

Enclosures & Components

Systemkit 12K

Modern designed EMC sub rack with a large selection of assembly options.

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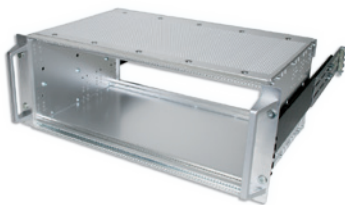
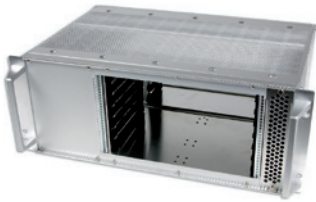
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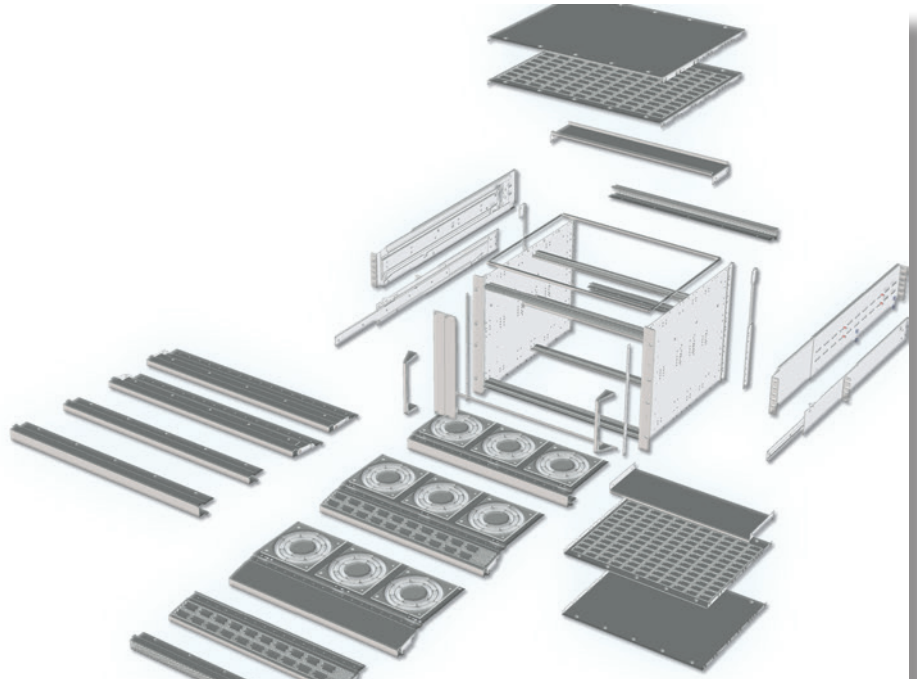
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4.1 Systemkit 12K Overview

The origin of the Systemkit 12K is our highly successful type 12. The Systemkit has several advantages, already in the standard version:

- Choose between a VME, a VME64x or a CPCI application
 - Possibility for Rear I/O card mounting
 - A basic EMC level is attained with the basic version (without additional EMC parts)
 - Choose from the most common case heights and depths as standard version
 - New sets have been created to facilitate the order of complementary parts
- and last but not least:**
- The Systemkit 12K gives the ideal platform basis for modified standards and **customised products**

CPCI/VME/VME64X

The first step when ordering your system is to choose the application. This can be either CPCI, VME64x or VME. Some of the parts shown in this catalogue are for CPCI, VME64x or for VME only. Whenever there is **no indication** on neither CPCI, VME64x or VME the part can be **used for all applications**.

Modified Standards

Examples for **possible modifications** are:

- Other dimensions for mounting different card depth
- Combination of rear I/O and recessed mounting
- Other materials and/or colours
- For more information contact our sales support

"Electromagnetic compatibility is the ability of a system to operate in the intended environment without causing or suffering unacceptable degradation of performance due to unintentional electromagnetic radiation or response." The EMC characteristics of a system therefore consist of an appropriate immunity from interference (noise immunity) and a limited emission of interference (noise emission).

Elma's EMC concept describes three levels of electromagnetic shielding performance (Performance Level). The attenuation levels will simplify the selection of sub racks for the user. Test setup: The first measurement E1 is without the enclosure. The next measurement E2 is made with the transmitting antenna installed inside the enclosure. The difference between the received signal without and with the enclosure represents the shielding effectiveness in dB.

Performance Level	30 - 230 MHz	230 - 1000 MHz	1000 - 2000 MHz
1 / Elma: Basic level	20 dB	10 dB	0 dB
2 / Elma: Advanced level	40 dB	30 dB	20 dB
3 / Elma: Superior level	60 dB	50 dB	40 dB

The standard configuration will provide you with a basic EMC level. If you require an advanced EMC level for your system, you need to order **additional EMC parts**. Throughout the catalogue we have put these EMC parts **in a yellow table**.

RoHS - the Systemkit 12K is 100% RoHS Compliant

"Restriction of the use of certain hazardous substances in electrical and electronic equipment"

Elma Electronic AG is fully aware of its responsibilities towards its customers and the environment and therefore started a corresponding project which is finished in the meantime.

The new sub rack family Systemkit 12K fulfils the directive 2002/95/EG (RoHS)!

After our present knowledge all parts found in this catalogue do not contain materials, whose placing on the market is forbidden in accordance with RoHS. So it is specially mentioned that for the optimisation of the corrosion and wear protection as well as the improvement of the electrical conductivity as basis of an optimal EMC protection of the electronics the metal surfaces are electro-plated. In co-operation with proven specialised experts we have analysed different RoHS conformal procedures which fulfils our high requirements concerning quality, EMC, corrosion protection and optics.

The procedure for the RoHS compliant surface treatment, selected by us, obtained outstanding results with all tests and examinations. It is particularly worth mentioning that with the climatic test in accordance with IEC 61587-1 the highest requirement (Performance level C3 and A3) were successfully fulfilled by our products.

