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KM6- Subrack Systems - Dimensional Criteria

INTRODUCTION

KM6 Subracks are designed around a number of dimensional standards that aim to provide a basic level of interchangeability between different versions and between manufacturers of similar systems.

The basis is the DIN41494 Eurocard standard
The dimensions for the housing of Eurocards are described in IEC60297 section 3 SC48D. Plug-in units are modular in concept and are based on the first card position being 3,27mm from the left hand datum line of the working aperture; subsequent card positions are on multiples of 5,08mm (1HP) from this first card position.

To allow for a uniform working clearance between front panels, when used, the overall width of a front panel is 0,4mm less than the nominal HP x 5,08 dimensions generally quoted.

Heights are nominally quoted in U's (multiples of 44,45mm) but it should be borne in mind that a device quoted as nU high will not be n x 44,45mm in overall height.

KM6- subracks can accommodate connectors to IEC130-4, DIN41617 and VG95324 specifications or motherboards to the IEC60297-3 specification

In addition, reference will be found to the IEEE1101.1, .10 and .11 which expand on the above specifications and for which **KM6-RF** provides suitable product. These describe a number of features particularly relevant to VME64x, CompactPCI® and PXI bus structures.
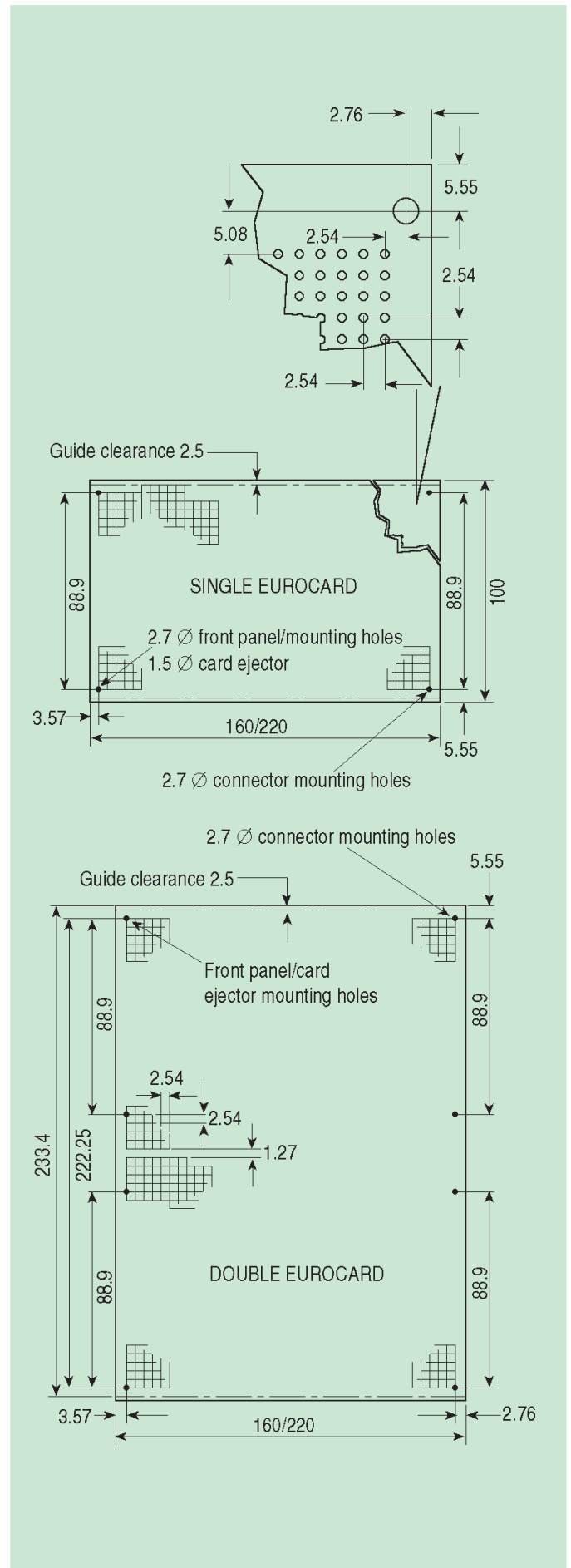
EUROCARDS - CRITICAL DIMENSIONS

As with the rest of the system the printed circuit board sizes are standardised. All PCBs should be of the Eurocard size and conform to the layout shown below.

A 2,50mm wide border is necessary at the top and bottom of printed circuit boards to allow clearance for guides and for mounting into plug-in unit guide rails.

On the double height Eurocard, owing to the overall size and position of the connectors, it is recommended that when fitting components to the front panels the grid as laid out here is adopted. This will allow consistency between 3U and 6U height front panels if mixed configurations are utilised.

¤ NB Certain plastics can be adversely affected by organic solvents. Care should be taken to avoid contamination by some cleaning agents, for instance. With modified PPO's and PPE's such as Luranyl we recommend that when using thread locking compounds they should be cyanoacrylate based, not anaerobic.


Guide clearance 2.5

SINGLE EUROCARD

2.7 ∅ front panel/mounting holes
1.5 ∅ card ejector

2.7 ∅ connector mounting holes

2.7 ∅ connector mounting holes

Guide clearance 2.5

Front panel/card ejector mounting holes

DOUBLE EUROCARD

Subracks section features

USEFUL FRONT PANEL AND CIRCUIT BOARD DIMENSIONS

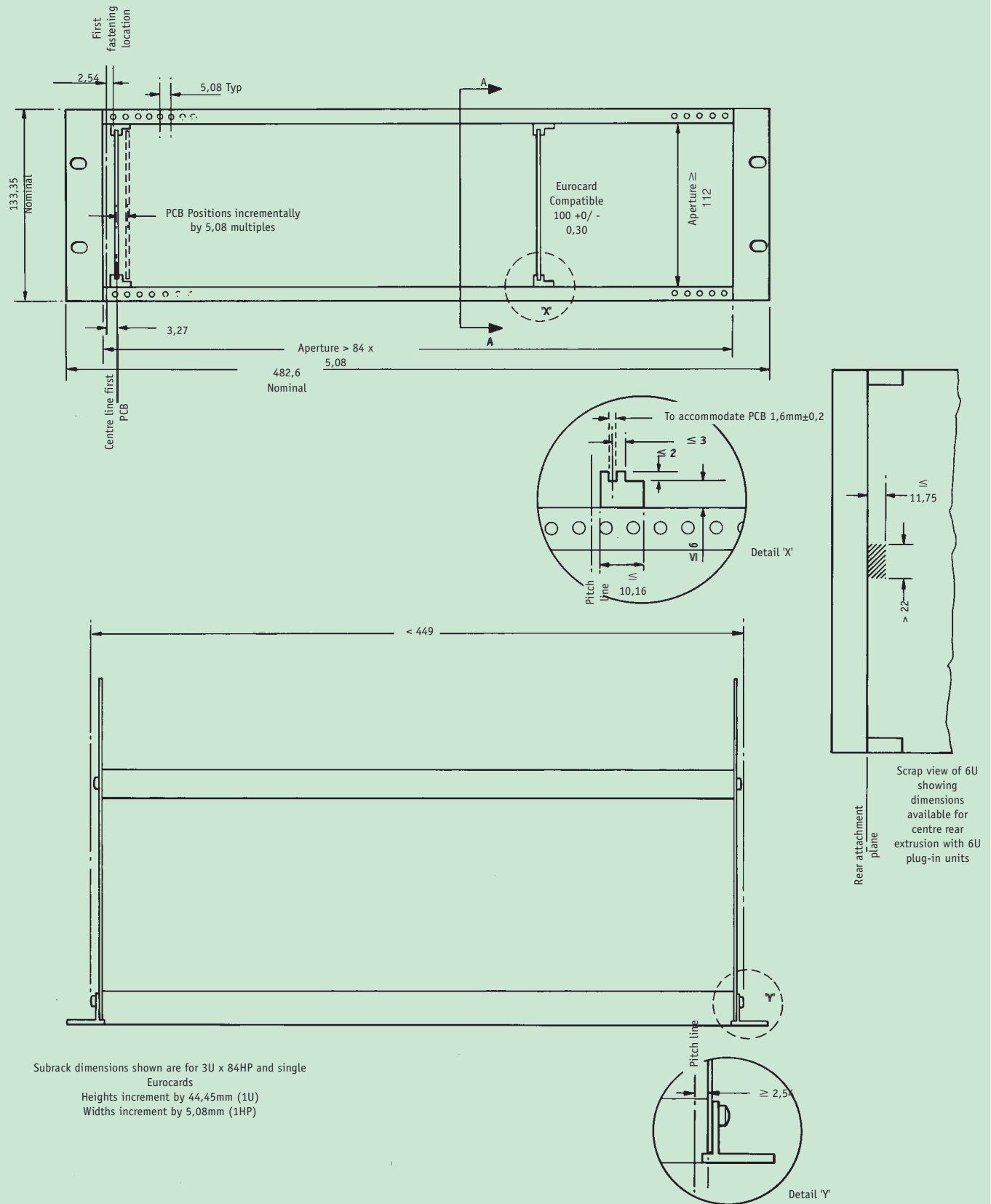These dimensions are useful when a Eurocard is to be attached to a KM6 front panel using card mounting brackets.

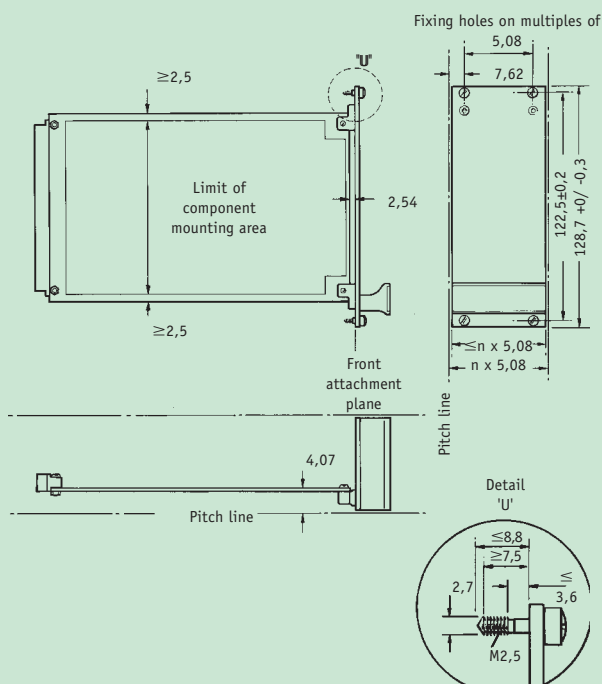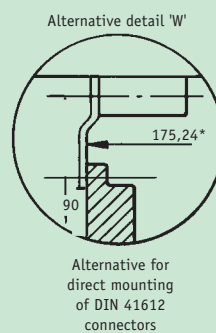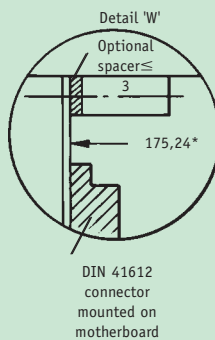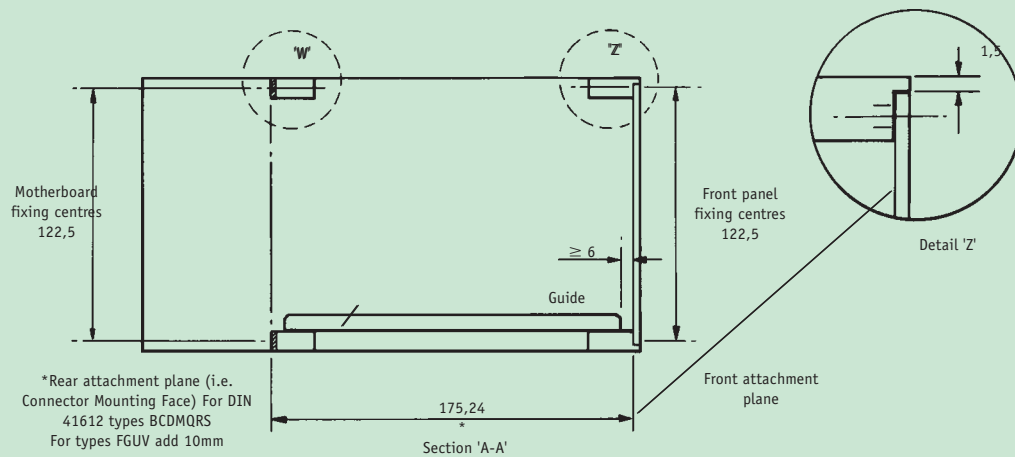| Connector type (DIN 41612)	B	C	D	E	F	G	H
DIM X	7,6	9,4	9,4	14,4	11,3	16,3	11,3
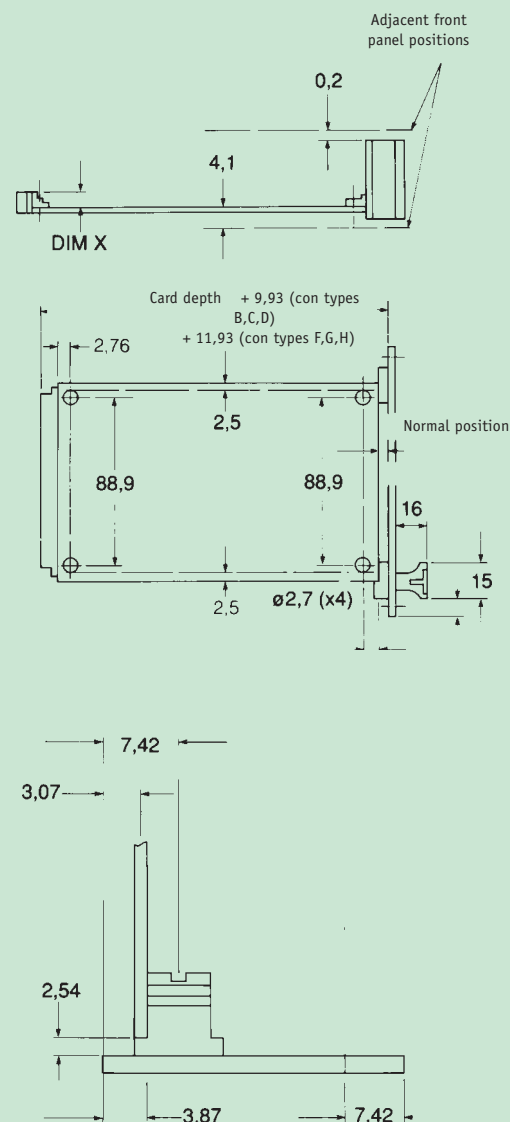
IEC 60297-3 Critical Dimensions

These illustrations show dimensions extracted from IEC 60297-3. they are not comprehensive, but should prove generally informative

