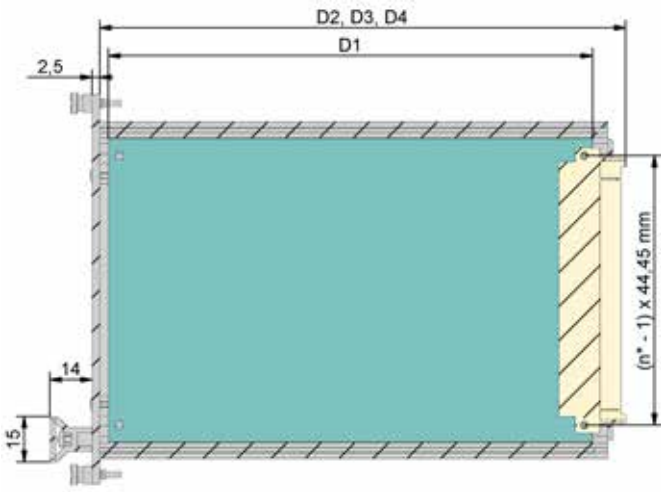
D = overall depth
D1 = usable internal dimension
D2 = mounting depth in 19" rack



Top view, plug-in units, RFI

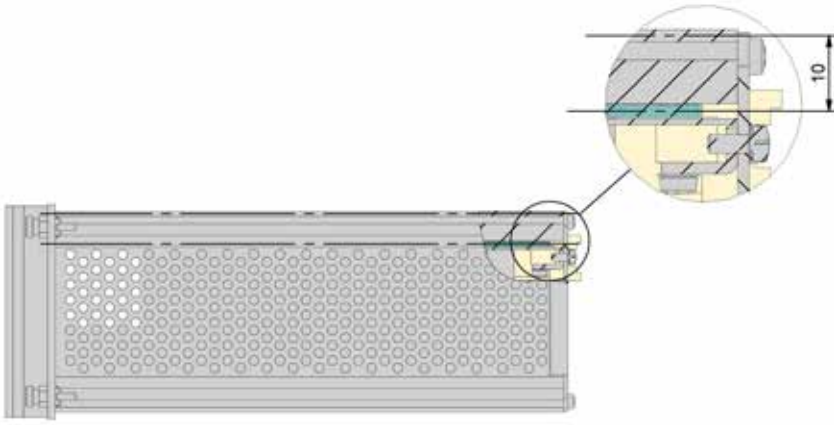


Front view, plug-in units, shielded



Side view, plug-in units, RFI

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



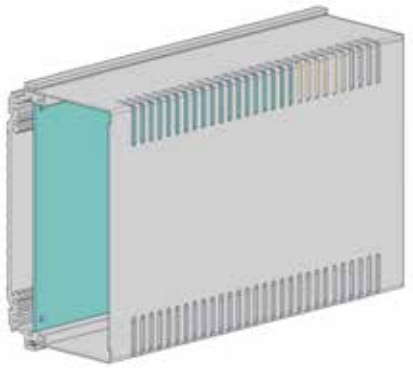
Top view, plug-in units, shielded

PLUG-IN UNITS

Basic units

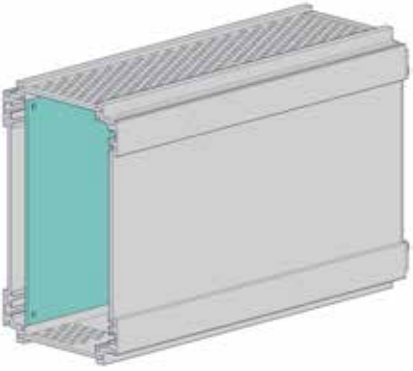
Plug-in modules to fit all products with 19" mounting dimensions. There are 3 basic units which differ with respect to their shielding and mounting capabilities.

Features of the basic units



Shielded assemblies, RFI
They are made up of a side extrusion and a hood and can accommodate one PCB in the extruded case. They fulfill the highest shielding requirements.

Plug-in units, RFI
They are made up of several parts and can accommodate one PCB on the left and one on the right in the extruded case. Please note that the PCB on the right is then inserted the other way up. They fulfill the highest shielding requirements.



Plug-in units, shielded
They are made up of several parts and can accommodate one PCB on the left and one on the right in the extruded case. Please note that the PCB on the right is then inserted the other way up. They fulfill the highest shielding requirements.