Substantial results of the surface treatment:

- Optically identical surfaces to the past procedures (colourless)
- High EMC protection
- Optimal adhesion for coloured surface coatings
- Fulfils the highest performance level (C3, A3) of climatic tests in accordance to IEC 61587-1 (*)

(*) acc. to IEC 61587-1:

Performance Level: C3 (Cold, dry heat and damp heat, cyclic)

- Example of use: Extreme climatic impact (eg. outdoor, tropical environment) with temperature between -40°C and +85°C, relative humidity of 20% to 95%, no condensation

Performance Level: A3 (Industrial atmosphere)

- Example of use: strong concentration of toxic substances and exposure through maritime climate at the same time (eg. off-shore chemical engineering, oil platform) with concentration of acc. to IEC 60654-4:
 - SO₂ at average: 5 cm³/m³, max. 15 cm³/m³
 - H₂S at average: 10 cm³/m³, max. 50cm³/m³

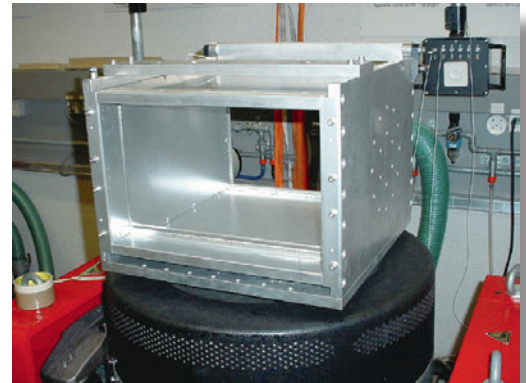
4: Systemkit 12K

Climatic and Mechanical Tests

The Systemkit 12K fulfils the following test according to:

- Vibration EN 60068-2-6
- Shock EN 60068-2-27
- Dry Heat EN 60068-2-2
- Damp heat, cyclic EN 60068-2-30
- Cold EN 60068-2-1
- Salt Spray test DIN 50021

The functionality of the sub rack was ensured during all tests.



Detail information to climatic and mechanical tests:

- **Vibration** EN 60068-2-6

Resonance search:

Frequency: 3 Hz to 100Hz, Sweeprate: 1 Oct/min.
1 Cycle / Axle (X, Y, Z)

Resonance stay: (Z: 50.7 Hz, Y = 89.5Hz, X = 70.9Hz)

10 m/s ²	15 min
30 m/s ²	2 min

- **Shock** EN 60068-2-27

Shockform: Halfsinus	Acceleration: 50 m/s ²	Duration: 11 ms
Number of Shocks: 3 per Axle		Total: 18 Shocks

- **Dry heat** EN 60068-2-2

Temperature: +85 °C	Duration: 16 h
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- **Damp heat, cyclic** EN 60068-2-30

Upper temperature: +55 °C	Duration: 9 h	Damp: 95 % r.H.
Lower temperature: +25 °C	Duration: 9 h	Damp: 95 % r.H.
Ramp: In 3h from +25 °C to +55 °C and in 3 h back again.		
Number of cycles: 2	Time: 24 h	Total time: 48 h

- **Cold** EN 60068-2-1

Temperature: -40 °C	Duration: 16 h
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- **Salt Spray test** DIN 50021

Salt concentration: 50 g/l	Duration: 16 h	Temperature: +35 °C
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Configuration



4.2 Step A: Application

- Basic Set CPCI, VME, VME64X
- Internal Extrusion

4.3 Step B: Application Range

- Height Extrusion 19"



4.4 Step C: Assembly Options

- Reduction Kit $\frac{1}{2} + \frac{1}{2}$
- Reduction Kit $\frac{1}{3} + \frac{2}{3}$
- Front or Recessed Mounting
- Bottom/Top Panel Solid and Perforated



4.5 Step D: Assembly Accessories

- Rear I/O Card Mounting
- Front Sub Divisions
- Horizontal Mounting Kits
- Drive Modules

4.6 Step E: EMC Shielding

4.7 Step F: General Accessories

4.8 Step G: Extrusions

4: Systemkit 12K

4.1.1 Basic Set-up Overview

CPCI (IEEE1101.10/IEEE1101.11) Standard Configurations**

Height	3 U		4 U			289 mm
	289 mm	400 mm	289 mm	400 mm	500 mm	
Depth	19"	19"	19"	19"	19"	19"
Width	19"	19"	19"	19"	19"	19"
Part-No.	12K001	12K041	12K002	12K003	12K004	12K008
For card size	3 U	3 U	3 U	3 U	3 U	3 U / 6 U
For card depth	160 mm	160 mm 220 mm	160 mm	160 mm 220 mm	160 mm 220 mm	160 mm
Rear I/O card depth*	80 mm	-	80 mm	80 mm	80 mm	80 mm
Max. Slot	21	21	21	21	21	21
Front mounting	possible	possible	possible	possible	possible	possible
Recessed mounting	-	-	possible	possible	possible	possible (3 U)
Height reduction	-	-	possible	possible	possible	possible (3 U)
Base material	aluminium	aluminium	aluminium	aluminium	aluminium	aluminium
Surface treatment	conductive	conductive	conductive	conductive	conductive	conductive
Possible EMC level	advanced	advanced	advanced	advanced	advanced	advanced

VME (IEEE1101.10/IEEE1101.11) Standard Configurations**

Height	3 U		4 U				291 mm
	291 mm	400 mm	291 mm	371 mm	400 mm	500 mm	
Depth	19"	19"	19"	19"	19"	19"	19"
Width	19"	19"	19"	19"	19"	19"	19"
Part-No.	12K023	12K024	12K025	12K026	12K027	12K028	12K029
For card size	3 U	3 U	3 U	3 U	3 U	3 U	3 U / 6 U
For card depth	160 mm	160 mm 220 mm	160 mm 220 mm	160 mm 220 mm	160 mm 220 mm	160 mm 220 mm	160 mm 220 mm
Rear I/O card depth*	-	-	-	160 mm	160 mm	160 mm	-
Max. Slot	21	21	21	21	21	21	21
Front mounting	possible	possible	possible	possible	possible	possible	possible
Recessed mounting	-	-	possible	-	possible	possible	possible (3 U)
Height reduction	-	-	possible	possible	possible	possible	possible (3 U)
Base material	aluminium	aluminium	aluminium	aluminium	aluminium	aluminium	aluminium
Surface treatment	conductive	conductive	conductive	conductive	conductive	conductive	conductive
Possible EMC level	advanced	advanced	advanced	advanced	advanced	advanced	advanced

VME (IEC 60297) Standard Configurations**

Height	3 U			4 U				291 mm
	291 mm	400 mm	500 mm	291 mm	371 mm	400 mm	500 mm	
Depth	19"	19"	19"	19"	19"	19"	19"	19"
Width	19"	19"	19"	19"	19"	19"	19"	19"
Part-No.	12K019	12K020	12K044	12K038	12K005	12K006	12K007	12K039
For card size	3 U	3 U	3 U	3 U	3 U	3 U	3 U	3 U / 6 U
For card depth	160 mm	160 mm 220 mm	160 mm 220 mm	160 mm 220 mm	160 mm 220 mm	160 mm 220 mm	160 mm 220 mm	160 mm 220 mm
Rear I/O card depth*	-	-	-	-	160 mm	160 mm	160 mm	-
Max. Slot	21	21	21	21	21	21	21	21
Front mounting	possible	possible	possible	possible	possible	possible	possible	possible
Recessed mounting	-	-	-	possible	-	possible	possible	possible (3 U)
Height reduction	-	-	-	possible	possible	possible	possible	possible (3 U)
Base material	aluminium	aluminium	aluminium	aluminium	aluminium	aluminium	aluminium	aluminium
Surface treatment	conductive	conductive	conductive	conductive	conductive	conductive	conductive	conductive
Possible EMC level	advanced	advanced	advanced	advanced	advanced	advanced	advanced	advanced