First fastening location

2,54

5,08 Typ

A

133,35 Nominal

PCB Positions incrementally by 5,08 multiples

Eurocard Compatible 100 +0/ - 0,30

Aperture ≥ 112

'X'

3,27

A

Centre line first PCB

Aperture > 84 x 5,08

482,6 Nominal

To accommodate PCB 1,6mm±0,2

≤ 3

≤ 2

6

Pitch line

≤ 10,16

Detail 'X'

≤ 11,75

> 22

Scrap view of 6U showing dimensions available for centre rear extrusion with 6U plug-in units

Rear attachment plane

< 449

Subrack dimensions shown are for 3U x 84HP and single Eurocards
Heights increment by 44,45mm (1U)
Widths increment by 5,08mm (1HP)

'Y'

Pitch line

≥ 2,54

Detail 'Y'

IEC 60297-3 Critical Dimensions

Motherboard
fixing centres
122,5

Front panel
fixing centres
122,5

1,5

≥ 6

Guide

Detail 'Z'

*Rear attachment plane (i.e.
Connector Mounting Face) For DIN
41612 types BCDMQRS
For types FGUV add 10mm

Front attachment
plane

175,24
*

Section 'A-A'

Detail 'W'

Optional
spacer≤
3

175,24*

DIN 41612
connector
mounted on
motherboard

Alternative detail 'W'

175,24*

90

Alternative for
direct mounting
of DIN 41612
connectors

Fixing holes incrementing on
multiples of 5,08 as required

'V'

128,7
122,5
90

Type 'B'

Type 'C'

Pitch line

≥2,5

'U'

Limit of
component
mounting area

2,54

≥2,5

Front
attachment
plane

4,07

Pitch line

Fixing holes on multiples of
5,08

7,62

122,5±0,2
128,7 +0/ -0,3

≤n x 5,08
n x 5,08

Pitch line

Detail
'U'

≤8,8
≥7,5

2,7

≤
3,6

M2,5

≤ 84 x 5,08

Motherboard dimensions
showing Type 'B' & 'C' DIN
41612 connector positions
Front view

7,62

2,54

0,3   0,3

a

5,63

2,54

Pitch line

3,55

Detail 'V'

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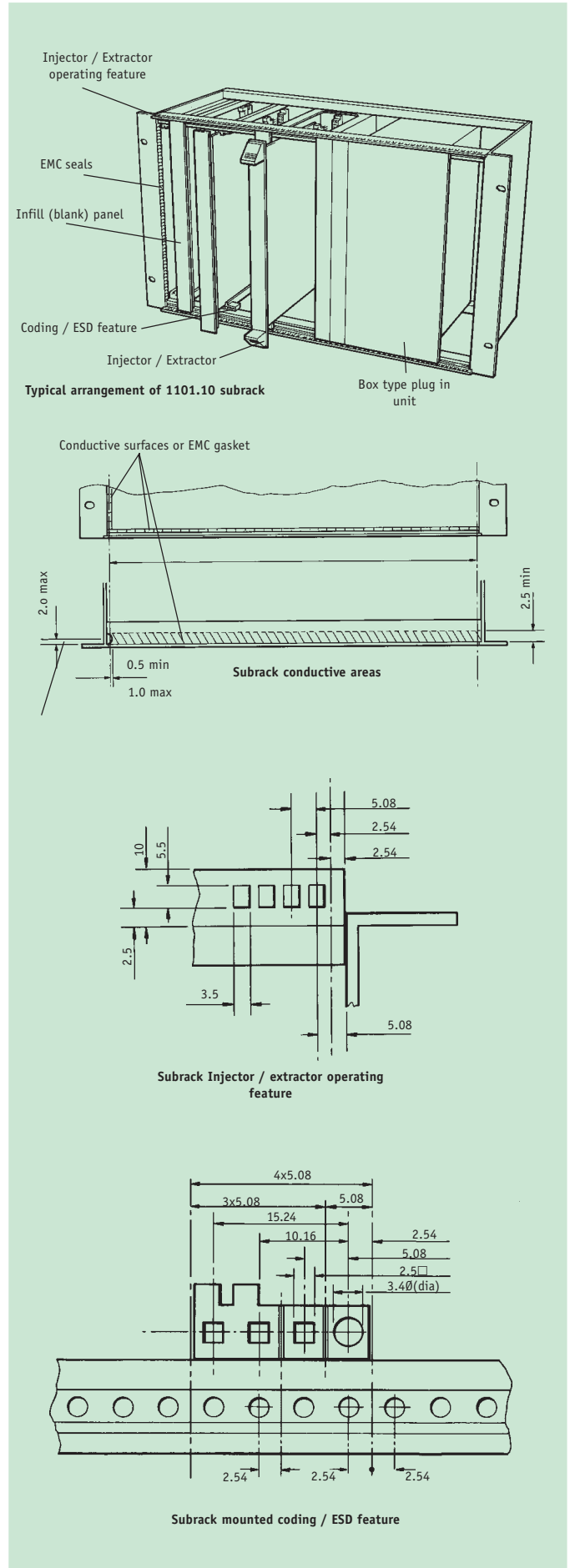# *NEW* IEEE 1101 Critical Dimensions

Introduction

IEEE110.10 was driven by a number of requirements:
The standardisation of EMC front panel geometry to ensure compatibility between various manufacturers' products.

The introduction of the five -row DIN 41 612 connector into VME and the incorporation of Metric standard connectors. Both have very high pin counts and resultant high insertion / withdrawal forces that require a standard injector/ extractor handle geometry.

The standard also addresses the problems of electrostatic protection and a need to code plug-in units to prevent incorrect plug-up, where such actions could have catastrophic results (in particular in live insertion situations).
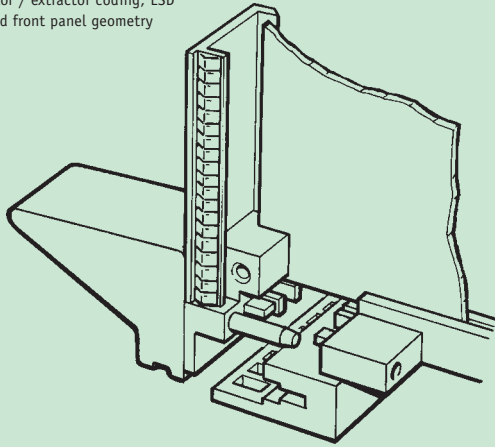
IEEE1101.11 standardises the geometry of rear plug-up (transition) modules where no previous standard existed.

IEEE1101.1 is largely a reiteration of the basic IEC60297-3 standard, with some changes to reflect .10 and .11
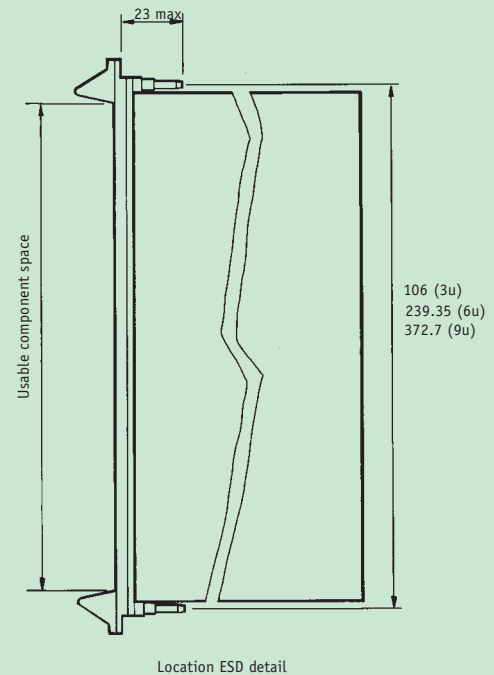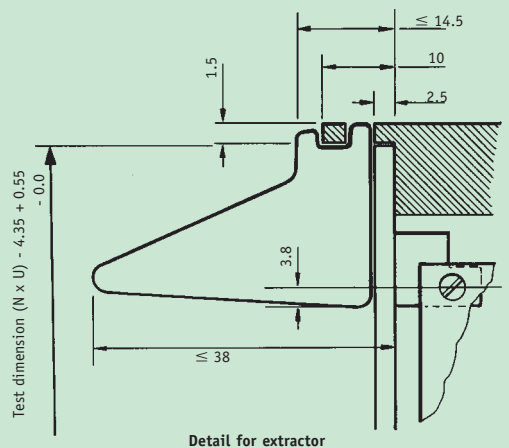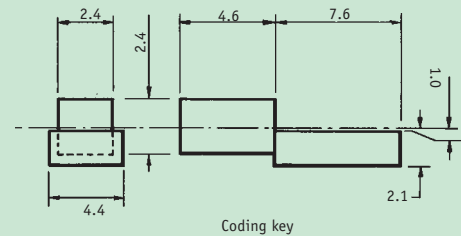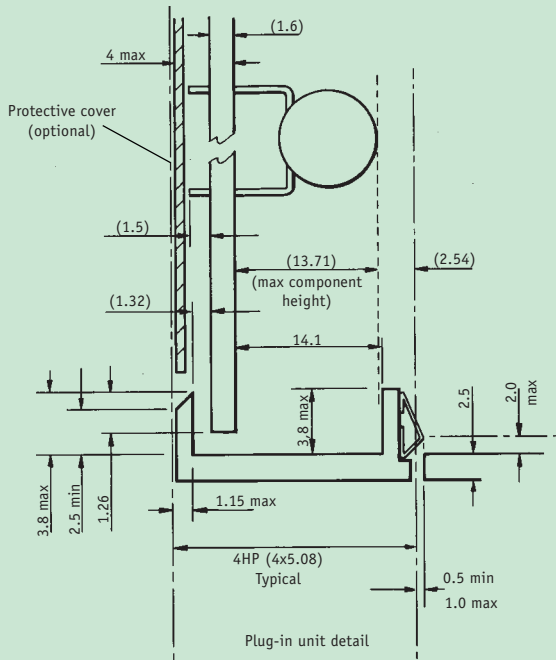

Typical arrangement of 1101.10 subrack

Labels: Injector / Extractor operating feature; EMC seals; Infill (blank) panel; Coding / ESD feature; Injector / Extractor; Box type plug in unit

Subrack conductive areas

Conductive surfaces or EMC gasket

2.0 max; 2.5 min; 0.5 min; 1.0 max

Subrack Injector / extractor operating feature

5.08; 2.54; 2.54; 10; 5.5; 2.5; 3.5; 5.08

Subrack mounted coding / ESD feature

4x5.08; 3x5.08; 15.24; 10.16; 2.54; 5.08; 2.5□; 3.4Ø(dia); 2.54; 2.54; 2.54
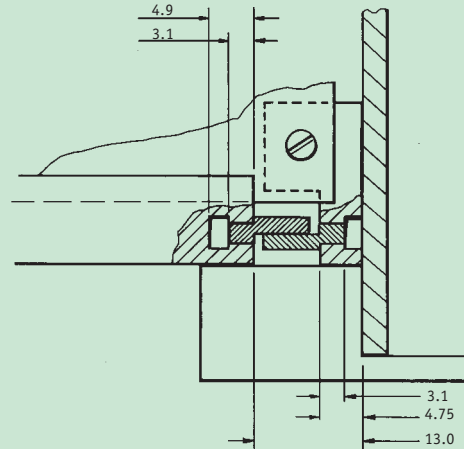
NEW IEEE 1101.10 Critical Dimensions

Typical plug-in unit showing injector / extractor coding, ESD and front panel geometry

Interaction of coding key
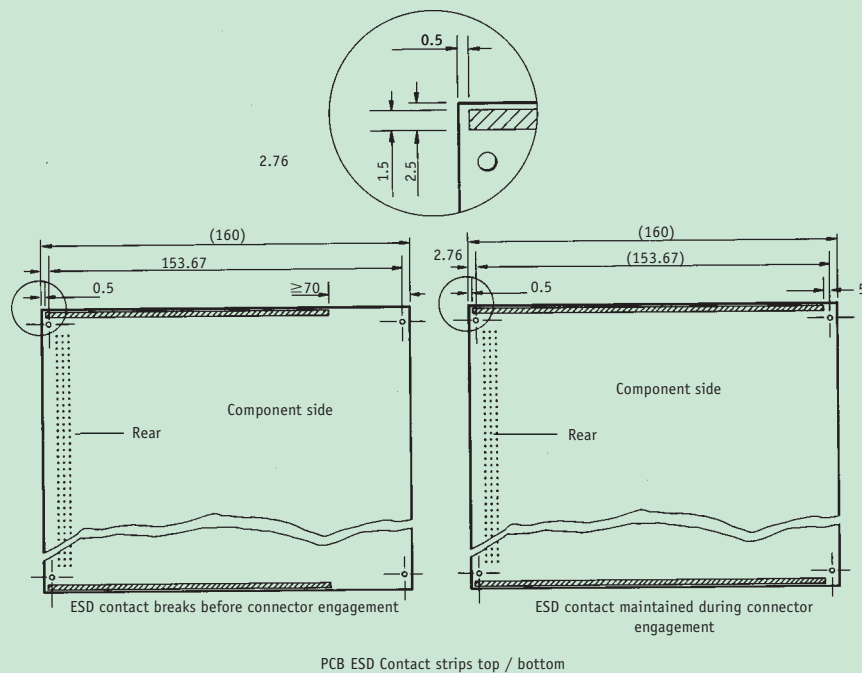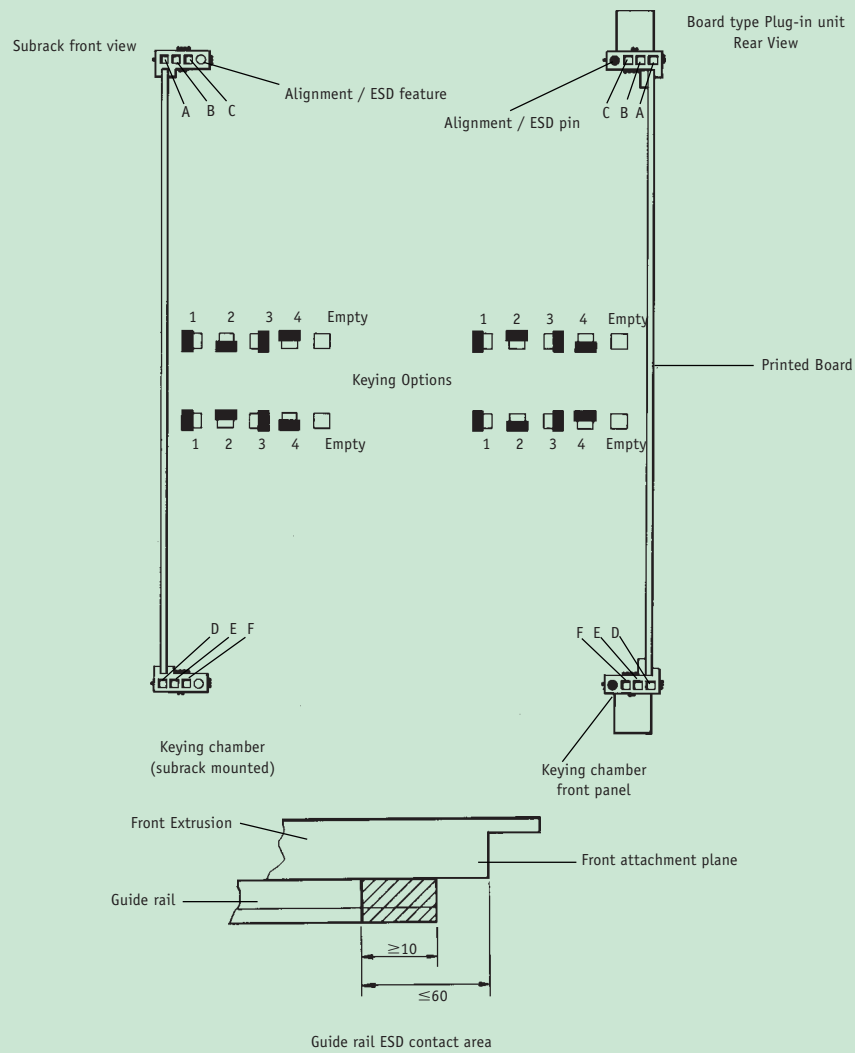
4.9
3.1