Shielded assembly, RFI

Material
Hood stainless steel 1.4016 glossy, ferromagnetic, 1 mm; side extrusion aluminum alodined

Scope of delivery

Hood	1 pc
Side extrusion	1 pc
Assembly hardware	1 pc

Delivery form
In units for self-assembly

Notes
- Shielded assemblies are available with a depth of D = 172.5 mm
- Front panel, handle, board holder and assembly hardware must be ordered separately

Ordering table

U	HP	Order no.
3 U	6 HP	**79 00 04 06**
3 U	8 HP	**79 00 04 08**
3 U	10 HP	**79 00 04 10**
3 U	12 HP	**79 00 04 12**

PLUG-IN UNITS

// Basic units

Plug-in units, RFI

Material
Side extrusions aluminum alodined, top and bottom covers aluminum alodined, rear panel stainless steel 1.4016

Scope of delivery

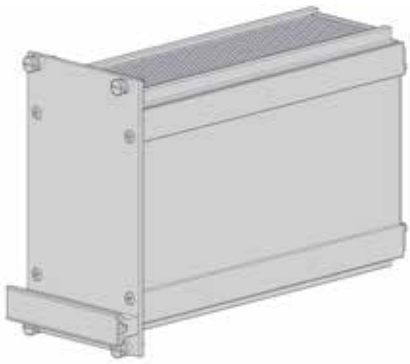
Side extrusion left	1 pc
Side extrusion right	1 pc
Top / bottom cover	1 pc
Rear panel	1 pc
Assembly hardware	1 pc

Delivery form
In units for self-assembly

Note
– Front panel, handle, board holder and assembly hardware must be ordered separately

Ordering table

U	HP	D = 172.5	D = 232.5
3 U	14 HP	**79 00 06 14**	**79 00 09 14**
3 U	21 HP	**79 00 06 21**	**79 00 09 21**
3 U	28 HP	**79 00 06 28**	**79 00 09 28**
6 U	14 HP	**79 00 07 14**	-
6 U	21 HP	**79 00 07 21**	-
6 U	28 HP	**79 00 07 28**	-



Plug-in units, shielded

Material
Side extrusions made of aluminum raw; rear panel with connector cutout made of stainless steel 1.4016 glossy, ferromagnetic; perforated cover plates made of aluminum raw

Scope of delivery

Side extrusion	2 pcs
Top / bottom cover	2 pcs
Rear panel	1 pc
Assembly hardware	1 pc

Delivery form
In units for self-assembly

Note
– Front panel, handle, board holder and assembly hardware must be ordered separately

Ordering table

U	W	D = 172.5	D = 232.5
3 U	14 HP	**79 00 03 00**	**79 00 03 10**
3 U	21 HP	**79 00 03 01**	**79 00 03 11**
3 U	28 HP	**79 00 03 02**	**79 00 03 12**
3 U	42 HP	**79 00 03 03**	**79 00 03 13**
6 U	14 HP	**79 00 03 20**	**79 00 03 30**
6 U	21 HP	**79 00 03 21**	**79 00 03 31**
6 U	28 HP	**79 00 03 22**	**79 00 03 32**
6 U	42 HP	**79 00 03 23**	**79 00 03 33**

Overview of cassettes
Plug-in modules

CASSETTES

Product information

Cassettes are used to mount one or more PCBs. They thus form a self-contained functional unit. The cassettes guarantee optimum PCB protection in subracks and cases.

Standards
- Dimensions in accordance with IEC 60297-3-101
- IP 20 rating in accordance with IEC 60529

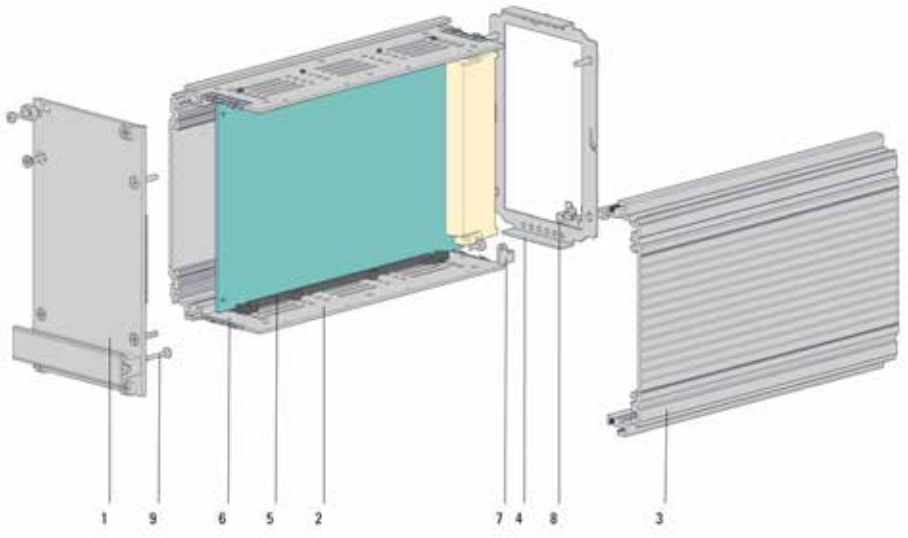
Note
- Cassettes are supplied in units without front panels and accessories