*Rear I/O possible, when front cards 160 mm, only. No recessed mounting possible in combination with rear I/O

4: Systemkit 12K

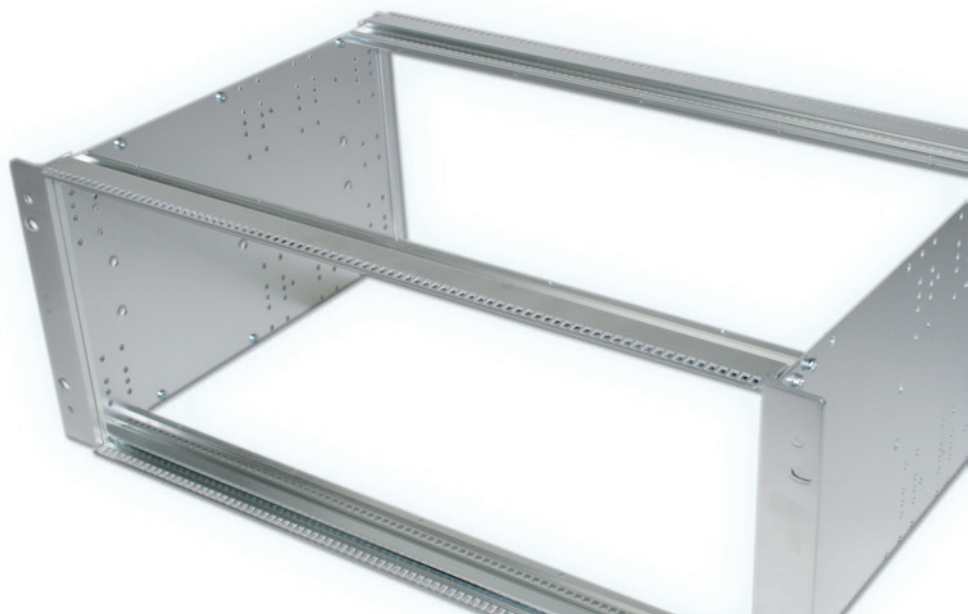
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6 U		7 U			9 U	
400 mm	500 mm	289 mm	400 mm	500 mm	400 mm	500 mm
19"	19"	19"	19"	19"	19"	19"
12K042	12K043	12K011	12K012	12K013	12K021	12K022
3 U / 6 U	3 U / 6 U	3 U / 6 U	3 U / 6 U	3 U / 6 U	3 U / 6 U	3 U / 6 U
160 mm	160 mm	160 mm	160 mm	160 mm	160 mm	160 mm
220 mm	220 mm	220 mm	220 mm	220 mm	220 mm	220 mm
-	-	80 mm	80 mm	80 mm	80 mm	80 mm
21	21	21	21	21	21	21
possible	possible	possible	possible	possible	possible	possible
possible (3 U)	possible (3 U)	possible	possible	possible	possible	possible
possible (3 U)	possible (3 U)	possible	possible	possible	possible	possible
aluminium	aluminium	aluminium	aluminium	aluminium	aluminium	aluminium
conductive	conductive	conductive	conductive	conductive	conductive	conductive
advanced	advanced	advanced	advanced	advanced	advanced	advanced

6 U		7 U				9 U	
400 mm	500 mm	291 mm	371 mm	400 mm	500 mm	400 mm	500 mm
19"	19"	19"	19"	19"	19"	19"	19"
12K030	12K031	12K032	12K033	12K034	12K035	12K036	12K037
3 U / 6 U	3 U / 6 U	3 U / 6 U	3 U / 6 U	3 U / 6 U	3 U / 6 U	3 U / 6 U	3 U / 6 U
160 mm	160 mm	160 mm	160 mm	160 mm	160 mm	160 mm	160 mm
220 mm	220 mm	220 mm	220 mm	220 mm	220 mm	220 mm	220 mm
-	-	-	160 mm	160 mm	160 mm	160 mm	160 mm
21	21	21	21	21	21	21	21
possible	possible	possible	possible	possible	possible	possible	possible
possible (3 U)	possible (3 U)	possible	-	possible	possible	possible	possible
possible (3 U)	possible (3 U)	possible	possible	possible	possible	possible	possible
aluminium	aluminium	aluminium	aluminium	aluminium	aluminium	aluminium	aluminium
conductive	conductive	conductive	conductive	conductive	conductive	conductive	conductive
advanced	advanced	advanced	advanced	advanced	advanced	advanced	advanced

6 U		7 U				9 U	
400 mm	500 mm	291 mm	371 mm	400 mm	500 mm	400 mm	500 mm
19"	19"	19"	19"	19"	19"	19"	19"
12K009	12K010	12K040	12K014	12K015	12K016	12K017	12K018
3 U / 6 U	3 U / 6 U	3 U / 6 U	3 U / 6 U	3 U / 6 U	3 U / 6 U	3 U / 6 U	3 U / 6 U
160 mm	160 mm	160 mm	160 mm	160 mm	160 mm	160 mm	160 mm
220 mm	220 mm	220 mm	220 mm	220 mm	220 mm	220 mm	220 mm
-	-	-	160 mm	160 mm	160 mm	160 mm	160 mm
21	21	21	21	21	21	21	21
possible	possible	possible	possible	possible	possible	possible	possible
possible (3 U)	possible (3 U)	possible	-	possible	possible	possible	possible
possible (3 U)	possible (3 U)	possible	possible	possible	possible	possible	possible
aluminium	aluminium	aluminium	aluminium	aluminium	aluminium	aluminium	aluminium
conductive	conductive	conductive	conductive	conductive	conductive	conductive	conductive
advanced	advanced	advanced	advanced	advanced	advanced	advanced	advanced

**Other configurations on request as modified standard, please contact our sales support



4.2 Step A: Applications

4.2.1 CPCI, VME, VME64x 19" Basic Set

- **Scope of delivery:**
 - 2 side panels
 - 4 front extrusions
 - 4 tapped strips M2.5
 - 1 set assembly material (16 cylinder head screws M4 x 10, Torx T20)