3.1
4.75
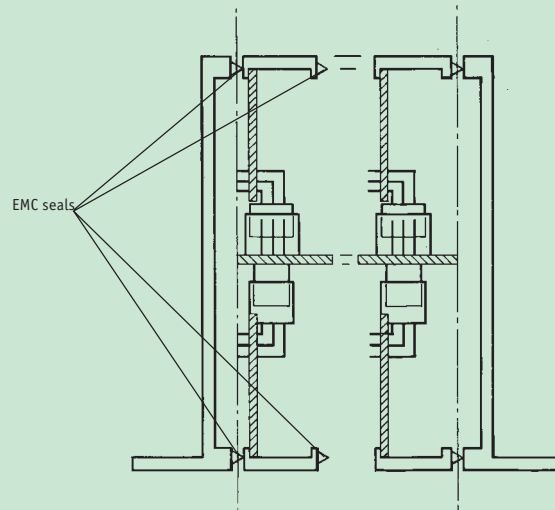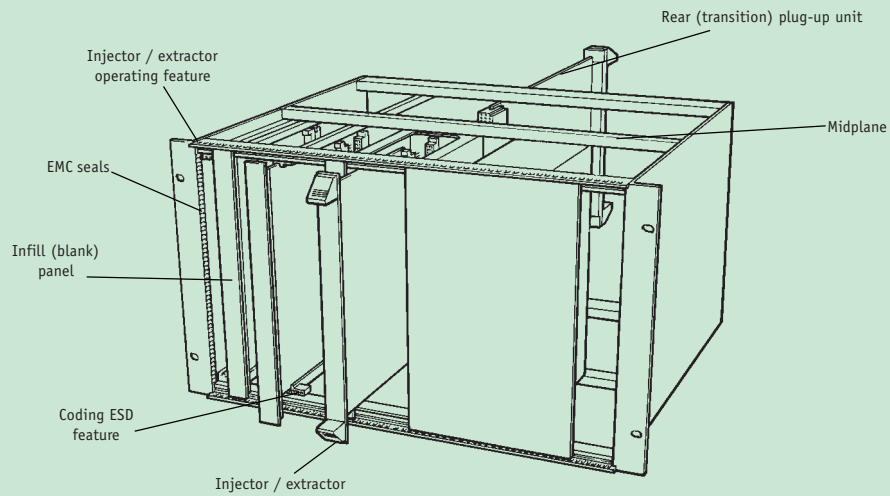13.0

(1.6)
4 max

Protective cover (optional)

(1.5)
(13.71)
(max component height)
(2.54)
(1.32)
14.1
3.8 max
2.5
2.0 max
3.8 max
2.5 min
1.26
1.15 max
4HP (4x5.08) Typical
0.5 min
1.0 max

Plug-in unit detail

2.4
2.4
4.6
7.6
1.0
4.4
2.1

Coding key

≤ 14.5
10
2.5
1.5

Test dimension (N x U) - 4.35 + 0.55 - 0.0

3.8

≤ 38

Detail for extractor

23 max

Usable component space

106 (3u)
239.35 (6u)
372.7 (9u)

Location ESD detail

NEW IEEE 1101.10 Critical Dimensions

Subrack front view

Alignment / ESD feature

A   B   C

Board type Plug-in unit
Rear View

Alignment / ESD pin

C   B   A

1   2   3   4   Empty

Keying Options

1   2   3   4   Empty

Printed Board

1   2   3   4   Empty

1   2   3   4   Empty

D   E   F

F   E   D

Keying chamber
(subrack mounted)

Keying chamber
front panel

Front Extrusion

Front attachment plane

Guide rail

≥10

≤60

Guide rail ESD contact area

0.5

2.76

1.5   2.5

(160)

153.67

0.5   ≥70

Component side

Rear

ESD contact breaks before connector engagement

2.76

(160)

(153.67)

0.5   5

Component side

Rear

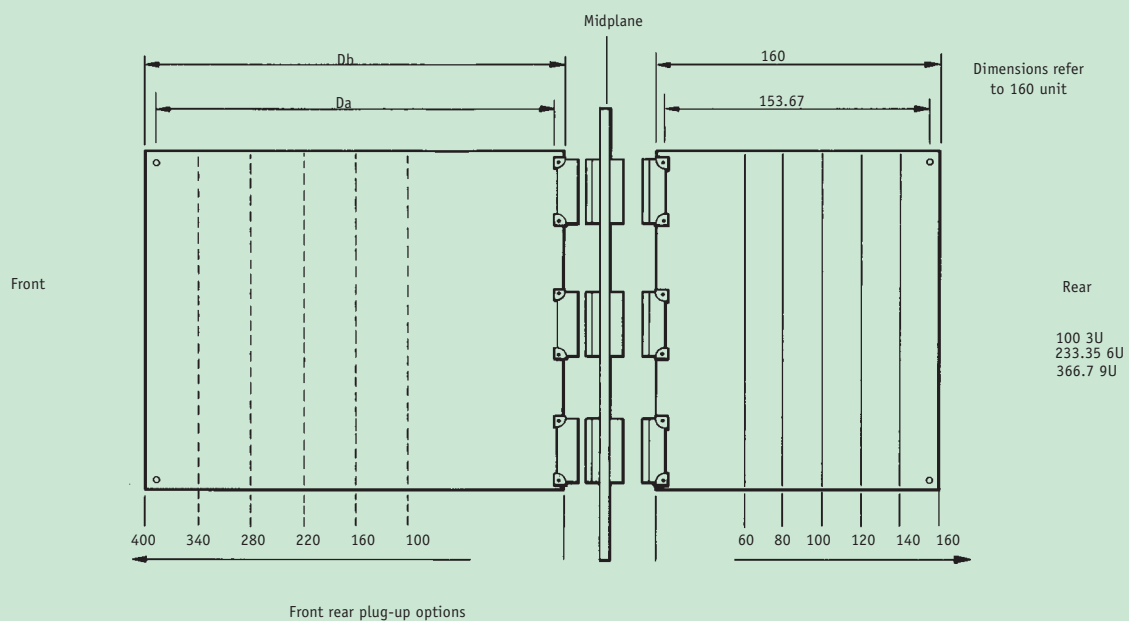ESD contact maintained during connector
engagement

PCB ESD Contact strips top / bottom

NEW IEEE 1101.11 Critical Dimensions

Typical arrangement of 1101.11 subrack with
rear plug-up

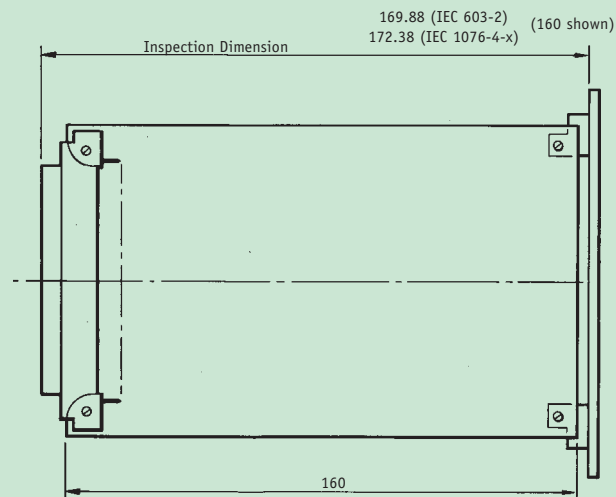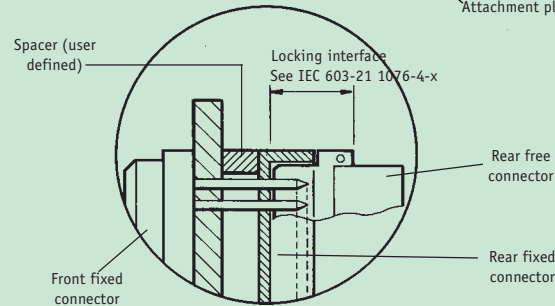Rear (transition) plug-up unit

Injector / extractor
operating feature

Midplane

EMC seals

Infill (blank)
panel

Coding ESD
feature

Injector / extractor

EMC seals

In line configuration for rear (transition)
plug-up EMC panels.

Midplane

Dh

160

Dimensions refer
to 160 unit

Da

153.67

Front

Rear

100 3U
233.35 6U
366.7 9U

400 340 280 220 160 100

60 80 100 120 140 160

Front rear plug-up options

NEW IEEE 1101.11 Critical Dimensions

≥6

Midplane
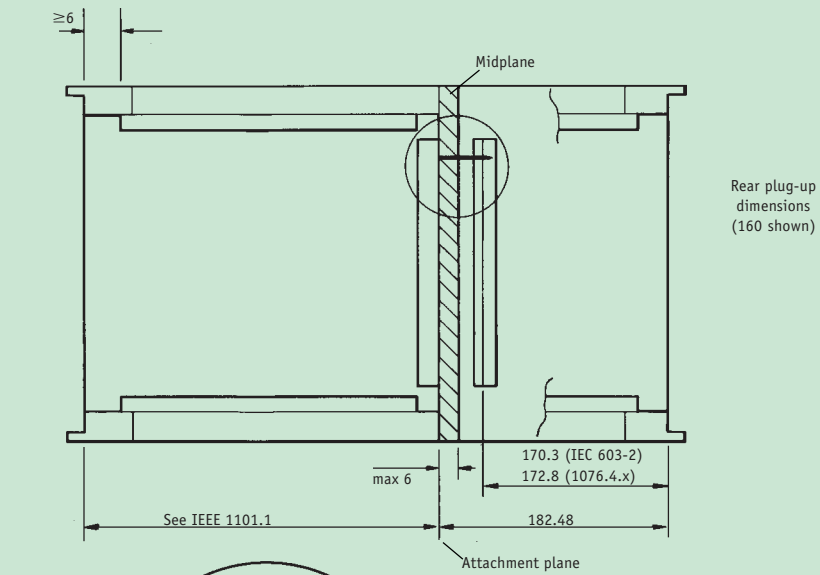
Rear plug-up
dimensions
(160 shown)

170.3 (IEC 603-2)
172.8 (1076.4.x)

max 6

182.48

See IEEE 1101.1

Attachment plane

Spacer (user
defined)

Locking interface
See IEC 603-21 1076-4-x

Rear free
connector

Front fixed
connector

Rear fixed
connector

169.88 (IEC 603-2)   (160 shown)
172.38 (IEC 1076-4-x)

Inspection Dimension

Rear (transition) plug up
detail 3U shown

160

ESD / Electrical safety ground

Frame mounted coding / ESD / location /
electrical safety ground feature
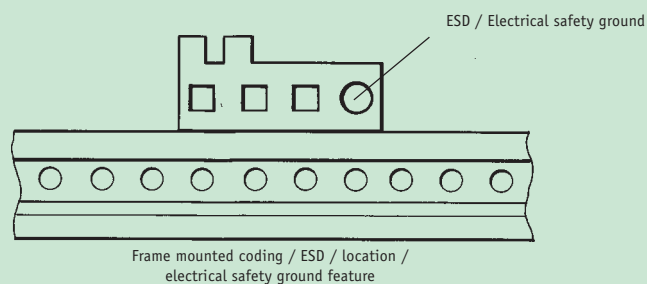
KM6-RF Subrack system Compatible with IEC60297-3 & IEEE1101.10

IEEE 1101.10 introduces some refinements to the existing IEC 60297 standards as they apply to subracks and EMC front panels:

The geometry of EMC panels and related seals is constrained to ensure interchangeability between manufacturers' offerings.

A front panel injector/extractor is introduced to help overcome the increased insertion/withdrawal forces encountered in the use of Metric and five row DIN connectors which are gaining ground especially in advanced bus systems such as **VME64x** and **CompactPCI®.** Along with this handle goes an operating 'lip' on the front extrusions and a system for coding and ESD grounding.

- Higher level EMC applications

- Complete kit delivered

- Heavy duty upgrades

KM6-RF SUBRACK - CONSTRUCTION

Style A

Version with PCB depth ventilated EMC covers (rear cover shell optional)

This version can be used where the backplane forms part of the EMC screen or where it is required to separately enclose the rear wiring area.

Style B

Version with overall ventilated EMC covers and one-piece rear closing panel

Provides a complete enclosure with a removable rear panel suitable for carrying interface connectors.
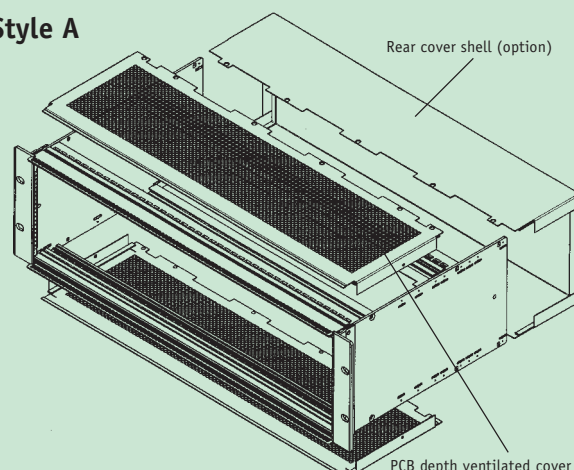
Extrusion options
Further variations within these two basic styles concern the choices of front and back plane extrusion.