Overview

Basic Units	H in U			W in HP				Page
	3	4	6	14	21	28	42	
- Cassettes, RFI	●		●	●	●	●		FPL 02.22
- Cassettes, shielded	●		●	●	●	●	●	FPL 02.23

CASSETTES

// Product information



Configuration example

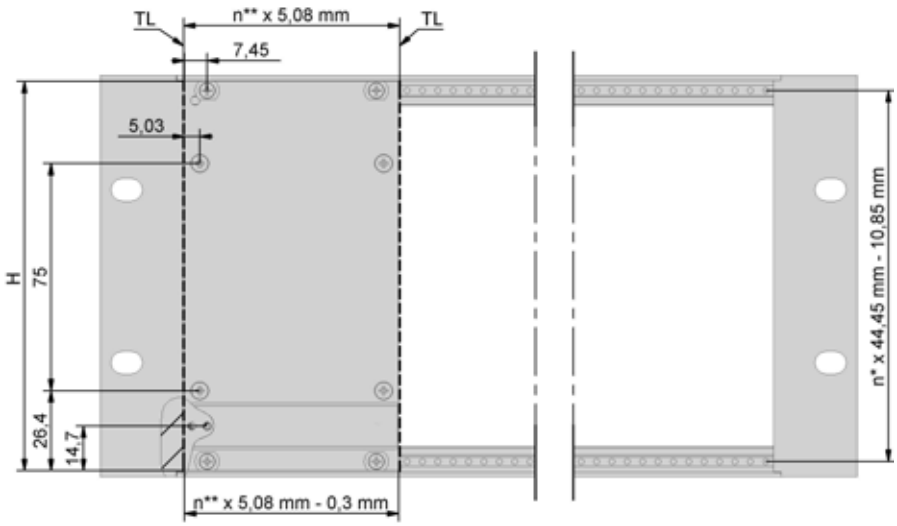
The diagram shows the typical configuration of a cassette using an RFI cassette as an example.

1 Front panel with handle*
2 Cover plate
3 Side extrusion
4 Rear panel
5 Card guide for cover plate*
6 EMC spring*
7 Mounting bracket for male connector*
8 Mounting bracket for female connector*
9 Assembly hardware*