4.2.1.1 CPCI Applications (IEEE1101.10/IEEE1101.11)

	3 U	4 U	6 U	7 U	9 U
Depth	132.5 mm	177.0 mm	265.9 mm	310.3 mm	399.2 mm
289 mm	12K001	12K002	12K008	12K011	-
400 mm	12K041	12K003	12K042	-	12K021
500 mm	-	12K004	-	-	-

4.2.1.2 VME64x Applications (IEEE1101.10/IEEE1101.11)

	3 U	4 U	6 U	7 U	9 U
Depth	132.5 mm	177.0 mm	265.9 mm	310.3 mm	399.2 mm
291 mm	12K023	12K025	12K029	12K032	-
400 mm	12K024	12K027	12K030	12K034	12K036
500 mm	-	-	12K031	12K035	12K037

4.2.1.3 VME Applications (IEC60297)

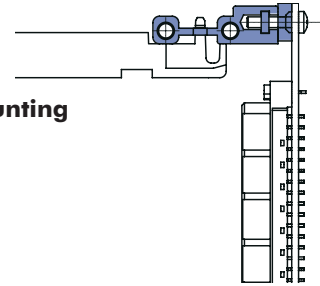
	3 U	4 U	6 U	7 U	9 U
Depth	132.5 mm	177.0 mm	265.9 mm	310.3 mm	399.2 mm
291 mm	12K019	12K038	12K039	12K040	-
371 mm	-	12K005	-	-	-
400 mm	12K020	12K006	12K009	12K015	12K017
500 mm	12K044	12K007	12K010	12K016	12K018

4.2.2 Internal Extrusion

A

4.2.2.1 Internal Extrusion for Insulated Backplane Mounting

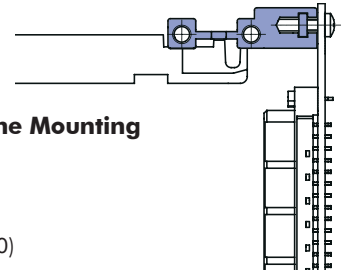
- **Scope of delivery:**
 - 2 internal extrusions
 - 2 tapped strips M2.5
 - 2 insulating strips
 - Assembly material (8 cylinder head screws M4 x 10, Torx T20)



Description	Part-No.
Insulated mounting of backplane	12K506

4.2.2.2 Internal Extrusions for Non-Insulated Backplane Mounting

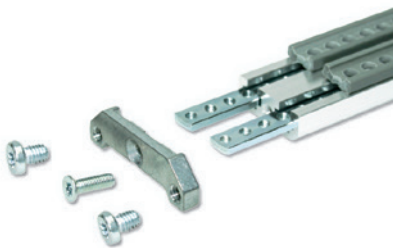
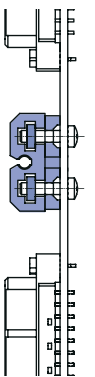
- **Scope of delivery:**
 - 2 internal extrusions
 - 2 tapped strips M2.5
 - Assembly material (8 cylinder head screws M4 x 10, Torx T20)



Description	Part-No.
Non-insulated mounting of backplane	12K507

4.2.2.3 Double Extrusion for Insulated Backplane Mounting

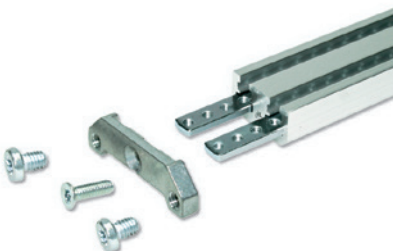
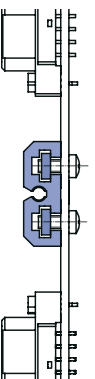
- For 6 U cards only
- Stiffener for VME Monolithic
- Fixing for J1 and J2 Backplanes
- **Scope of delivery:**
 - 1 double extrusion
 - 2 tapped strips
 - 2 insulating strips
 - Assembly material (8 x M4 x 6, Torx T20, 2 x M3 x 10, Torx T20, 2 x adapter)



Description	Part-No.
1 set double extrusion for insulated backplane mounting	12K508

4.2.2.4 Double Extrusion for Non-Insulated Backplane Mounting

- For 6 U cards only
- Stiffener for VME Monolithic
- Fixing for J1 and J2 Backplanes
- **Scope of delivery:**
 - 1 double extrusion
 - 2 tapped strips M2.5
 - Assembly material (8 x M4 x 6, Torx T20, 2 x M3 x 10, Torx T20, 2 x adapter)



Description	Part-No.
1 set double extrusion for non-insulated backplane mounting	12K509



4.3 Step B: Applications Range

4.3.1 Height Extrusions for 19" Version

- Not suitable for telescopic rail mounting (see 4.3.2)
- **Scope of delivery:**
 - 2 height extrusions 19" (front)
 - 2 height extrusions (rear)
- Handles, see below
- EMC-gaskets see 4.6.4

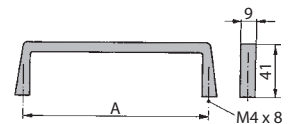
4.3.1. Height Extrusions for 19" Version

Height:	3 U	4 U	6 U	7 U	9 U
Part-No.:	12K200	12K201	12K202	12K203	12K204



4.2.1.1 Aluminium Handle 9 mm (Anodised)

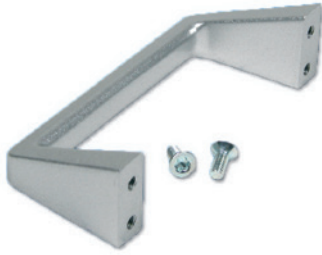
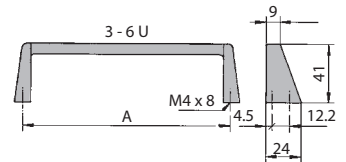
- **Scope of delivery:**
 - 1 handle for height extrusion
 - 2 countersunk screws M4 x 10, Torx T20
- Per sub rack 2 handles have to be ordered



Case size:	3 U	4 U	6 U	7 U	9 U
Handle size (A):	3 U (88.9 mm)	4 U (133.4 mm)	6 U (222.3 mm)	4 U (133.4 mm)	6 U (222.3 mm)
Part-No.:	60-573	60-574	60-576	60-574	60-576

4.3.1.2 Die Cast Aluminium Handle (Wet painted RAL 9006)

- **Scope of delivery:**
 - 1 handle for height extrusion
 - 2 countersunk screws M4 x 10, Torx T20
- Per sub rack 2 handles have to be ordered



Case size:	3 U	4 U	6 U	7 U	9 U
Handle size (A):	3 U (88.9 mm)	4 U (133.4 mm)	6 U (222.3 mm)	4 U (133.4 mm)	6 U (222.3 mm)
Part-No.:	60-563	60-564	60-566	60-564	60-566