Style A

Rear cover shell (option)

PCB depth ventilated cover

Style B

Overall ventilated cover

Rear closing panel

Front extrusion options

Injector/ejector lip

IEC60297-3 lip

IEEE1101.10 (injector/ extractor)

Conventional IEC60297-3

Backplane extrusion options

Backplane spacer

Type 1 for use with insulation spacer

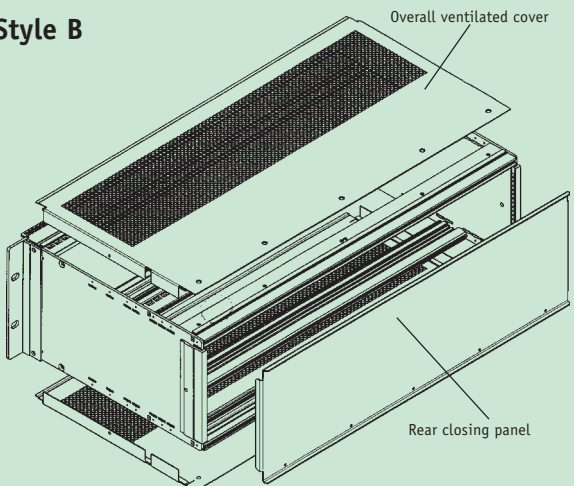**Type 2 for direct mounting (no spacer)**

EMC PERFORMANCE GRAPH

The graph shows results obtained from testing an empty style B 6U x 84hp x 300 with overall ventilated top and bottom covers, full rear closing panel and front panels

The test was carried out in our own test facility. Details of the method of testing and interpretation can be found in our leaflet 'The Science of Compliance' a copy of which is available on request.
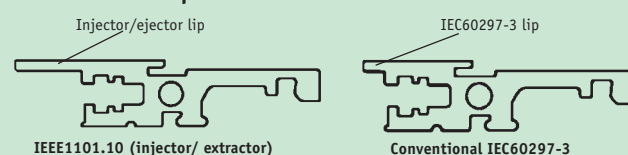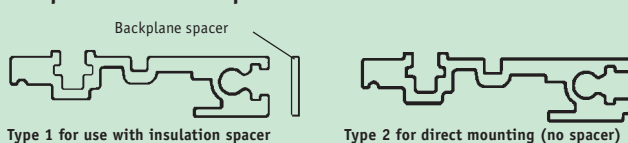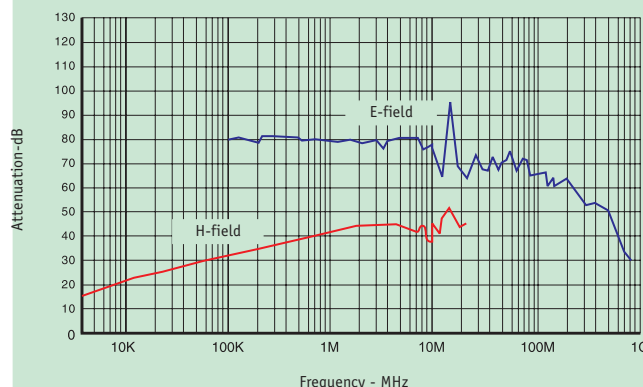
KM6-RF EMC performance graph

E-field

H-field

Attenuation-dB

Frequency - MHz

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KM6-RF Subrack *IEEE1101.10* style A - 3U

TYPE 2 BACKPLANE EXTRUSIONS

- ■ Extended front lip for injector/extractor
- ■ 240, 300 and 360mm depths
- ■ Complete kit delivery
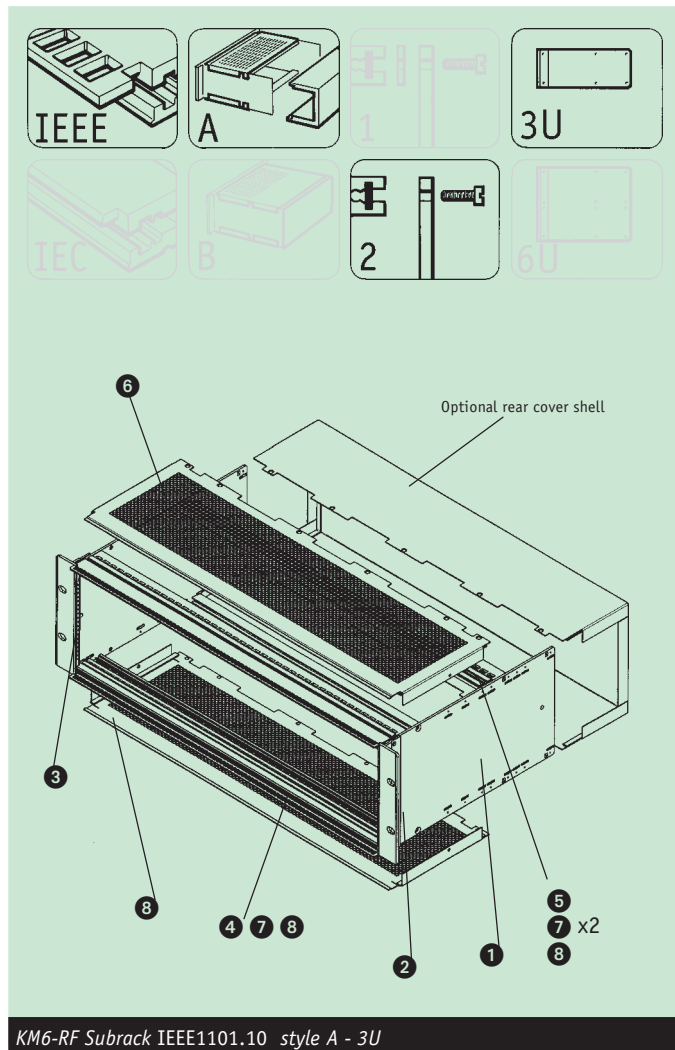- ■ Heavy duty upgrade available
- ■ Quick assembly

Contents of kit

Key/Qty/Description	Material/Finish
❶ 2 end plates	Al alloy 2,5, Clear chromate
❷ 2 end plate angles	Al extrusion, Clear chromate
❸ 1 vertical EMC finger strip	Stainless steel, Natural
❹ 2 front extrusions IEEE1101.10	Al extrusion, Clear chromate
❺ 2 type 2 backplane extrusions	Al extrusion, Clear chromate
❻ 2 EMC covers, ventilated pcb length	Mild steel 0,8mm CR4, Zinc plate and clear passivated
❼ 6 tapped strips	Mild steel, Zinc plate and colour passivated
❽ Fabric cover seals*	Copper nickel over closed cell foam
Fixings and assembly instructions	

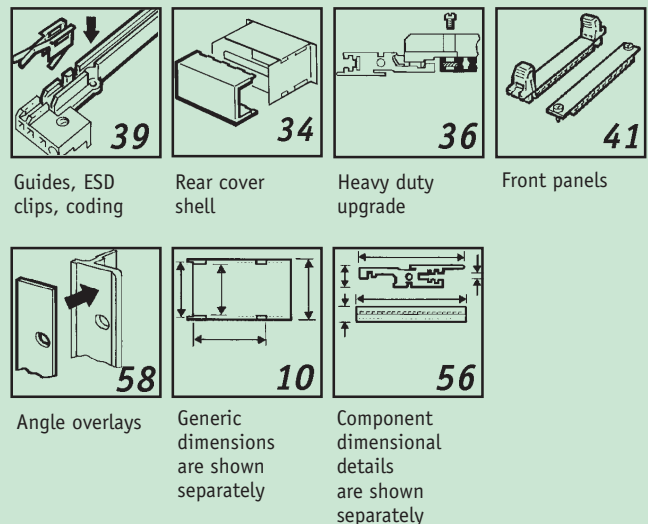*Note: supplied fitted to covers and extrusions*

Ordering information

Nominal overall dimensions	Suitable for Eurocard depth	Order Code
3U x 84hp x 240	160	**959-267639K**
3U x 84hp x 300	160	**959-267651J**
3U x 84hp x 300	220	**959-267643H**
3U x 84hp x 360	220	**959-267653E**

Optional rear cover shell

KM6-RF Subrack IEEE1101.10 style A - 3U

Order Separately

39	34	36	41
Guides, ESD clips, coding	Rear cover shell	Heavy duty upgrade	Front panels

58	10	56
Angle overlays	Generic dimensions are shown separately	Component dimensional details are shown separately

KM6-RF Subrack *IEC60297-3* **style A - 3U**

TYPE 2 BACKPLANE EXTRUSIONS

- Conventional front lip
- 240, 300 and 360mm depths
- Complete kit delivery
- Heavy duty upgrade available
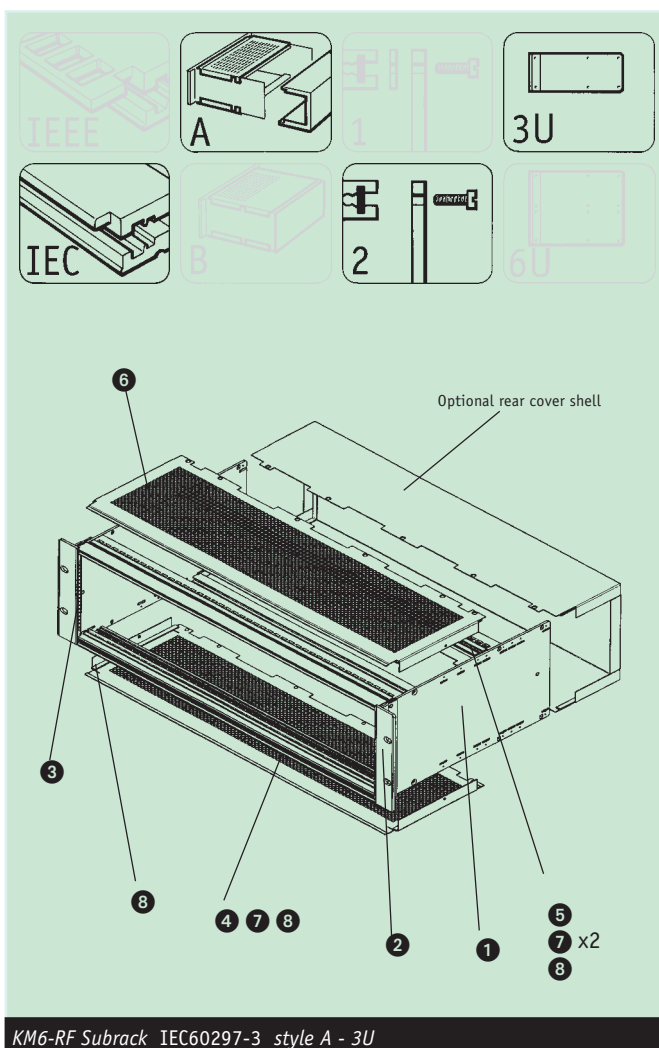- Quick assembly

Contents of kit

Key/Qty/Description	Material/Finish
❶ 2 end plates	Al alloy 2,5, Clear chromate
❷ 2 end plate angles	Al extrusion, Clear chromate
❸ 1 vertical EMC finger strip	Stainless steel, Natural
❹ 2 front extrusions IEC 60297-3	Al extrusion, Clear chromate
❺ 2 type 2 backplane extrusions	Al extrusion, Clear chromate
❻ 2 EMC covers, ventilated pcb length	Mild steel 0,8mm CR4, Zinc plate and clear passivated
❼ 6 tapped strips	Mild steel Zinc plate and colour passivated
❽ Fabric cover seals*	Copper nickel over closed cell foam
Fixings and assembly instructions	

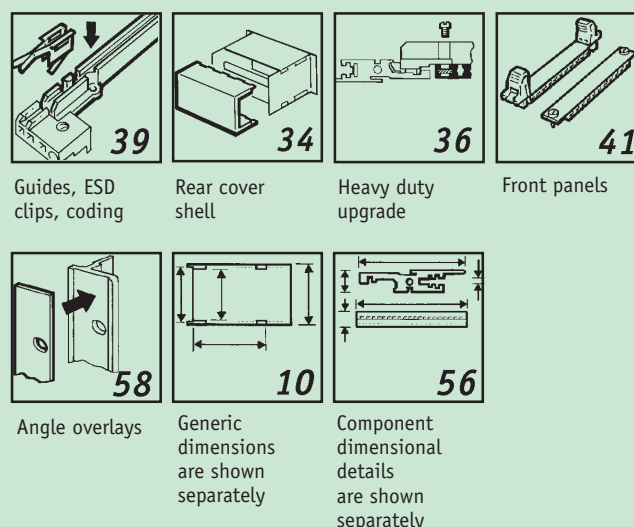*Note: supplied fitted to covers and extrusions*

Ordering information

Nominal overall dimensions	Suitable for Eurocard depth	Order Code
3U x 84hp x 240	160	**959-262246K**
3U x 84hp x 300	160	**959-262279F**
3U x 84hp x 300	220	**959-262248F**
3U x 84hp x 360	220	**959-262281H**

Optional rear cover shell

KM6-RF Subrack IEC60297-3 style A - 3U

Order Separately

| 39 Guides, ESD clips, coding | 34 Rear cover shell | 36 Heavy duty upgrade | 41 Front panels |

| 58 Angle overlays | 10 Generic dimensions are shown separately | 56 Component dimensional details are shown separately |

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KM6-RF Subrack *IEEE1101.10* style A - 6U

TYPE 2 BACKPLANE EXTRUSIONS

- Extended front lip for injector/extractor
- 240, 300 and 360mm depths
- Complete kit delivery
- Heavy duty upgrade available
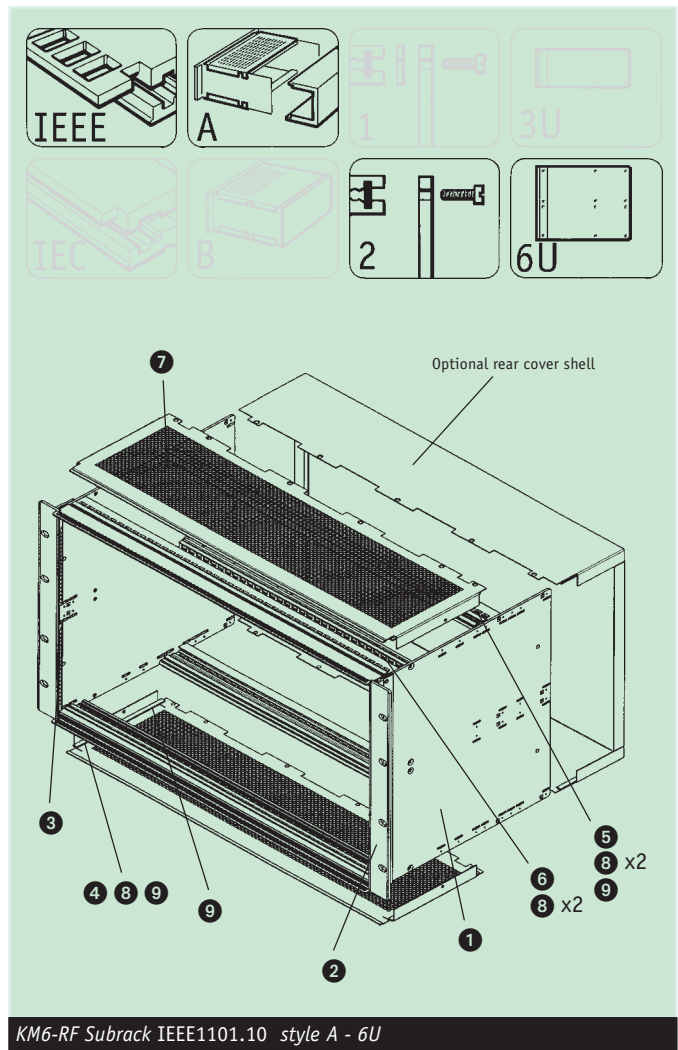- Quick assembly