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

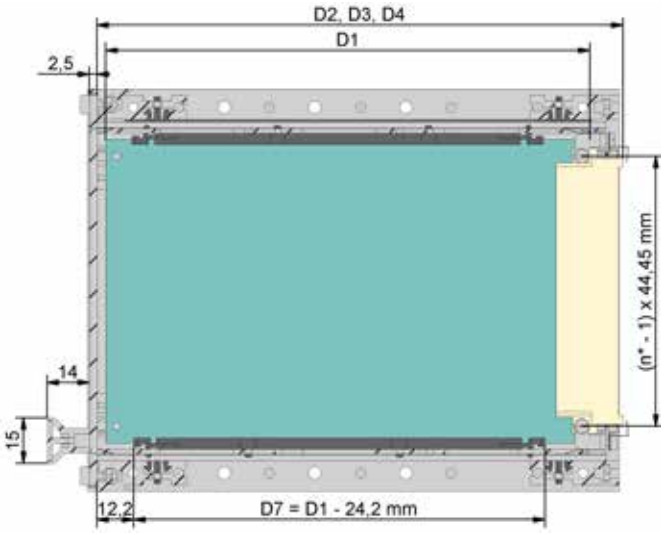
Dimension diagrams

Front view, cassette, RFI

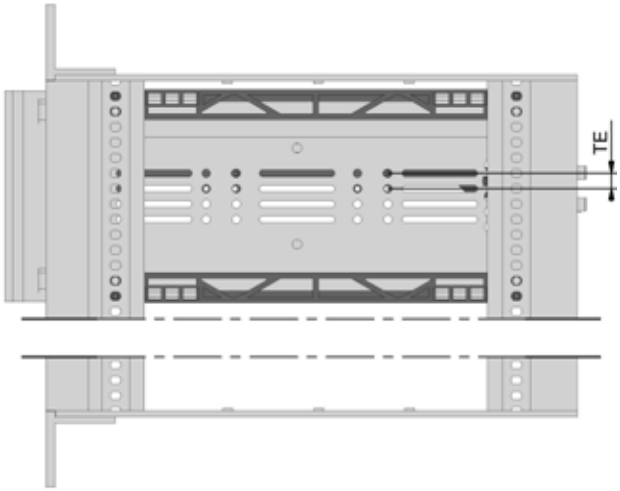


Side view, cassette, RFI

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

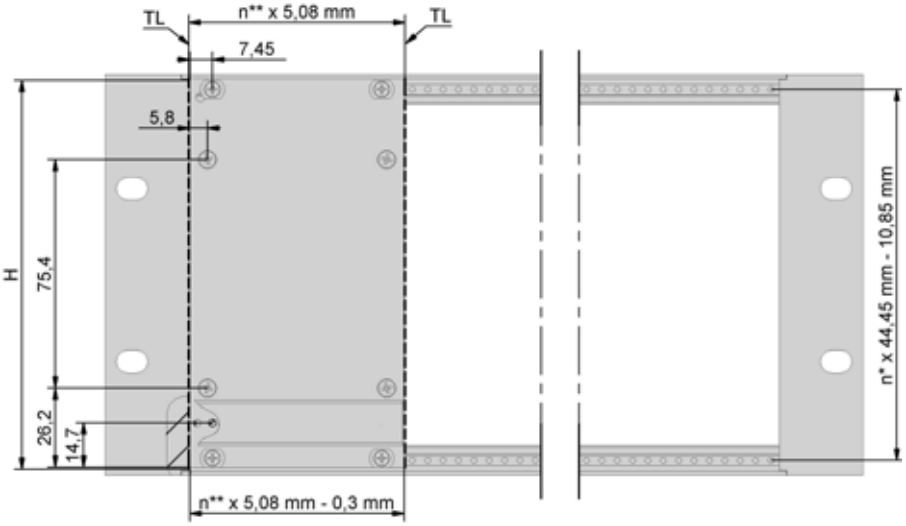


Top view, cassette, RFI

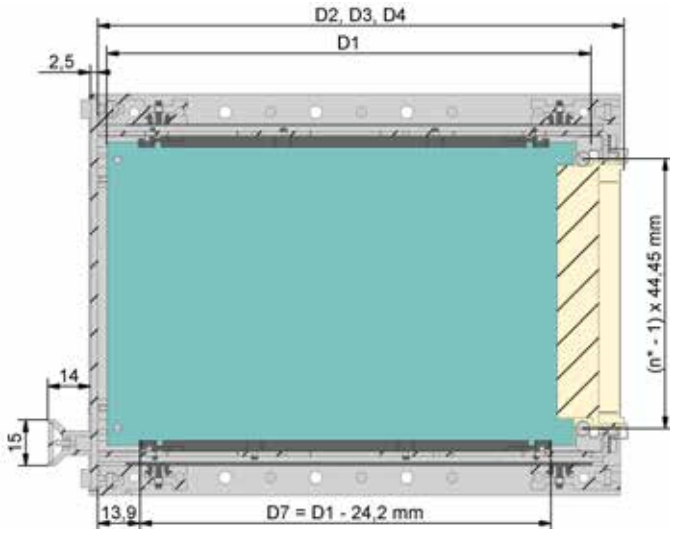


CASSETTES

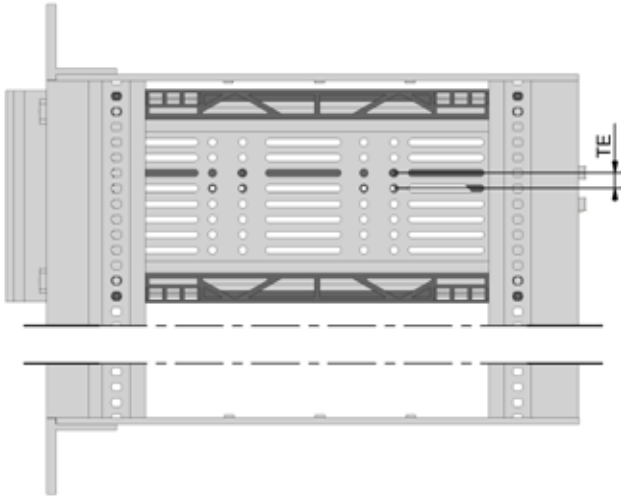
// Product information



Front view, cassette, shielded



Side view, cassette, shielded



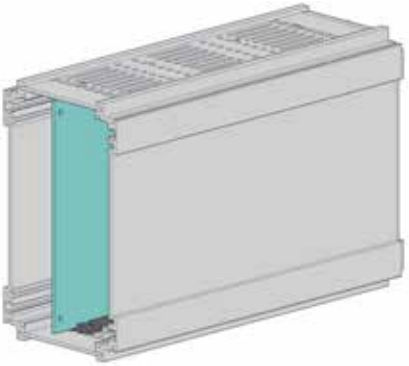
Top view, cassette, shielded

Basic units

Cassettes are suitable for all products with 19" mounting dimensions.
There are 2 basic units which differ with respect to their shielding capabilities.