4.3.2 Height Extrusions for 19" Version (for Telescopic Rails)

- Suitable for telescopic rail mounting
- **Scope of delivery:**
 - 2 height extrusions (19" front)
 - 2 height extrusions (rear)
 - 2 die cast aluminium handles
 - Assembly material (4 countersunk screws M4 x 10, Torx T20)
- Telescopic rails, see below
- EMC-gaskets see 4.6.4



4.3.2 Height Extrusions for 19" Version (for Telescopic Rails)

Height:	3 U	6 U
Part-No.:	12K400	12K402

Other heights available on request



4.3.2.1 Telescopic Rails, Set (Load Capacity up to 60 kg/Pair)

- Telescopic rails, suitable for all heights
- **Scope of delivery:**
 - 2 telescopic rails
 - Mounting bracket and assembly material for mounting into cabinet and on module

Max. withdraw	Usable depth		Part-No.
	min.	max.	
511.2 mm	463 mm	681.8 mm	65-051
596.4 mm	564.6 mm	783.4 mm	65-052
719.6 mm	666.2 mm	885.0 mm	65-053

Rugged telescopic rails, load capacity up to 90 kg/pair available on request



4.4 Step C: Assembly Options

4.4.1 Reduction Kit 1/3 U + 2/3 U for Front Mounting, Solid

- Material: Aluminium 1.5 mm, conductive, depth independent (to be used in conjunction with the bottom/top panel)
- For 160 mm card depth, for 4 U case (eurocard) / for 7 U case (double eurocard)
- **Scope of delivery:**
 - 1 adapter top (1/3 U), 1 adapter bottom (2/3 U) incl. fan panel
 - 1 set assembly material (6x M3 x 8, Torx T10/ 4x M4 x 10, Torx T20)



4.4.1 Reduction Kit 1/3 U + 2/3 U for Front Mounting, Solid

Description	Part-No.
Reduction kit solid incl. fan panel	12K732

4.4.1.1 Additional fan plate

- For easy access and maintenance of the fans
- **Scope of delivery:**
 - 1 fan plate
 - 8 milled edge screws M3 x 5, Torx T10

Description	Part-No.
Additional fan plate incl. 1 set assembly material	12K737

4.4.2 Reduction Kit 1/3 U + 2/3 U for 60 mm Recessed Mounting

- Material: Aluminium 1.5 mm, conductive, depth independent (to be used in conjunction with the bottom/top panel)
- For 60 mm recessed only, for 160 mm card depth, for 4 U case (eurocard) / for 7 U case (double eurocard)
- **Scope of delivery:**
 - 1 adapter top (1/3 U), 1 adapter bottom (2/3 U) incl. fan panel
 - 1 set assembly material (6x M3 x 8 Torx T10, 4x M4 x 10 Torx T20)



4.4.2 Reduction Kit 1/3 U + 2/3 U for 60 mm Recessed Mounting

Part-No. perforated*	Part-No. solid
12K500	12K501

* only bottom part (2/3 U) is perforated

4.4.2.1 Additional fan plate

- For easy access and maintenance of the fans
- **Scope of delivery:**
 - 1 fan plate
 - 8 milled edge screws M3 x 5, Torx T10

Description	Part-No.
Additional fan plate incl. 1 set assembly material	12K737

4.4.3 Reduction Kit 1/2 U + 1/2 U for Front Mounting

- Material: Aluminium 1.5 mm, conductive, depth independent (to be used in conjunction with the bottom/top panel)
- For 4 U case (eurocard) / for 7 U case (double eurocard)
- **Scope of delivery:**
 - 1 adapter (1/2 U)
 - No assembly material needed
- Per sub rack 2 pcs. (4 pcs. with Rear I/O) have to be used (ordered)



4.4.3 Reduction Kit 1/2 U + 1/2 U for Front Mounting

Part-No. solid
12K710

Perforated version available on request

4.4.4 Reduction Kit 1/2 U + 1/2 U for 60 mm Recessed Mounting

- Material: Aluminium 1.5 mm, conductive, depth independent (to be used in conjunction with the bottom/top panel)
- For 4 U case (eurocard) / for 7 U case (double eurocard)
- **Scope of delivery:**
 - 1 adapter (1/2 U)
 - 1 set assembly material (2 cylinder head screws M4 x 10, Torx T20)
- Per sub rack 2 pcs. have to be used (ordered)
- ! the depth independent 1/2 U adapter are to be used in conjunction with the bottom/top panel



4.4.4 Reduction Kit 1/2 U + 1/2 U for 60 mm Recessed Mounting

Part-No. solid
12K730

Perforated version available on request

4: Systemkit 12K

4.4.5 Bottom / Top Panel Solid

- Material: Aluminium 1.5 mm, conductive
- EMC-level: basic (for an advanced EMC-level use EMC-sets, see 4.6)
- **Scope of delivery:**
 - 1 bottom/top panel solid
 - 1 set assembly material (18 cylinder head screws M3 x 6 Torx T10)

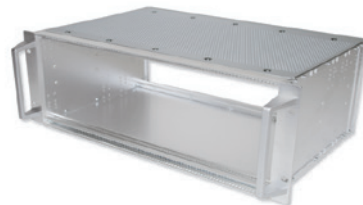


4.4.5 Bottom / Top Panel Solid

Depth	Part-No.
289 mm	12K746
291 mm	12K720
371 mm	12K722
400 mm	12K723
500 mm	12K724

4.4.6 Bottom / Top Panel Perforated

- Material: Aluminium 1.5 mm, conductive
- EMC-level: basic (for an advanced EMC-level use EMC-sets, see 4.6)
- **Scope of delivery:**
 - 1 bottom/top panel perforated
 - 1 set assembly material (18 cylinder head screws M3 x 6 Torx T10)



4.4.6 Bottom / Top Panel Perforated

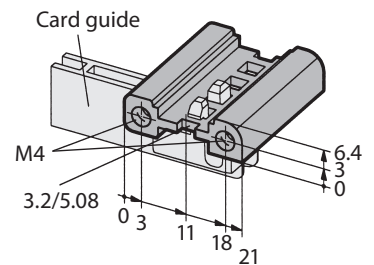
Depth	Part-No.
289 mm	12K749
291 mm	12K725
400 mm	12K728
500 mm	12K729



4.5 Step D: Assembly Accessories

4.5.1 Rear I/O Card Mounting

- For 80 mm card depth (CPCI), for 160 mm card depth (VME & VME64x)
- **Scope of delivery:**
 - 2 internal extrusions for rear I/O card mounting
 - Assembly material (4 cylinder head screws M4 x 10 Torx T20)