Contents of kit

Key/Qty/Description	Material/Finish
❶ 2 end plates	Al alloy 2,5, Clear chromate
❷ 2 end plate angles	Al extrusion, Clear chromate
❸ 2 vertical EMC finger strip	Stainless steel, Natural
❹ 2 front extrusions IEEE1101.10	Al extrusion, Clear chromate
❺ 2 type 2 backplane extrusions	Al extrusion, Clear chromate
❻ 1 type 2 centre backplane ext.	Al extrusion, Clear chromate
❼ 2 EMC covers, ventilated pcb length	Mild steel 0,8mm CR4, Zinc plate and clear passivated
❽ 8 tapped strips	Mild steel, Zinc plate and colour passivated
❾ Fabric cover seals*	Copper nickel over closed cell foam
Fixings and assembly instructions	

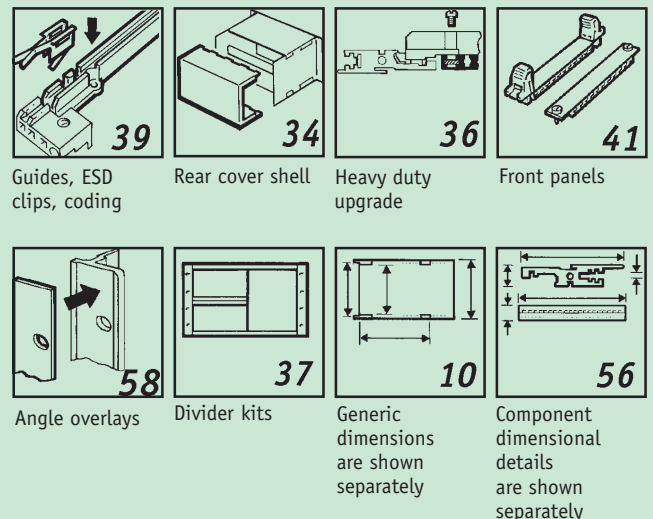** Note: supplied fitted to covers and extrusions*

Ordering information

Nominal overall dimensions	Suitable for Eurocard depth	Order Code
6U x 84hp x 240	160	**959-267641A**
6U x 84hp x 300	160	**959-267652G**
6U x 84hp x 300	220	**959-267644F**
6U x 84hp x 360	220	**959-267654C**

Optional rear cover shell

KM6-RF Subrack IEEE1101.10 style A - 6U

Order Separately

39 Guides, ESD clips, coding

34 Rear cover shell

36 Heavy duty upgrade

41 Front panels

58 Angle overlays

37 Divider kits

10 Generic dimensions are shown separately

56 Component dimensional details are shown separately

KM6-RF Subrack *IEC 60297-3* style A - 6U

TYPE 2 BACKPLANE EXTRUSIONS

- Conventional front lip
- 240, 300 and 360mm depths
- Complete kit delivery
- Heavy duty upgrade available
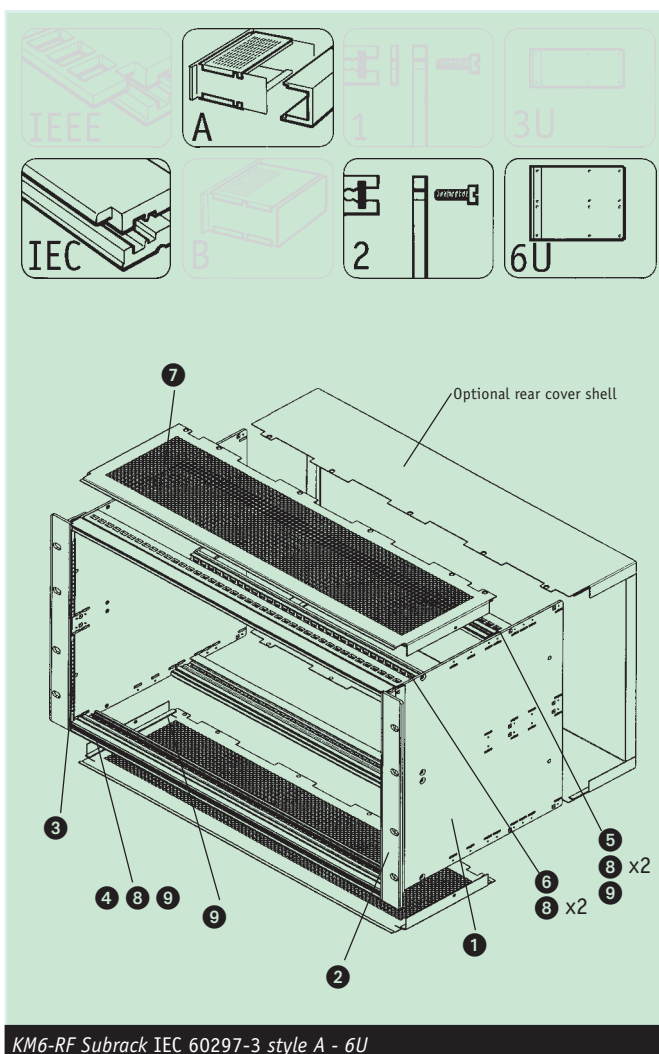- Quick assembly

Contents of kit

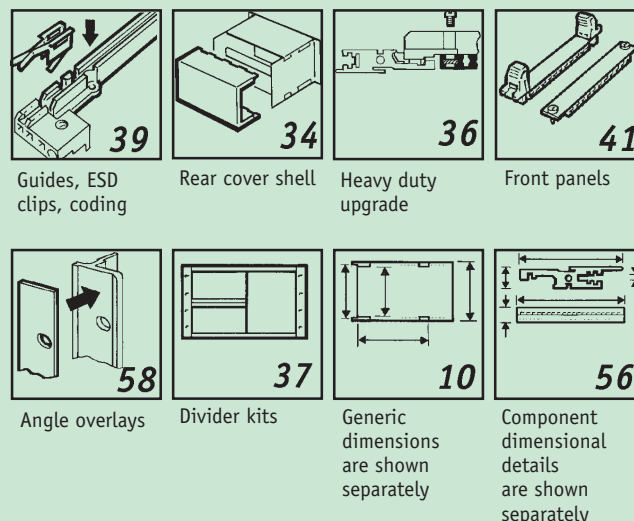| Key/Qty/Description	Material/Finish
❶ 2 end plates	Al alloy 2,5, Clear chromate
❷ 2 end plate angles	Al extrusion, Clear chromate
❸ 2 vertical EMC finger strip	Stainless steel, Natural
❹ 2 front extrusions IEC 60297-3	Al extrusion, Clear chromate
❺ 2 type 2 backplane extrusions	Al extrusion, Clear chromate
❻ 1 type 2 centre backplane ext.	Al extrusion, Clear chromate
❼ 2 EMC covers, ventilated, of pcb length	Mild steel 0,8mm CR4, Zinc plate and clear passivated
❽ 8 tapped strips	Mild steel Zinc plate and colour passivated
❾ Fabric cover seals*	Copper nickel over closed cell, foam
Fixings and assembly instructions	

Note: supplied fitted to covers and extrusions

Ordering information

Nominal overall dimensions	Suitable for Eurocard depth	Order Code
6U x 84hp x 240	160	**959-262247H**
6U x 84hp x 300	160	**959-262280K**
6U x 84hp x 300	220	**959-262249D**
6U x 84hp x 360	220	**959-262282F**

KM6-RF Subrack IEC 60297-3 style A - 6U

Order Separately

39 Guides, ESD clips, coding
34 Rear cover shell
36 Heavy duty upgrade
41 Front panels
58 Angle overlays
37 Divider kits
10 Generic dimensions are shown separately
56 Component dimensional details are shown separately

VERO

KM6-RF Subrack *IEEE1101.10* style B - 3U

TYPE 1 BACKPLANE EXTRUSIONS

- ■ Extended front lip for injector/extractor
- ■ 240, 300 and 360mm depths
- ■ Complete kit delivery including insulating spacers and rear panel
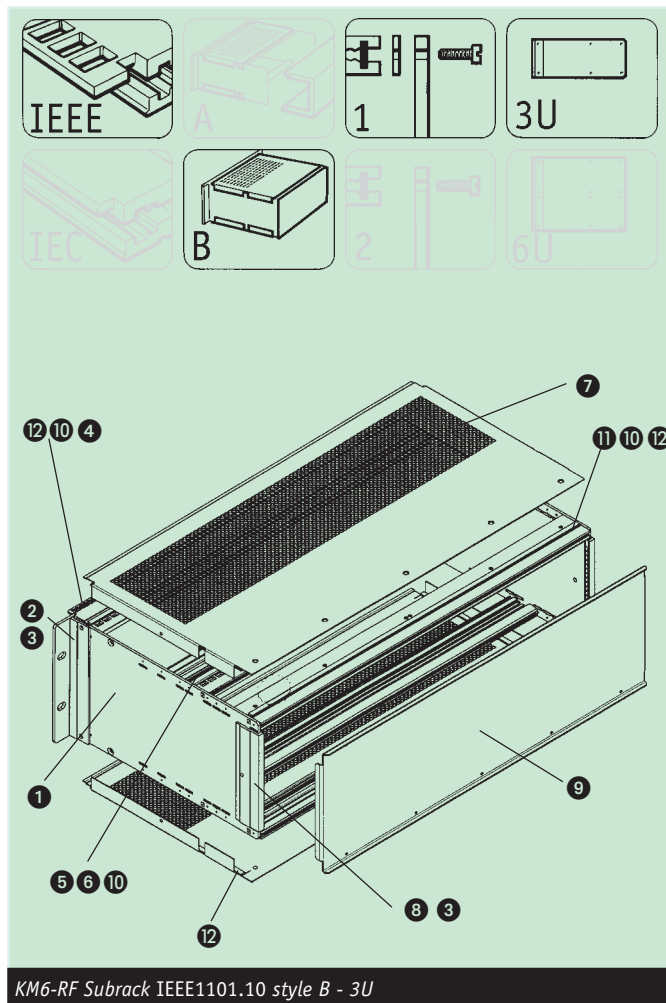- ■ Heavy duty upgrade available
- ■ Quick assembly

Contents of kit

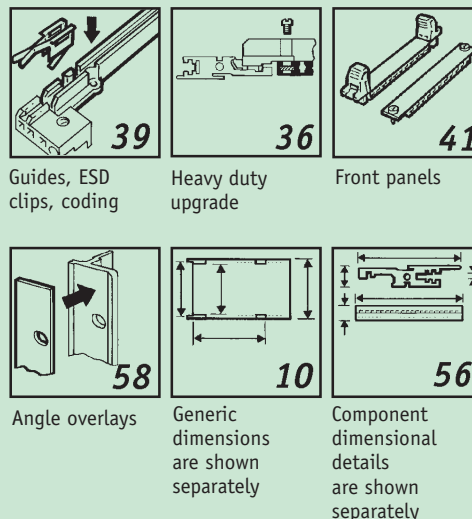| Key/Qty/Description	Material/Finish
❶ 2 end plates	Al alloy 2,5, Clear chromate
❷ 2 end plate angles	Al extrusion, Clear chromate
❸ 3 vertical EMC finger strip	Stainless steel, Natural
❹ 2 front extrusions IEEE1101.10	Al extrusion, Clear chromate
❺ 2 type 1 backplane extrusions	Al extrusion, Clear chromate
❻ 2 insulating spacers	1mm PVC UL94 V0, Grey
❼ 2 overall EMC covers, ventilated	Mild steel 0,8mm CR4, Zinc plate and clear passivated
❽ 2 rear closing angles	Al extrusion, Clear chromate
❾ 1 overall rear closing panel	Al alloy 1,2, Clear chromate
❿ 6 tapped strips	Mild steel, Zinc plate and colour passivated
⓫ 2 rear extrusions	Al extrusion, Clear chromate
⓬ Fabric cover seals*	Copper nickel over closed cell foam
Fixings and assembly instructions	

Note: supplied fitted to covers and extrusions

Ordering information

Nominal overall dimensions	Suitable for Eurocard depth	Order Code
3U x 84hp x 240	160	**959-267632B**
3U x 84hp x 300	160 or 220	**959-267633L**
3U x 84hp x 360	160 or 220	**959-267634J**

KM6-RF Subrack IEEE1101.10 style B - 3U

Order Separately

39 Guides, ESD clips, coding	36 Heavy duty upgrade	41 Front panels
58 Angle overlays	10 Generic dimensions are shown separately	56 Component dimensional details are shown separately

KM6-RF Subrack *IEC 60297-3* **style B - 3U**

TYPE 1 BACKPLANE EXTRUSIONS

■ Conventional front lip
■ 240, 300 and 360mm depths
■ Complete kit delivery including insulating spacers and rear panel
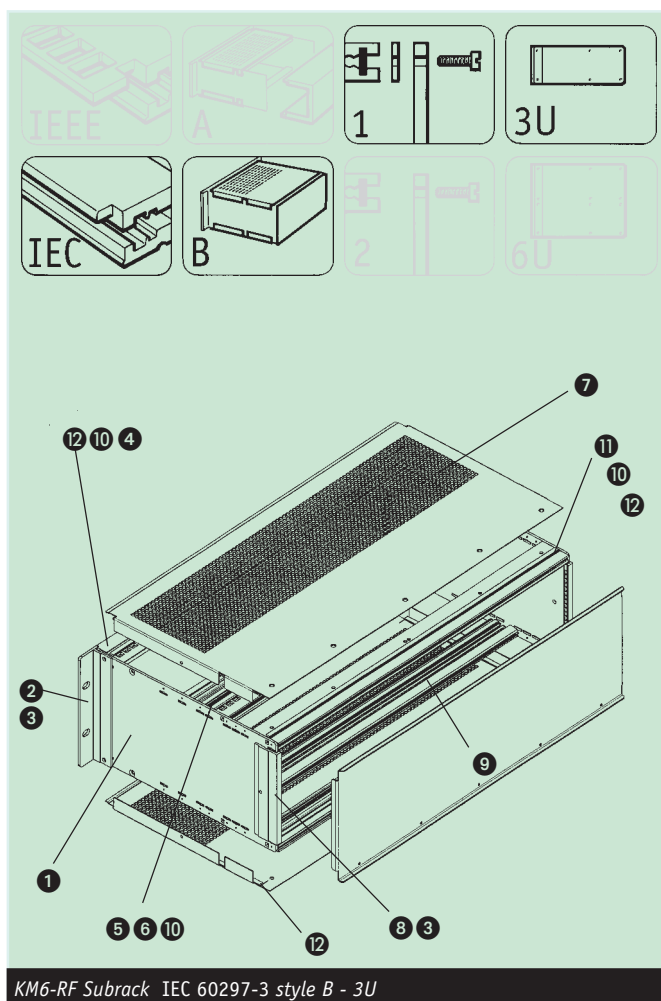■ Heavy duty upgrade available
■ Quick assembly