Features of the basic units

Cassette, RFI
For highest shielding requirements



Cassette, shielded
For standard shielding requirements

CASSETTES

// Basic units

Cassette, RFI

Material
Side extrusions aluminum alodined, top and bottom covers aluminum alodined, rear panel stainless steel 1.4016

Scope of delivery

Side extrusion left	1 pc
Side extrusion right	1 pc
Top / bottom cover	1 pc
Rear panel	1 pc
Assembly hardware	1 pc

Delivery form
In units for self-assembly

Note
– Front panel, handle, card guides, board holder and assembly hardware must be ordered separately

Ordering table

U	HP	D = 172.5	D = 232.5
3 U	14 HP	79 00 14 14	79 00 08 14
3 U	21 HP	79 00 14 21	79 00 08 21
3 U	28 HP	79 00 14 28	79 00 08 28
6 U	14 HP	79 00 05 14	-
6 U	21 HP	79 00 05 21	-
6 U	28 HP	79 00 05 28	-

Cassette, shielded

Material
Side extrusions made of aluminum raw; rear panel with connector cutout made of stainless steel 1.4016 glossy, ferromagnetic; perforated cover plates made of aluminum raw

Scope of delivery

Side extrusion	2 pcs
Top / bottom cover	2 pcs
Rear panel	1 pc
Assembly hardware	1 pc

Delivery form
In units for self-assembly

Note
– Front panel, handle, card guides, board holder and assembly hardware must be ordered separately

Ordering table

U	HP	D = 172.5	D = 232.5
3 U	14 HP	79 00 03 40	79 00 03 50
3 U	21 HP	79 00 03 41	79 00 03 51
3 U	28 HP	79 00 03 42	79 00 03 52
3 U	42 HP	79 00 03 43	79 00 03 53
6 U	14 HP	79 00 03 60	79 00 03 70
6 U	21 HP	79 00 03 61	79 00 03 71
6 U	28 HP	79 00 03 62	79 00 03 72
6 U	42 HP	79 00 03 63	79 00 03 73

Plug-in modules with various accessories
Plug-in modules

ACCESSORIES

// Contents

ACCESSORIES

// Front panels

Front panels

Front panels for plug-in modules

Front panel for shielding assembly, RFI

Material
Aluminum 2.5mm
Front anodized / rear alodined

Scope of delivery
Front panel 1 pc

Delivery form
In units for self-assembly

Notes
– With rear groove for shielding spring
– Assembly hardware must be ordered separately

Ordering table

H	W	Order no.
3 U	6 HP	23 10 07 06
3 U	8 HP	23 10 07 08
3 U	10 HP	23 10 07 10
3 U	12 HP	23 10 07 12

Front panel for plug-in unit + cassette, RFI

Material
Aluminum 2.5mm
Front anodized / rear alodined

Scope of delivery
Front panel 1 pc

Delivery form
In units for self-assembly

Notes
– With rear groove for shielding spring
– Assembly hardware must be ordered separately

Ordering table

H	W	Order no.
3 U	14 HP	23 10 05 14
3 U	21 HP	23 10 05 21
3 U	28 HP	23 10 05 28
6 U	14 HP	23 10 06 14
6 U	21 HP	23 10 06 21
6 U	28 HP	23 10 06 28

Front panel for plug-in unit + cassette, shielded

Material
Aluminum 2.5mm
Front anodized / rear alodined

Scope of delivery
Front panel 1 pc

Delivery form
In units for self-assembly

Note
– Assembly hardware must be ordered separately

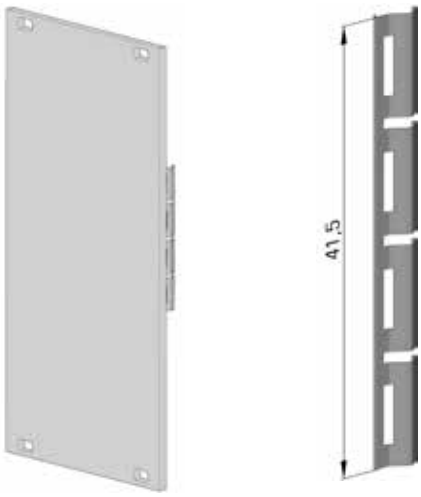
Ordering table

H	W	Order no.
3 U	14 HP	**79 41 26 00**
3 U	21 HP	**79 41 26 01**
3 U	28 HP	**79 41 26 02**
3 U	42 HP	**79 41 26 03**
6 U	14 HP	**79 41 26 04**
6 U	21 HP	**79 41 26 05**
6 U	28 HP	**79 41 26 06**
6 U	42 HP	**79 41 26 07**

ACCESSORIES

EMC/ESD shielding material

To ensure that the electronic products function satisfactorily in their electromagnetic environment, i.e. to guarantee the electromagnetic compatibility (EMC) of the products, shielding material is required subject to the electronics and the ambient conditions. Shielding material EMC springs / gaskets are used to establish contact with mechanical components and thus protect plug-in units and electronics against radio frequency interference.
ESD springs / screws are used to discharge static electricity ("ESD" is abbreviation for "electrostatic discharge").