4.5.1 Rear I/O Card Mounting

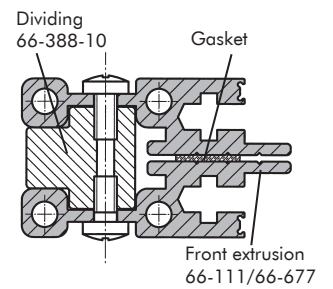


Description	Part-No.
Internal extrusions for rear I/O card mounting	12K504

4.5.2 Front Sub Divisions

4.5.2.1 EMC Front Sub Division Horizontal for 84 HP System

- Advanced EMC-level
- For card guides be applied on upper and lower card cage side



4.5.2.1 EMC Front Sub Division Horizontal for 84 HP System

- **Scope of delivery:**
 - 2 front extrusions
 - 1 EMC-gasket
 - 3 dividings
 - 1 set assembly material (8 cylinder head screws M4 x 10 Torx T20
6 cylinder head screws M3 x 6 Torx T10)
 - 2 tapped strips M2.5



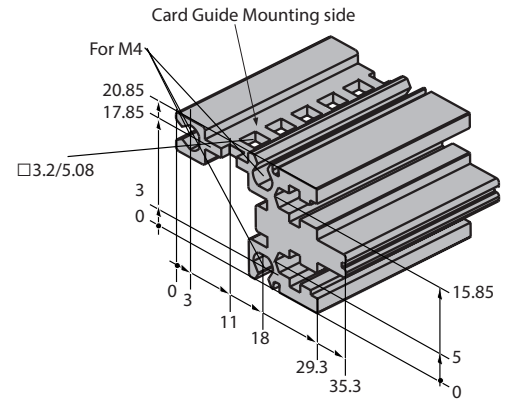
Part-No. VME	Part-No. CPCI/VME64x
63K837-84	63K837-85

4: Systemkit 12K

A

4.5.2.2 EMC Front Sub Division Horizontal IEC for Card Guides

- For sub division of front or rear
- Card guides can be applied
- Superior EMC-level
- Only one special extrusion needed
- Easy and quick assembly
- Cost effective solution
- Delivered in kit form
- Usable width: 84 HP
- Other sizes available on request
- **Scope of delivery:**
 - 1 front double extrusion IEC-Special clear passivated
 - 2 tapped strips M2.5
 - 4 Torx cylinder head screws M4 x 10 (T20)
- For HF spring see 4.5.2.4.1
- For EMC contact strips see 4.5.2.4.2



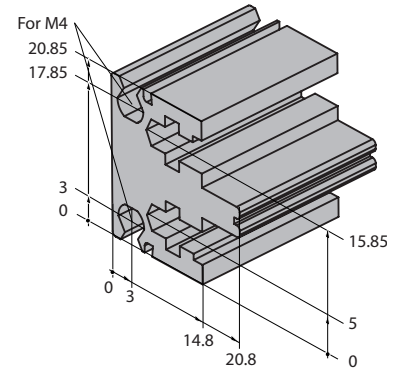
4.5.2.2 EMC Front Sub Division Horizontal IEC

Description	Part-No.
EMC front sub division horizontal IEC for card guides	63K837-24



4.5.2.3 EMC Front Sub Division Horizontal IEC

- For sub division of front or rear
- Without possibility of using card guides
- Superior EMC-level
- Only one special extrusion needed
- Easy and quick assembly
- Cost effective solution
- Delivered in kit form
- Usable width: 84 HP
- Other sizes available on request
- **Scope of delivery:**
 - 1 front double extrusion IEC-Special clear passivated
 - 2 tapped strips M2.5
 - 4 Torx cylinder head screws M4 x 10 (T20)
- For HF spring see 4.5.2.4.1
- For EMC contact strips see 4.5.2.4.2



4.5.2.3. EMC Front Sub Division Horizontal IEC

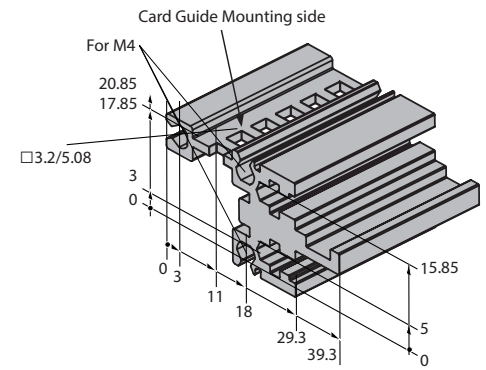
Description	Part-No.
EMC front sub division horizontal IEC	63K837-22



4: Systemkit 12K

4.5.2.4 EMC Front Sub Division Horizontal IEEE for card guides

- Superior EMC-level
- Only one special extrusion needed
- Card guides can be applied
- Easy and quick assembly
- Cost effective solution
- Usable width: 84 HP
- Other sizes available on request
- **Scope of delivery:**
 - 1 front double extrusion IEEE-Special clear passivated
 - 2 tapped strips M2.5
 - 4 Torx cylinder head screws M4 x 10 (T20)
- For HF spring see below
- For EMC contact strips see below



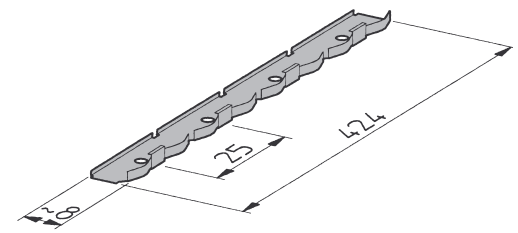
4.5.2.4 EMC Front Sub Division Horizontal IEEE

Description	Part-No.
EMC front sub division horizontal IEEE	63K837-23



4.5.2.4.1 HF Spring

- Stainless steel
- Snapped-in on the extrusion
- **Scope of delivery:**
 - 2 HF spring 84 HP

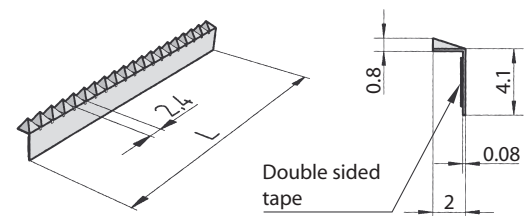


Description	Part-No.
1 set of 2 HF spring 84 HP	7739-14-4



4.5.2.4.2 EMC Contact Strips

- BeCu galvanized
- For front panels, fixing on extrusion
- Self-adhesive
- **Scope of delivery:**
 - 2 EMC contact strips