Contents of kit

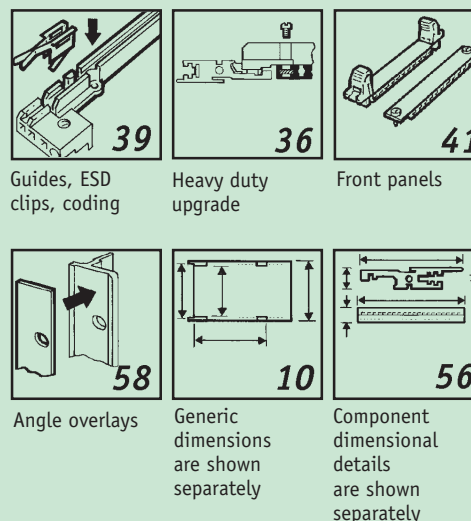| Key/Qty/Description	Material/Finish
❶ 2 end plates	Al alloy 2,5, Clear chromate
❷ 2 end plate angles	Al extrusion, Clear chromate
❸ 3 vertical EMC finger strip	Stainless steel, Natural
❹ 2 front extrusions IEC60297-3	Al extrusion, Clear chromate
❺ 2 type 1 backplane extrusions	Al extrusion, Clear chromate
❻ 2 insulating spacers	1mm PVC UL94 V0, Grey
❼ 2 overall EMC covers, ventilated	Mild steel 0,8mm CR4, Zinc plate and clear passivated
❽ 2 rear closing angles	Al extrusion, Clear chromate
❾ 1 overall rear closing panel	Al alloy 1,2, Clear chromate
❿ 6 tapped strips	Mild steel, Zinc plate and colour passivated
⓫ 2 rear extrusions	Al extrusion, Clear chromate
⓬ Fabric cover seals*	Copper nickel over closed cell foam
Fixings and assembly instructions	

Note: supplied fitted to covers and extrusions

Ordering information

Nominal overall dimensions	Suitable for Eurocard depth	Order Code
3U x 84hp x 240	160	**959-262240L**
3U x 84hp x 300	160 or 220	**959-262241J**
3U x 84hp x 360	160 or 220	**959-262242G**

KM6-RF Subrack IEC 60297-3 style B - 3U

Order Separately

39 Guides, ESD clips, coding	**36** Heavy duty upgrade	**41** Front panels
58 Angle overlays	**10** Generic dimensions are shown separately	**56** Component dimensional details are shown separately

VERO

KM6-RF Subrack *IEEE1101.10* style B - 6U

TYPE 1 BACKPLANE EXTRUSIONS

- Extended front lip for injector/extractor
- 240, 300 and 360mm depths
- Complete kit delivery including insulation spacers and rear closing panel
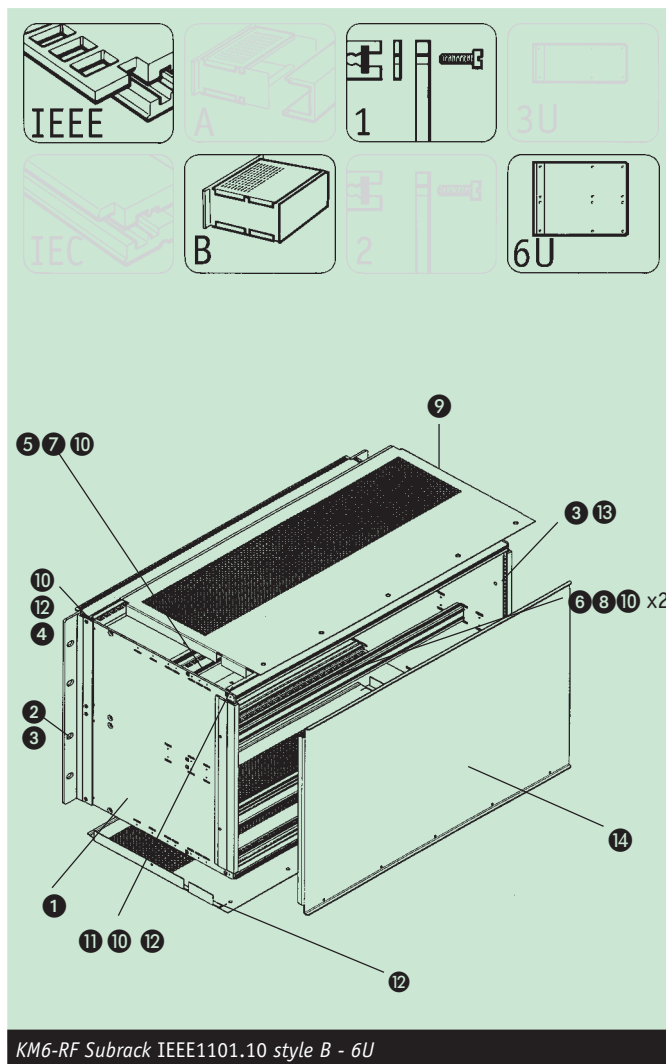- Heavy duty upgrade available
- Quick assembly

Contents of kit

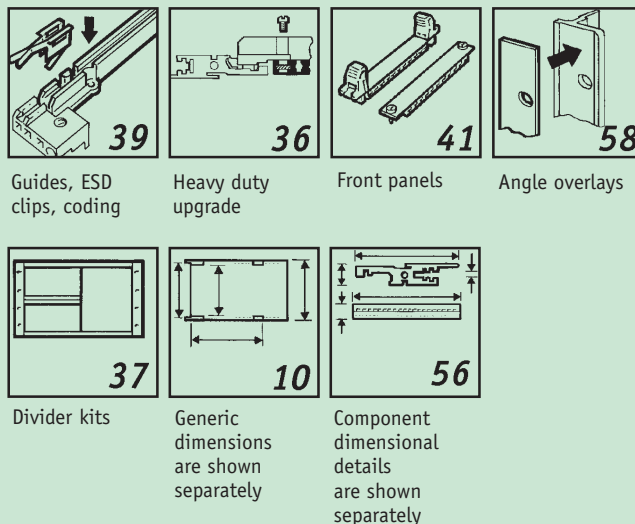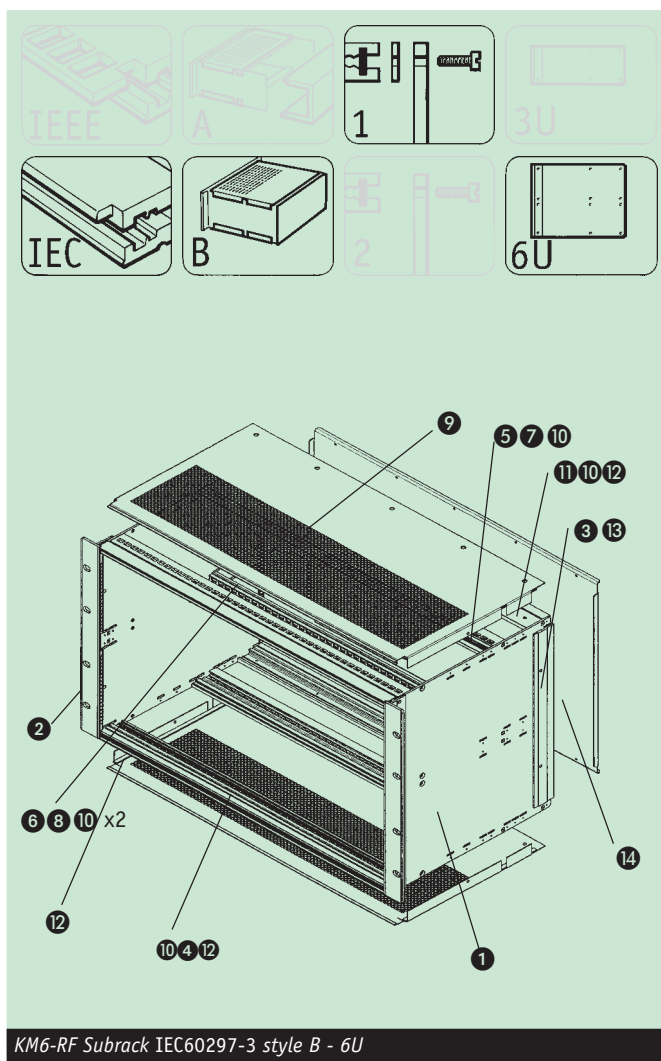| Key/Qty/Description	Material/Finish
❶ 2 end plates	Al alloy 2,5, Clear chromate
❷ 2 end plate angles	Al extrusion, Clear chromate
❸ 4 vertical EMC finger strip	Stainless steel, Natural
❹ 2 front extrusions IEEE1101.10	Al extrusion, Clear chromate
❺ 2 type 1 backplane extrusions	Al extrusion, Clear chromate
❻ 1 type 1 centre backplane ext.	Al extrusion, Clear chromate
❼ 2 single level insulating spacers	1mm PVC UL94 V0, Grey
❽ 1 two level insulating spacer	1mm PVC UL94 V0, Grey
❾ 2 overall EMC, covers, ventilated	Mild steel 0,8mm CR4, Zinc plate and clear passivated
❿ 8 tapped strips	Mild steel, Zinc plate and colour passivated
⓫ 2 rear extrusions	Al extrusion, Clear chromate
⓬ Fabric cover seals*	Copper nickel over closed cell foam
⓭ 2 rear closing angles	Al extrusion, Clear chromate
⓮ 1 overall closing panel	Al alloy 2,5, Clear chromate
Fixings and assembly instructions	

Note: supplied fitted to covers and extrusions

Ordering information

Nominal overall dimensions	Suitable for Eurocard depth	Order Code
6U x 84hp x 240	160	**959-267635G**
6U x 84hp x 300	160 or 220	**959-267636E**
6U x 84hp x 360	160 or 220	**959-267637C**

KM6-RF Subrack IEEE1101.10 *style B - 6U*

Order Separately

| 39 Guides, ESD clips, coding | 36 Heavy duty upgrade | 41 Front panels | 58 Angle overlays |

| 37 Divider kits | 10 Generic dimensions are shown separately | 56 Component dimensional details are shown separately |

KM6-RF Subrack *IEC60297-3* style B - 6U

TYPE 1 BACKPLANE EXTRUSIONS

- Conventional front lip
- 240, 300 and 360mm depths
- Complete kit delivery including insulation spacers and rear closing panel
- Heavy duty upgrade available
- Quick assembly

Contents of kit

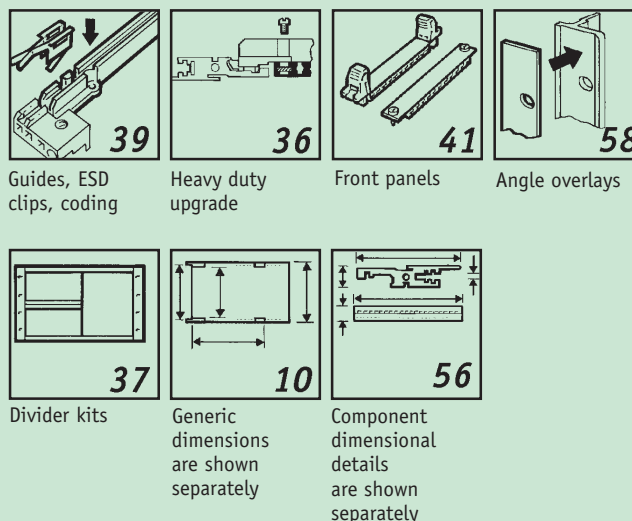| Key/Qty/Description	Material/Finish
❶ 2 end plates	Al alloy 2,5, Clear chromate
❷ 2 end plate angles	Al extrusion, Clear chromate
❸ 4 vertical EMC finger strip	Stainless steel, Natural
❹ 2 front extrusions IEC 60297-3	Al extrusion, Clear chromate
❺ 2 type 1 backplane extrusions	Al extrusion, Clear chromate
❻ 1 type 1 centre backplane ext.	Al extrusion, Clear chromate
❼ 2 single level insulating spacers	1mm PVC UL94 V0, Grey
❽ 1 two level insulating spacer	1mm PVC UL94 V0, Grey
❾ 2 overall EMC, covers, ventilated	Mild steel 0,8mm CR4, Zinc plate and clear passivated
❿ 8 tapped strips	Mild steel, Zinc plate and colour passivated
⓫ 2 rear extrusions	Al extrusion, Clear chromate
⓬ Fabric cover seals*	Copper nickel over closed cell foam
⓭ 2 rear closing angles	Al extrusion, Clear chromate
⓮ 1 overall closing panel	Al alloy 2,5, Clear chromate
Fixings and assembly instructions	

Note: supplied fitted to covers and extrusions

Ordering information

Nominal overall dimensions	Suitable for Eurocard depth	Order Code
6U x 84hp x 240	160	**959-262243E**
6U x 84hp x 300	160 or 220	**959-262244C**
6U x 84hp x 360	160 or 220	**959-262245A**