EMC spring

The EMC spring is inserted into the front panel using a tool. It can be used left or right.

Material
Spring steel 0.3 mm

Scope of delivery

EMC spring	1 PU (50 pcs)
Mounting aid (optional)	1 pc

Delivery form
In units for self-assembly

Note
– The number of springs can be determined on an individual basis subject to the degree of shielding required.

Ordering table

Version	Order no.
EMC spring	23 10 04 24
Mounting aid	23 10 04 28

RFI conversion kit

Material
Spring steel

Scope of delivery

Shielding spring for front panel	
for 3 U	2 pcs
for 6 U	3 pcs
Shielding spring for cover plate	8 pcs
Cover plate mounting	16 pcs

Delivery form
In units for self-assembly

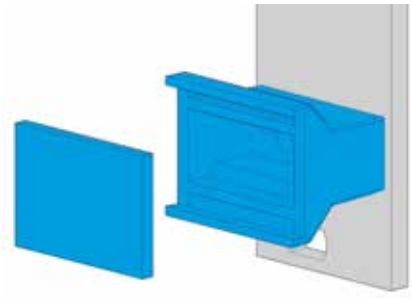
Note
– RFI protection thanks to the additional deployment of shielding springs and mounting elements

Ordering table

Tool for shielding spring	3 U	6 U
23 10 04 28	23 10 04 26	23 10 04 27

Handles

The handles are mounted on the front panels for plug-in-modules. They facilitate insertion and extraction of the front panels. Molded handles are equipped with inscription plates for labeling purposes.



Molded handle

Material
Molded handles made of Noryl (UL-94 V 1). Identification plate made of aluminum clear anodized.

Scope of delivery

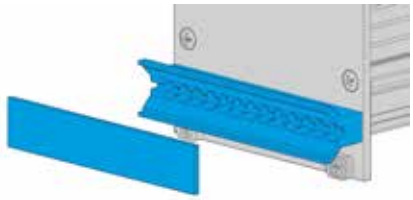
Molded handle	1 pc
Identification plate	1 pc

Delivery form
In units for self-assembly

Notes
– The identification plates are simply snapped on to the molded handles
– Assembly hardware must be ordered separately

Ordering table

W	Gray	Black
6 HP	79 35 04 00	79 35 13 00
8 HP	79 35 06 00	79 35 15 00
10 HP	79 35 07 00	79 35 16 00
12 HP	79 35 08 00	79 35 17 00



Molded handle

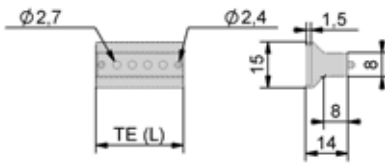
Material
Molded handles made of Noryl (UL-94 V 1). Identification plate made of aluminum clear anodized.

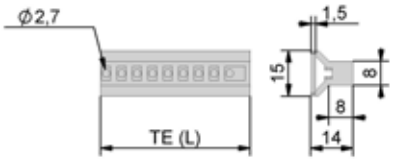
Scope of delivery

Molded handle	1 pc
Identification plate	1 pc

Delivery form
In units for self-assembly

Notes
– The identification plates are simply snapped on to the molded handles
– Assembly hardware must be ordered separately





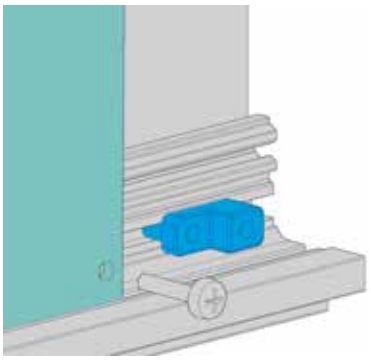
Ordering table

W	Gray	Black
14 HP	79 35 19 00	79 35 22 00
21 HP	79 35 20 00	79 35 23 00
28 HP	79 35 21 00	79 35 24 00
42 HP	79 35 09 00	79 35 18 00

ACCESSORIES

Board holders

The board holder is used to mount PCBs on the side extrusion.