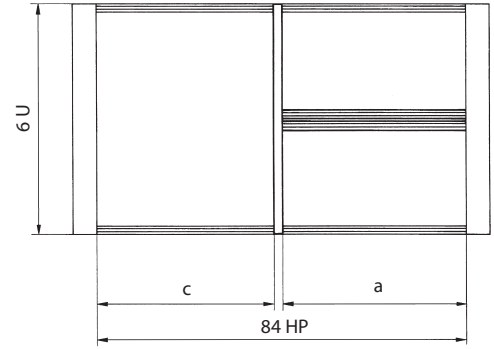


For HP	Length		Part-No.
	mm	inch	
84	424.2	16.70	63-836-70

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4.5.2.5 Front Sub Division Vertical for 6 U System or 6 U Assembly

- **Scope of delivery:**
 - 1 divider extrusion front
 - 1 divider extrusion rear
 - 2 front extrusion
 - 2 internal extrusion
 - Assembly material
(16 cylinderhead screws M4 x 10, Torx T20
(4 cylinderhead screws M3 x 12, Torx T10)
- Tapped strips for front extrusion see below



4.5.2.5 Front Sub Division Vertical for 6 U System or 6 U Assembly

Nominal width 6 U (c)	Nominal width 2 x 3 U (a)	Part-No. IEC60297	Part-No. IEEE1101.10
50 HP	32 HP	-	12K959-3
40 HP	42 HP	12K949-2	-



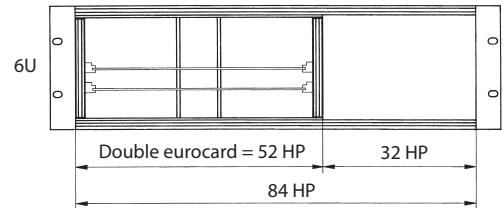
Tapped Strips for Front Extrusion

Scope of delivery	Description	Part-No.
1 pc. tapped strip	M2,5 32 HP = 162.56 mm	61-463
1 pc. tapped strip	M2,5 42 HP = 213.36 mm	61-464

4.5.3 Horizontal Card Mounting Kits

4.5.3.1 Horizontal Card Mounting Kit for Double Eurocards (6 U) (for VME)

- Card depth independent
- Installation width: 52 HP
- **Scope of delivery:**
 - 1 complete set incl. assembly material
- Assembly material for cover plates see below



4.4.7 Horizontal Card Mounting Kit for Double Eurocards (6 U) (for VME)

Height/nominal width	Part-No.	Part-No. for cover plate top	Part-No. for cover plate bottom
3 U - 20 HP	14K971-60	21N602-90	21N602-90
4 U - 28 HP	14K981-60	21N602-90	21N603-90
6 U - 48 HP	14K991-60	21N606-90	21N607-90



Front Panel Screws

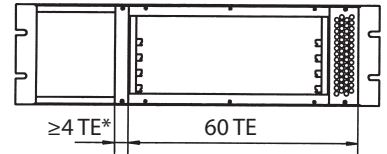
- Set of 10 screws, with screw retainer

Description	Part-No.
Torx screws M2.5 x 11.3, size T8 with plastic screw retainer	63K159
Rounded head screws recessed M2.5 x 11.3 with plastic screw retainer	63-159

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4.5.3.2 EMC Horizontal Card Mounting Kit for Double Eurocards (6 U)

- For 160 mm card depth
- For backplane mounting
- **Scope of delivery:**
 - Card mounting kit incl. fan tray and connector
 - Assembly material included
- ! Fan module has to be on the right side of the horizontal card mounting kit
- Fan not included in the scope of delivery



*This space is necessary for the air flow. Assemble blind panel or monitoring module



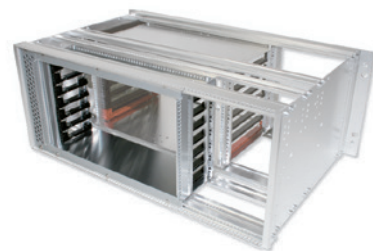
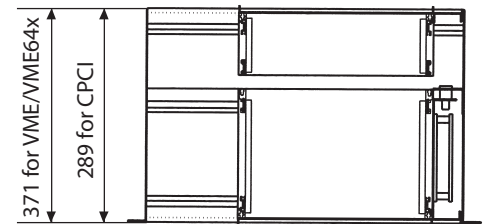
4.5.3.2 EMC Horizontal Card Mounting Kit for Double Eurocards (6 U)

U	Nominal height	Part-No. CPCI	Part-No. VME64x
4	28 HP	14K987-60	14K988-60

4.5.3.3 EMC Horizontal Card Mounting for 80 / 160 mm Rear I/O Double Eurocards (6 U)

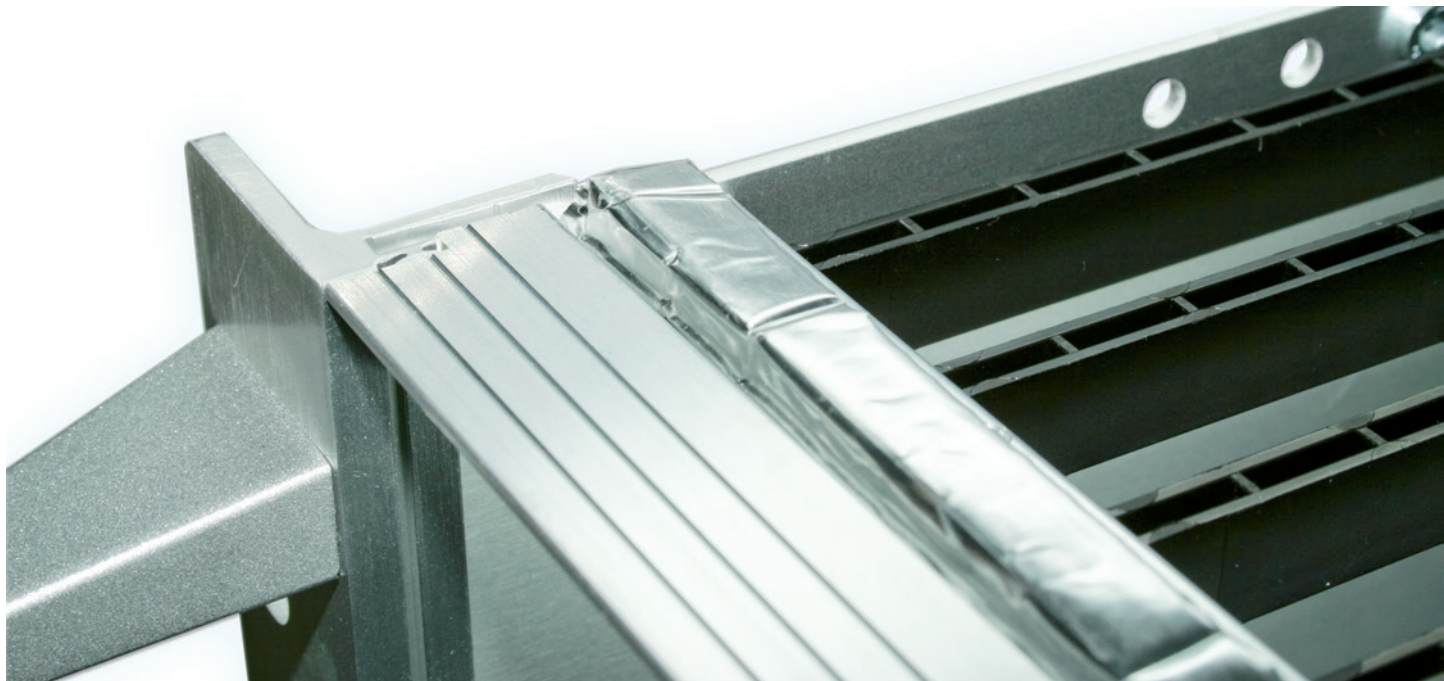
- For 160 mm card depth (VME + VME64x)
- For 80 mm card depth (CPCI)
- For backplane mounting
- **Scope of delivery:**
 - 1 complete set incl. assembly material and cover on side