KM6-RF Subrack IEC60297-3 *style B - 6U*

Order Separately

39 Guides, ESD clips, coding

36 Heavy duty upgrade

41 Front panels

58 Angle overlays

37 Divider kits

10 Generic dimensions are shown separately

56 Component dimensional details are shown separately

KM6-RF Subrack *IEEE1101.10* style B - 3U

TYPE 2 BACKPLANE EXTRUSIONS

- ■ Extended front lip for injector/extractor
- ■ 240, 300 and 360mm depths
- ■ Complete kit delivery including rear panel
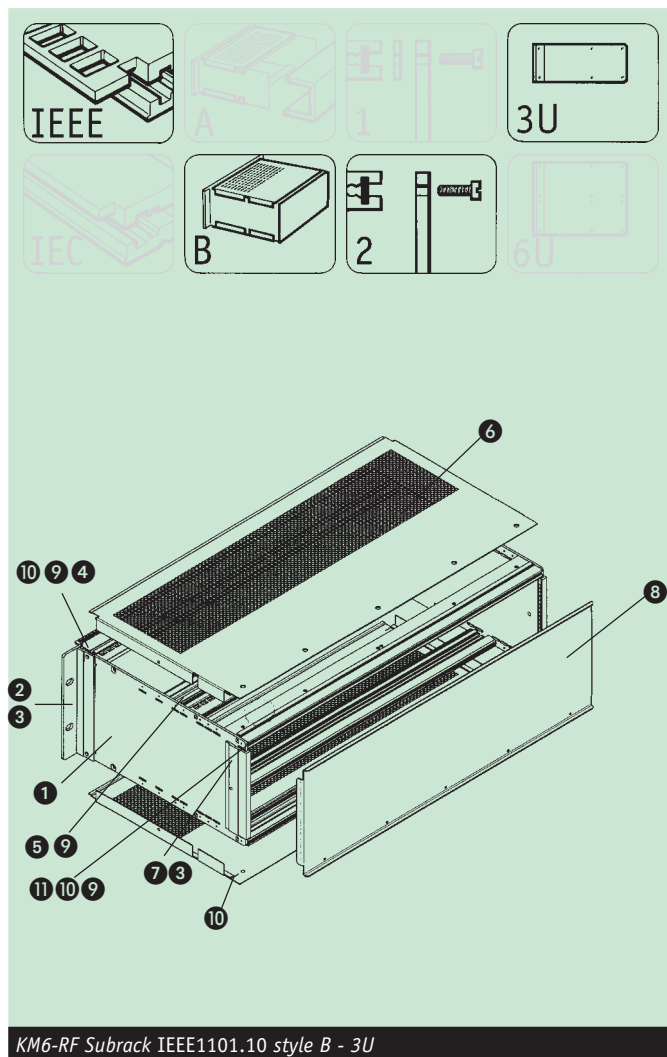- ■ Heavy duty upgrade available
- ■ Quick assembly

Contents of kit

Key/Qty/Description	Material/Finish
❶ 2 end plates	Al alloy 2,5, Clear chromate
❷ 2 end plate angles	Al extrusion, Clear chromate
❸ 3 vertical EMC finger strip	Stainless steel, Natural
❹ 2 front extrusions IEEE1101.10	Al extrusion, Clear chromate
❺ 2 type 2 backplane extrusions	Al extrusion, Clear chromate
❻ 2 overall EMC covers, ventilated	Mild steel 0,8mm CR4, Zinc plate and clear passivated
❼ 2 rear closing angles	Al extrusion, Clear chromate
❽ 1 overall rear closing panel	Al alloy 1,2, Clear chromate
❾ 6 tapped strips	Mild steel, Zinc plate and colour passivated
❿ Fabric cover seals*	Copper nickel over closed cell foam
⓫ 2 rear extrusions	Al extrusion, Clear chromate
Fixings and assembly instructions	

Note: supplied fitted to covers and extrusions

Ordering information

Nominal overall dimensions	Suitable for Eurocard depth	Order Code
3U x 84hp x 240	160	**959-267645D**
3U x 84hp x 300	160 or 220	**959-267646B**
3U x 84hp x 360	160 or 220	**959-267647L**

KM6-RF Subrack IEEE1101.10 *style B - 3U*

Order Separately

39 Guides, ESD clips, coding

36 Heavy duty upgrade

41 Front panels

58 Angle overlays

10 Generic dimensions are shown separately

56 Component dimensional details are shown separately

KM6-RF Subrack *IEC60297-3* **style B - 3U**

TYPE 2 BACKPLANE EXTRUSIONS

- Conventional front lip
- 240, 300 and 360mm depths
- Complete kit delivery including rear panel
- Heavy duty upgrade available
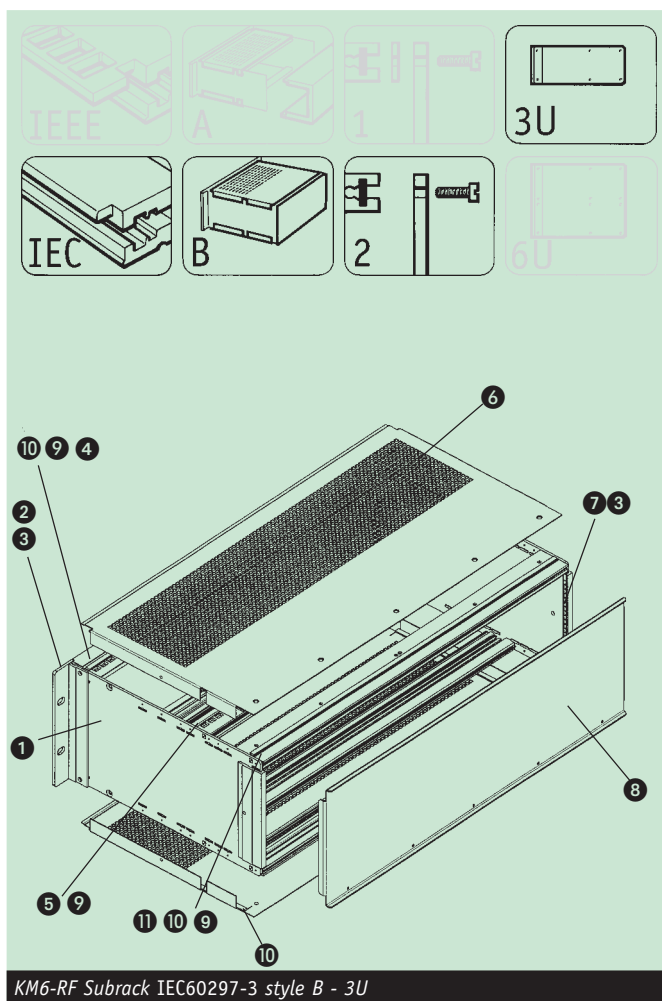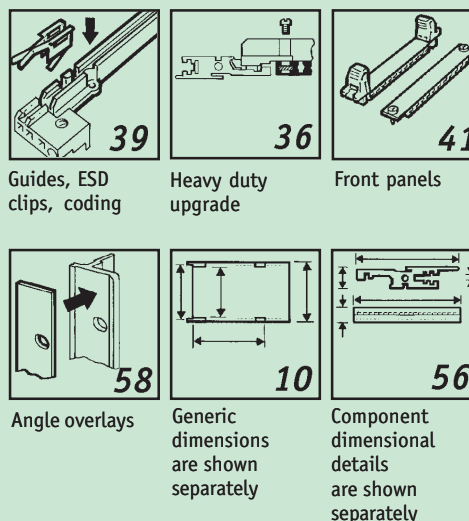- Quick assembly

Contents of kit

Key/Qty/Description	Material/Finish
❶ 2 end plates	Al alloy 2,5, Clear chromate
❷ 2 end plate angles	Al extrusion, Clear chromate
❸ 3 vertical EMC finger strip	Stainless steel, Natural
❹ 2 front extrusions IEC60297-3	Al extrusion, Clear chromate
❺ 2 type 2 backplane extrusions	Al extrusion, Clear chromate
❻ 2 overall EMC covers, ventilated	Mild steel 0,8mm CR4, Zinc plate and clear passivated
❼ 2 rear closing angles	Al extrusion, Clear chromate
❽ 1 overall rear closing panel	Al alloy 1,2, Clear chromate
❾ 6 tapped strips	Mild steel, Zinc plate and colour passivated
❿ Fabric cover seals*	Copper nickel over closed cell foam
⓫ 2 rear extrusions	Al extrusion, Clear chromate
Fixings and assembly instructions	

Note: supplied fitted to covers and extrusions

Ordering information

Nominal overall dimensions	Suitable for Eurocard depth	Order Code
3U x 84hp x 240	160	**959-262250H**
3U x 84hp x 300	160 or 220	**959-262251F**
3U x 84hp x 360	160 or 220	**959-262252D**

KM6-RF Subrack IEC60297-3 *style B - 3U*

Order Separately

39 Guides, ESD clips, coding

36 Heavy duty upgrade

41 Front panels

58 Angle overlays

10 Generic dimensions are shown separately

56 Component dimensional details are shown separately

KM6-RF Subrack *IEEE1101.10* style B - 6U

TYPE 2 BACKPLANE EXTRUSIONS

- Extended front lip for injector/extractor
- 240, 300 and 360mm depths
- Complete kit delivery including rear closing panel
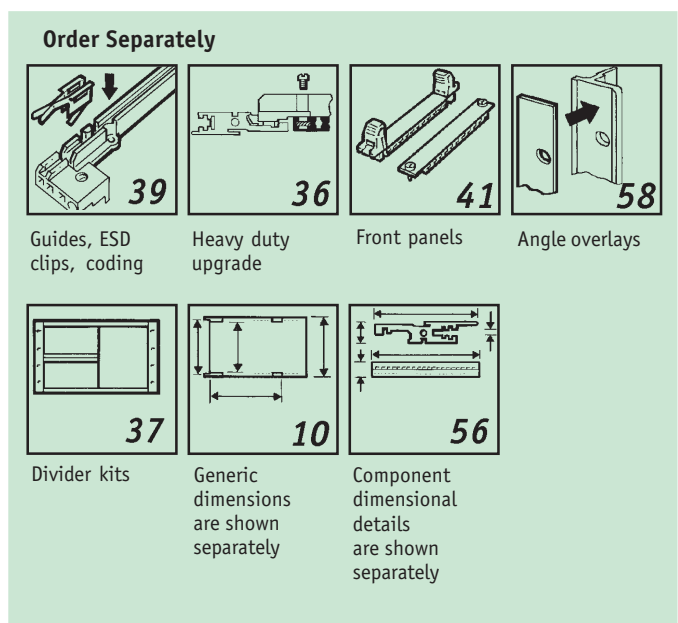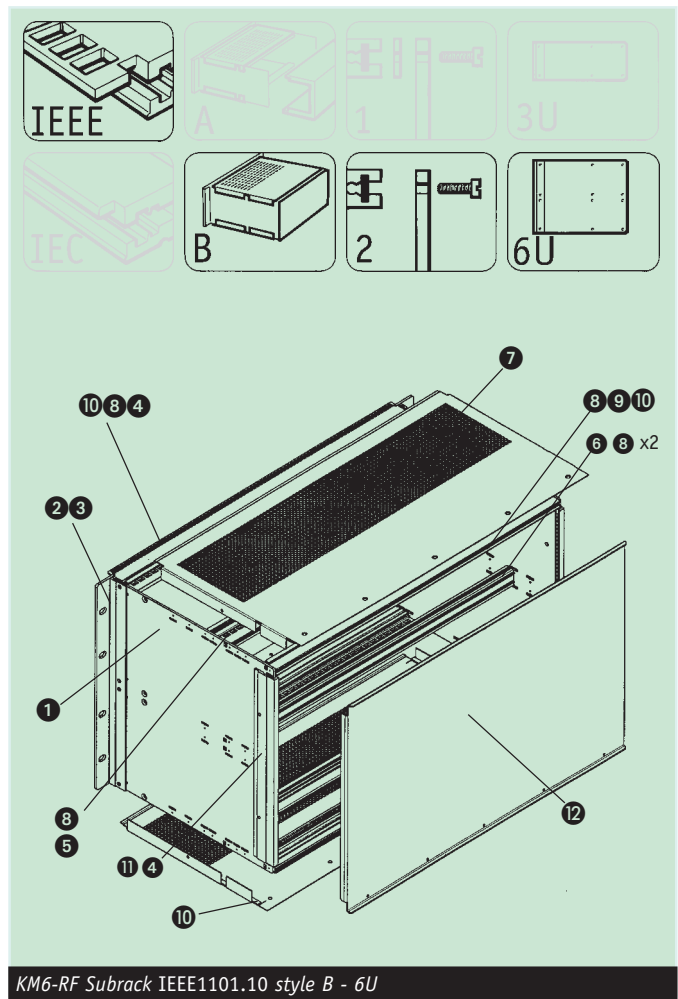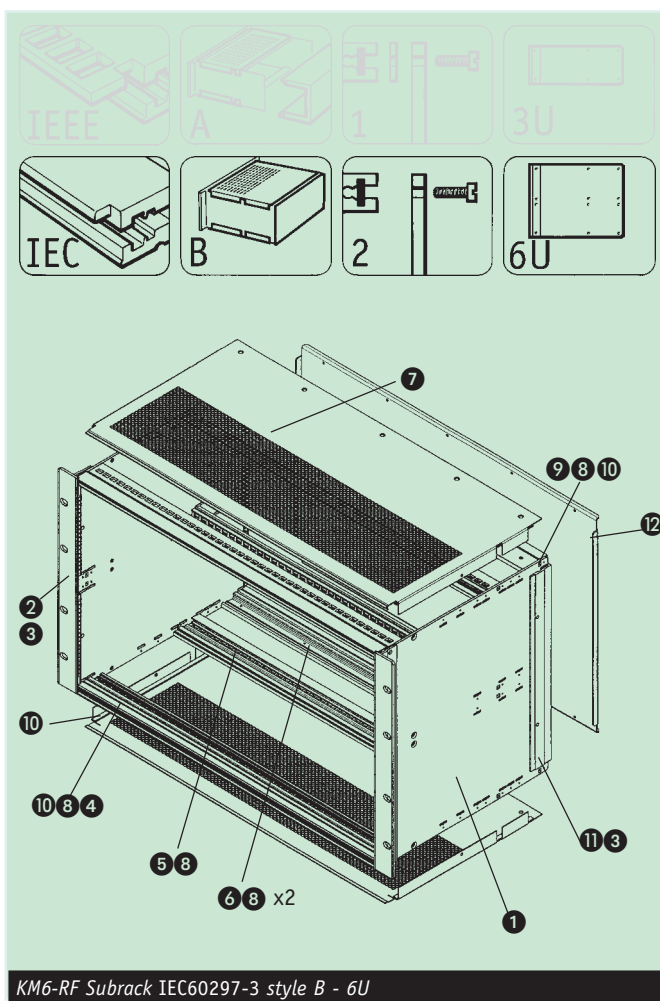- Heavy duty upgrade available
- Quick assembly