Board holder – Plug-in modules

Material
Zinc die-cast

Scope of delivery
Board holder 1 pc

Delivery form
In units for self-assembly

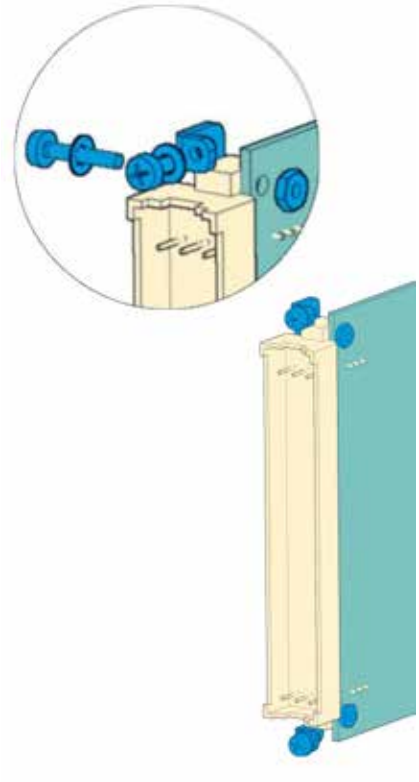
Note
– Assembly hardware must be ordered separately

Ordering table

Order no.
79 30 03 00

Mounting bracket for male connector

Male connector mounting brackets are used to secure female connectors to the PCBs.



Mounting bracket for male connector

Material
Sheet steel 1.4016

Scope of delivery

Male connector mounting bracket left	1 pc
Male connector mounting bracket right	1 pc
Assembly components	

Delivery form
In units for self-assembly

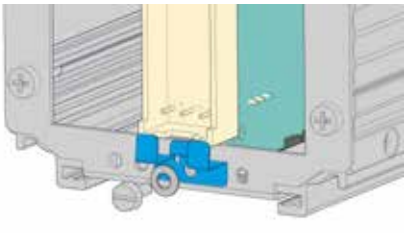
Ordering table

Order no.
79 70 01 00

ACCESSORIES

Mounting bracket for female connector

Female connector mounting brackets are used to secure the connectors to the rear panel of the cassette.