Top view



4.5.3.3 EMC Horizontal Card Mounting for 80 / 160 mm Rear I/O Double Eurocards (6 U)

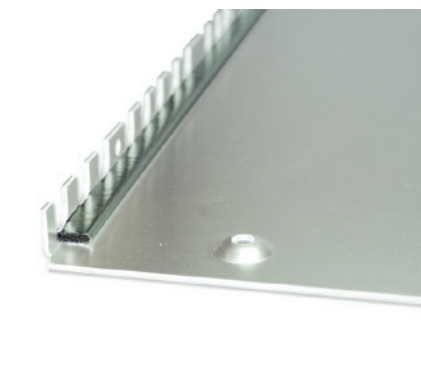
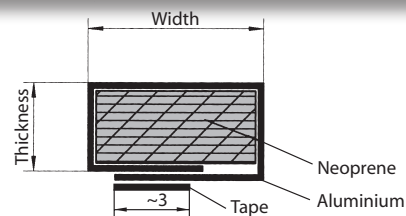
U	Nominal height	Part-No. CPCI	Part-No. VME64x
4	28 HP	14K988-10	14K990-10



4.6 Step E: EMC Shielding

4.6.1 EMC-Set for Bottom/Top Panel, Depth (Advanced EMC-level)

- Use in conjunction with 4.6.2
- **Scope of delivery:**
 - 4 EMC-gasket for depth



4.6.1 EMC-Set for Bottom/Top Panel, Depth (Advanced EMC-level)

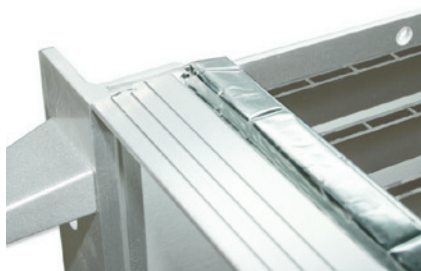
Depth	Part-No.
289 / 291 mm	63K836-15
371 mm	63K836-16
400 mm	63K836-04
500 mm	63K836-05

4.6.2 EMC-Set for Bottom / Top Panel, Width (Advanced EMC-level)

- Use in conjunction with 4.6.1
- **Scope of delivery:**
 - 4 EMC-gasket for width

4.6.2 EMC-Set for Bottom / Top Panel, Width (Advanced EMC-level)

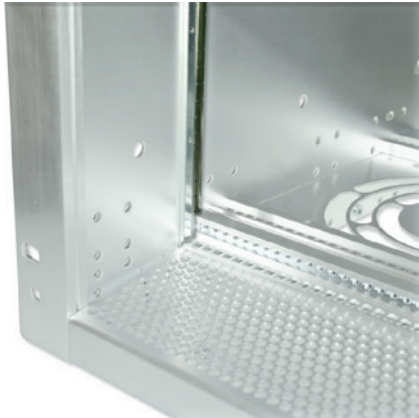
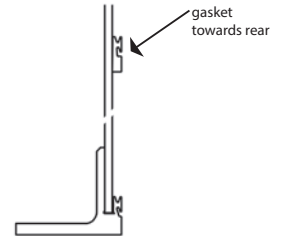
Description	Part-No.
4 gaskets, 4 mm x 7 mm x 84 HP, when using height reduction kits 4.4.1 - 4.4.4 at front and rear	63K836-01
4 gaskets, 6 mm x 7 mm x 84 HP, use without height reduction kits (only extrusions)	63K836-02
2 gaskets, 6 mm x 7 mm x 84 HP and 2 gaskets 4 mm x 7 mm x 84 HP, when using only one height reduction kit 4.4.1 - 4.4.4 at front or rear	63K836-03



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4.6.3 Extrusion for Recessed EMC Mounting (Basic EMC-level)

- Interior fitting: extrusion bolts with side panel
- **Scope of delivery:**
 - 2 EMC-extrusions
 - 8 cylinderhead screws M2.5 x 4, Torx T8
- Application: recessed installation of front panel
- ! Can be used in conjunction with EMC sets 4.6.1 + 4.6.2 and gasket (4.6.4) to achieve advanced EMC level



4.6.3 Extrusion for Recessed EMC Mounting (Basic EMC-level)

System height	Extrusion height	in mm	Part-No.
4 U	~3 U	140 mm	63K608
7 U	~6 U	280 mm	63K609

4.6.4 EMC-Gasket for Height Extrusion, Front Panel (Advanced EMC-level)

- Front / rear recessed mounting
- Front panels; 1. slot
- Application: height extrusion front/rear, front panel
- The gasket is installed onto the extrusion
- Use the EMC-gasket in card height whenever used in addition with cards
- When a height reduction is used, choose height between reductions
- ! Can be used in conjunction with EMC sets (4.6.1 - 4.6.3) to achieve advanced EMC level



4.6.4 EMC-Gasket for Height Extrusion, Font Panel (Advanced EMC-level)

U	in mm	Part.-No.
3	101.60 mm	81-062-03
4	146.05 mm	81-062-04
6	234.95 mm	81-062-06
7	279.40 mm	81-062-07
9	368.30 mm	81-062-09

4.6.5 EMC Contact Strips (Advanced EMC-level)

- For front panels, fixing on extrusion
- Self adhesive
- **Scope of delivery:**
 - 2 contact strips



4.6.5 EMC Contact Strips (Advanced EMC-level)

HP	Length	Part-No.
42	212.1 mm = 8.48"	63-836-67
84	424.2 mm = 16.97"	63-836-70