Mounting bracket for female connector

Material
Sheet steel 1.4016

Scope of delivery
Mounting bracket for female connector 1 pc

Delivery form
In units for self-assembly

Note
– Assembly hardware must be ordered separately

Ordering table

Order no.
79 70 02 00

Ordering table

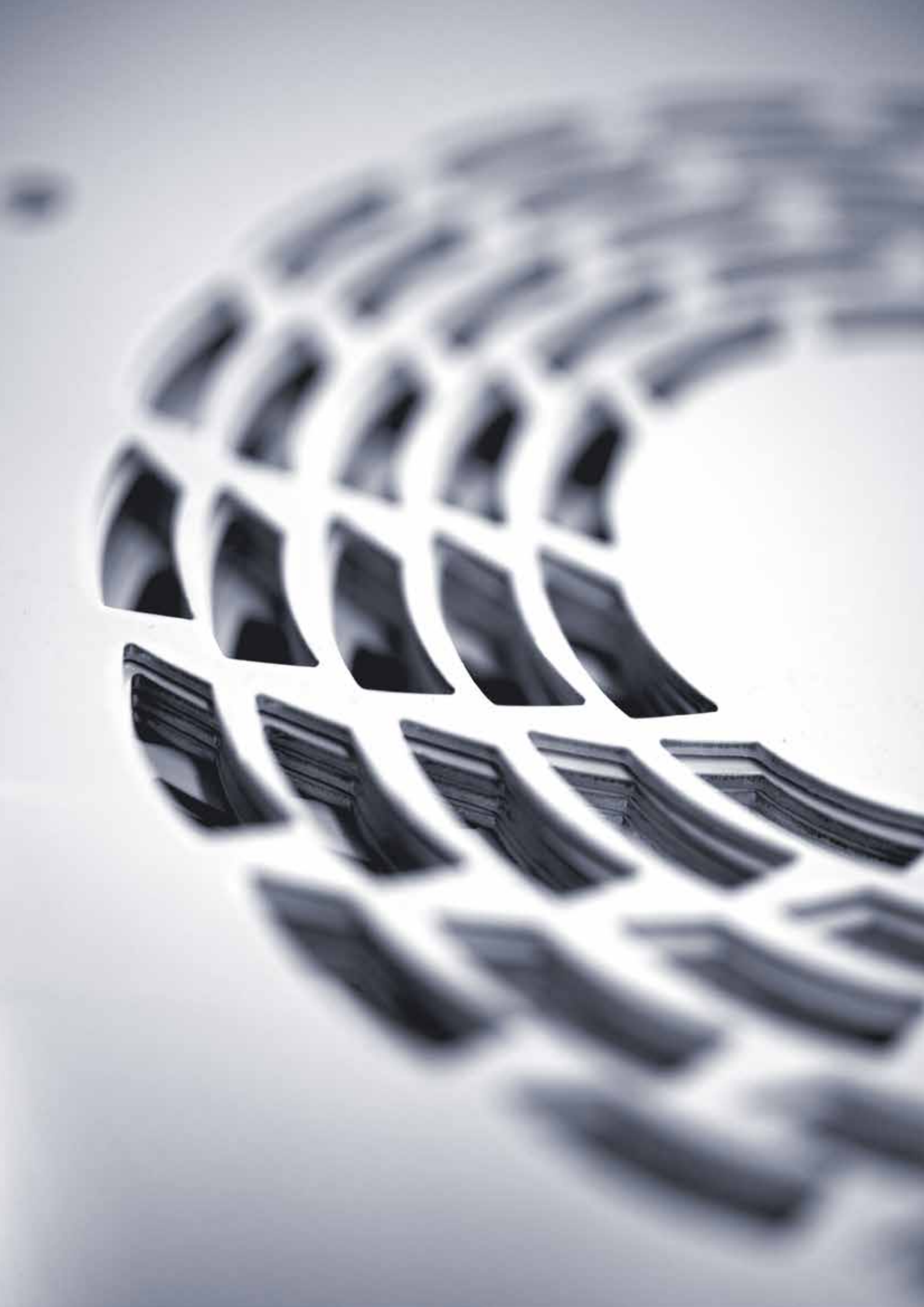
Usage		Description	Version Material	Standard	Plug-in unit	Cassette	Order no.	PU
Mounting front panel to subrack		Knurled collar screw	M2-5 steel nickel-plated		●	●	**79 51 50 01**	1 PU (100 pcs)
Mounting front panel to subrack		Knurled collar screw	M2.5 steel galvanized		●	●	**79 51 50 02**	1 PU (100 pcs)
Mounting front panel to subrack		Slotted collar screw	M2-5 steel nickel-plated		●	●	**79 51 50 03**	1 PU (100 pcs)
Mounting front panel to subrack		Slotted collar screw	M2.5 steel black alodined		●	●	**79 51 50 04**	1 PU (100 pcs)
Mounting front panel to subrack		Cross-recessed collar screw	M2-5 steel nickel-plated		●	●	**79 51 50 05**	1 PU (100 pcs)
Mounting front panel to subrack		Cross-recessed collar screw	M2.5 steel black alodined		●	●	**79 51 50 06**	1 PU (100 pcs)
Mounting front panel to subrack		Combined slotted / cross-recessed collar screw	M2-5 steel nickel-plated		●	●	**79 51 50 07**	1 PU (100 pcs)
Mounting hood to side extrusion		Cylinder head screw with dog point	M3x6 steel zinc-plated	DIN 7500	●		**79 51 50 53**	1 PU (100 pcs)
Mounting collar screws to front panel		Metal sleeve	M2-5 steel nickel-plated		●	●	**79 51 50 10**	1 PU (100 pcs)
Mounting collar screws to front panel		Plastic sleeve	M2.5 gray		●	●	**79 51 40 01**	1 PU (100 pcs)

ACCESSORIES

// Assembly components

Ordering table

Usage		Description	Version Material	Standard	Plug-in unit	Cassette	Order no.	PU
Mounting collar screws to front panel		Plastic sleeve	M2.5 black		●	●	**79 51 40 02**	1 PU (100 pcs)
Mounting PCB to board holder		Cross-recessed pan head screw	M2.5x10 steel zinc-plated	DIN 7500	●	●	**79 51 50 51**	1 PU (100 pcs)
Mounting board holders to side extrusion		Cross-recessed countersunk head screw	M2.5x10 steel zinc-plated	DIN 7500	●	●	**79 51 50 50**	1 PU (100 pcs)
Mounting molded handles to front panel (RFI)		Cross-recessed countersunk head screw	eco-syn 3x12 Steel zinc-plated		●	●	**79 51 50 52**	1 PU (100 pcs)
Mounting molded handles to front panel (shielded)		Cross-recessed countersunk head screw	M2.5x14 A2	DIN 965	●	●	**79 91 34 00**	1 PU (100 pcs)
Mounting molded handles to front panel (shielded)		Square nut	M2 steel nickel-plated	DIN 562	●	●	**79 91 35 00**	1 PU (100 pcs)
Mounting front panel to subrack		Quick-release fastener	M2.5 steel zinc-plated		●	●	**79 91 50 00**	1 PU (100 pcs)



//FPL 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.

//FPL Appendix

// 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

//FPL 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.

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