Contents of kit

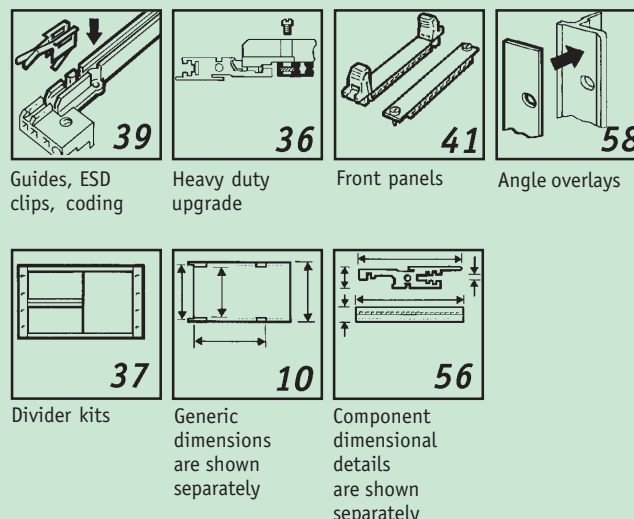| Key/Qty/Description	Material/Finish
❶ 2 end plates	Al alloy 2,5. Clear chromate
❷ 2 end plate angles	Al extrusion, Clear chromate
❸ 4 vertical EMC finger strip	Stainless steel, Natural
❹ 2 front extrusions IEEE1101.10	Al extrusion, Clear chromate
❺ 2 type 2 backplane extrusions	Al extrusion, Clear chromate
❻ 1 type 2 centre backplane ext.	Al extrusion, Clear chromate
❼ 2 Overall EMC covers, ventilated	Mild steel 0,8mm CR4, Zinc plate and clear passivated
❽ 8 tapped strips	Mild steel, Zinc plate and colour passivated
❾ 2 rear extrusions	Al extrusion, Clear chromate
❿ Fabric cover seals*	Copper nickel over closed cell foam
⓫ 2 rear closing angles	Al extrusion, Clear chromate
⓬ 1 rear closing panel	Al alloy 1,2, Clear chromate
Fixings and assembly instructions	

Note: supplied fitted to covers and extrusions

Ordering information

Nominal overall dimensions	Suitable for Eurocard depth	Order Code
6U x 84hp x 240	160	**959-267648J**
6U x 84hp x 300	160 or 220	**959-267649G**
6U x 84hp x 360	160 or 220	**959-267650L**

KM6-RF Subrack IEEE1101.10 *style B - 6U*

Order Separately

39 Guides, ESD clips, coding	**36** Heavy duty upgrade	**41** Front panels	**58** Angle overlays
37 Divider kits	**10** Generic dimensions are shown separately	**56** Component dimensional details are shown separately	

KM6-RF Subrack *IEC60297-3* **style B - 6U**

TYPE 2 BACKPLANE EXTRUSIONS

- Conventional front lip
- 240, 300 and 360mm depths
- Complete kit delivery including rear closing panel
- Heavy duty upgrade available
- Quick assembly

Contents of kit

Key/Qty/Description	Material/Finish
❶ 2 end plates	Al alloy 2,5. Clear chromate
❷ 2 end plate angles	Al extrusion, Clear chromate
❸ 4 vertical EMC finger strip	Stainless steel, Natural
❹ 2 front extrusions IEC60297-3	Al extrusion, Clear chromate
❺ 2 type 2 backplane extrusions	Al extrusion, Clear chromate
❻ 1 type 2 centre backplane ext.	Al extrusion, Clear chromate
❼ 2 Overall EMC covers, ventilated	Mild steel 0,8mm CR4, Zinc plate and clear passivated
❽ 8 tapped strips	Mild steel, Zinc plate and colour passivated
❾ 2 rear extrusions	Al extrusion, Clear chromate
❿ Fabric cover seals*	Copper nickel over closed cell foam
⓫ 2 rear closing angles	Al extrusion, Clear chromate
⓬ 1 rear closing panel	Al alloy 1,2, Clear chromate
Fixings and assembly instructions	

Note: supplied fitted to covers and extrusions

Ordering information

Nominal overall dimensions	Suitable for Eurocard depth	Order Code
6U x 84hp x 240	160	**959-262253B**
6U x 84hp x 300	160 or 220	**959-262254L**
6U x 84hp x 360	160 or 220	**959-262255J**

KM6-RF Subrack IEC60297-3 *style B - 6U*

Order Separately

39 Guides, ESD clips, coding	36 Heavy duty upgrade	41 Front panels	58 Angle overlays
37 Divider kits	10 Generic dimensions are shown separately	56 Component dimensional details are shown separately	

KM6-RF subracks *IEEE1101.11* style B-3U, 6U and 9U heights

TYPE 1 OR TYPE 2 MIDPLANE EXTRUSIONS

- Rear plug-up version
- 160mm front, various rear geometries
- Full 1101.11 compatibility
- EMC screening

In order to meet the various rear plug-up options expressed under IEEE1101.11, a number of kits are available capable of housing 160mm Eurocards at the front. For the selection of suitable parts, please see the table on the following page. Other variations are available as specials - please contact our local sales office.

Contents of kit
BASIC FRAME

Key/Qty/Description	Material/Finish
● 2 end plate angles	Al extrusion, clear chromate
● 2 rear closing angles	Al extrusion, clear chromate
● Vertical EMC fingers	Stainless steel
❹ 4 IEEE1101.10 extrusions	Al extrusion, clear chromate
❺ 8 tapped strips	Steel ,Zinc plate and colour passivate
● 2 top/bottom covers, 160 PCB type	Steel 0,8mm CR4 Zinc plate and clear passivate
❻ Fabric EMC seals	Copper nickel over closed cell foam
Fixings and assembly instructions	

❼ According to the variant selected, the kit will also include an appropriate combination of 4 x mid rear extrusions, with or without insulation spacers.

❶ End plates: 20 end plates	Al alloy 2,5mm, Clear chromate

❽ EMC rear section covers: 20 covers	Steel 0,8mm CR4, Zinc plate and clear passivate
Suitable fabric seals and fixings	

❿ Guides :	
160 and 100mm types:	
10 guides	Luranyl 2452/1 green (UL94-V1) or Noryl HE185 grey (UL94-V0)
60, 80, 120, 140mm types:	
50 pairs guides	Noryl HE185 grey (UL94-V0)

● = Not shown, see previous pages for typical examples.

Partial details only

Midplane mounting extrusion

Rear plug up components for IEEE 1101.11 applications

Order Separately

39 Guides, ESD clips, coding

36 Heavy duty upgrade

41 Front panels

58 Angle overlays

37 Divider kits

10 Generic dimensions are shown separately

56 Component dimensional details are shown separately

KM6-RF subracks *IEEE1101.11* style B-3U, 6U and 9U heights

TYPE 1 OR TYPE 2 MIDPLANE EXTRUSIONS

Ordering information

You will need to select kits as follows

Step 1 A suitable basic kit (**A** or **B**) is selected by the final assembly configuration (height, plug-up geometry) and whether the midplane is to be mounted with insulation spacers (Type 1) or direct to the extrusion (Type 2) . This basic kit contains all parts necessary to construct a basic framework except end plates.

Step 2 The end plates (**C**) are selected according to height and the front/rear plug-up combination

Step 3 EMC rear section covers (**D**) are selected by front/rear plug-up combination.
Guides are selected as required.

Step 4 The front guides (**E**) must be 160mm type.

Step 5 The rear guides (**F**) are dependant on the rear plug-up configuration.

Front/rear plug up combination >		160/160	160/140	160/120	160/100	160/80	160/60
Description	Size	Order code	Order code	Order code	Order code	Order code	Order code
A Basic frame each	3U	**959-275800L**	959-275806K	959-275806K	959-275800L	959-275806K	959-275806K
with Type 1	6U	**959-275801J**	959-275807H	959-275807H	959-275801J	959-275807H	959-275807H
mid plane extrusion	9U	**959-275802G**	959-275808F	959-275808F	959-275802G	959-275808F	959-275808F
B Basic frame each	3U	**959-275803E**	959-275809D	959-275809D	959-275803E	959-275809D	959-275809D
with Type 2	6U	**959-275804C**	959-275810H	959-275810H	959-275804C	959-275810H	959-275810H
mid plane extrusion	9U	**959-275805A**	959-275811F	959-275811F	959-275805A	959-275811F	959-275811F
C End plate Pk 20	3U	**959-275812D**	959-275813B	959-275814L	959-275815J	959-275816G	959-275817E
	6U	**959-275818C**	959-275819A	959-275820E	959-275821C	959-275822A	959-275823K
	9U	**959-275824H**	959-275825F	959-275826D	959-275827B	959-275828L	959-275829J
D Rear EMC cover pk 20 3U/6U/9U		**959-275830B**	959-275831L	959-275832J	959-275833G	959-275834E	959-275835C
E Front guides pk 10 UL94-V1 160		**950-232662J**	950-232662J	950-232662J	950-232662J	950-232662J	950-232662J
Front guides pk 10 UL94-V0 160		**950-277491E**	950-277491E	950-277491E	950-277491E	950-277491E	950-277491E
F Rear p/u guides pk 50prs UL94-V0		-	959-275836A	959-275837K	-	959-275838H	959-275839F
Rear p/u guides pk 10 UL94-V1 160		**950-232662J**	-	-	950-242850B	-	-
Rear p/u guides pk 10 UL94-V0 160		**950-277491E**	-	-	-	-	-

Note: those items appearing in the tinted panels are prefered combinations

KM6-RF Subrack - Accessories

REAR COVER SHELL FOR STYLE A

- Encloses backplane and wiring area
- Two depths - 60 and 120mm
- Two heights - 3U and 6U

The depth of the rear cover should reflect the difference between the pcb and end plate lengths

eg for a 160mm pcb in 240 end plates, a 60mm deep cover is required and in 300mm end plates, a 120mm cover. Fabric cover seals are supplied for fitting to the backplane extrusion beneath the cover.

Contents of kit

Qty/Description	Material/Finish
1 Cover	Mild steel 0, 8mm CR4, Zinc plate and clear passivated
Fabric cover seals	Copper nickel over closed cell foam
Fixings	

Ordering information

Nominal dimensions	Pcb/end plate lengths	Order Code
3U x 84hp x 60mm	160/240, 220/300	**959-262262A**
3U x 84hp x 120mm	160/300, 220/360	**959-262263K**
6U x 84hp x 60mm	160/240, 220/300	**959-262264H**
6U x 84hp x 120mm	160/300, 220/360	**959-262265F**
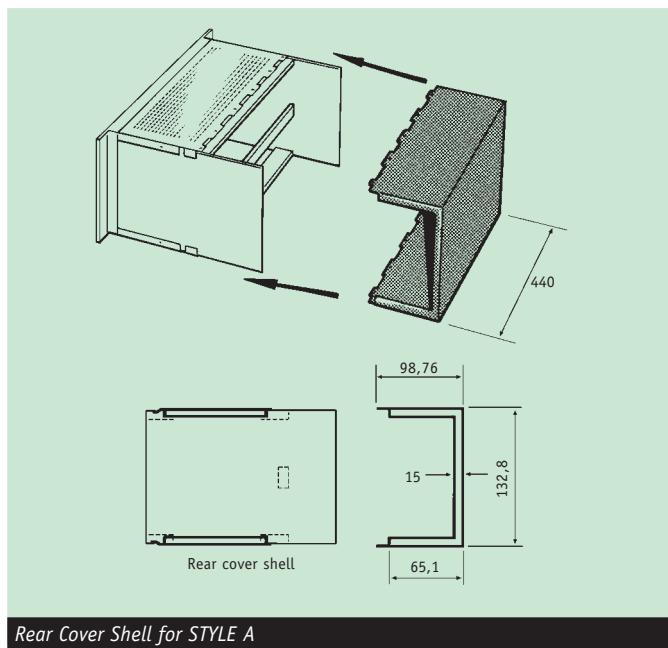
Rear Cover Shell for STYLE A

HORIZONTAL EMC FINGER STRIP

- Provides sealing between the front extrusion and the inside face of front panels.

These strips have a self adhesive angle and are stuck to the inside face of the extrusions.

Contents of kit

Qty/Description	Material/Finish
10 fingers	Stainless steel

Ordering information

Nominal dimensions	Order code
84hp	**959-262225G**
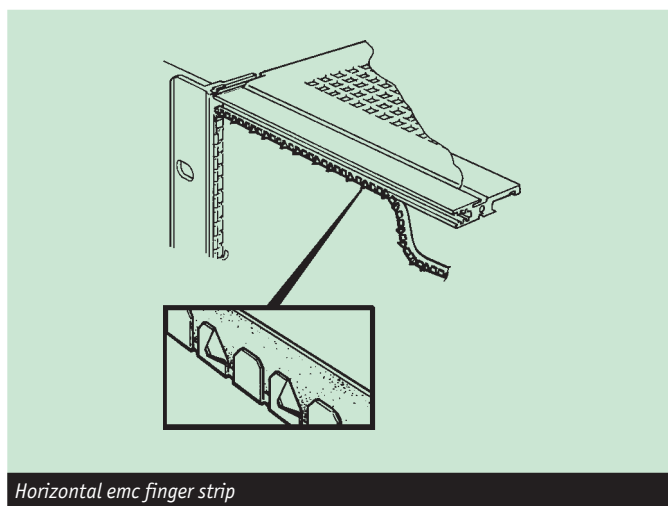
Horizontal emc finger strip

KM6-RF Subrack - Accessories

FIRE ENCLOSURE COVER

n   Addresses the Fire Enclosure requirements set out in EN60950.

n   Replaces a normal, ventilated EMC cover (normally at the bottom only).

Contents of kit

Key/Qty/Description	Material/Finish
1 cover	Mild steel 0,8mm CR4
	Zinc and clear passivate
Fabric seals	Copper nickel over closed cell foam
Fixings	

Ordering information

For style A configurations (ie PCB depth covers):

Nominal dimension	Order code
160 x 84hp	**959-262215K**
220 x 84hp	**959-262216H**

For style B configurations (ie overall subrack covers):

Nominal dimensions	
240mm x 84hp	**959-262217F**
300mm x 84hp	**959-262218D**
360mm x 84hp	**959-262219B**

Fire enclosure cover
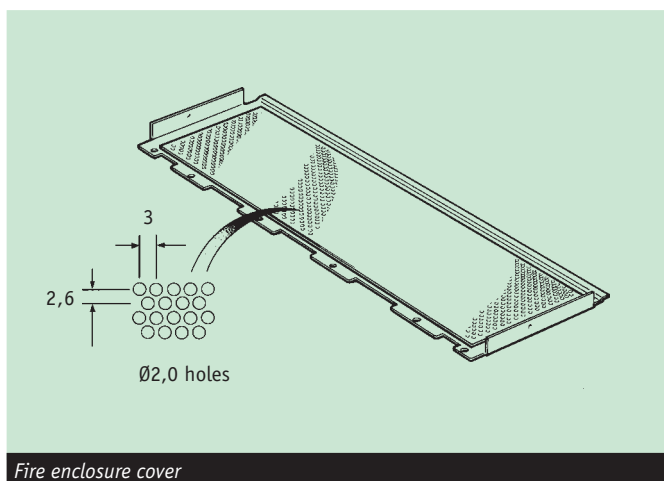
KM6-RF Subrack - Accessories

DIN 41612 CONNECTOR MOUNTING

- Converts backplane extrusions to direct mounting
- Reversible for Type 1 or Type 2 extrusions
- Can be easily cut to length for shorter applications
- Connector fixing to pre-tapped M2,5 holes

Contents of kit

Qty/Description	Material/Finish
1 Extrusion	Al extrusion Clear chromate
4 M2,5 fixing screws	

Ordering Information

Nominal dimensions	
84hp	**959-262239G**

Type 1   Type 2

DIN 41 612 Connector Mounting
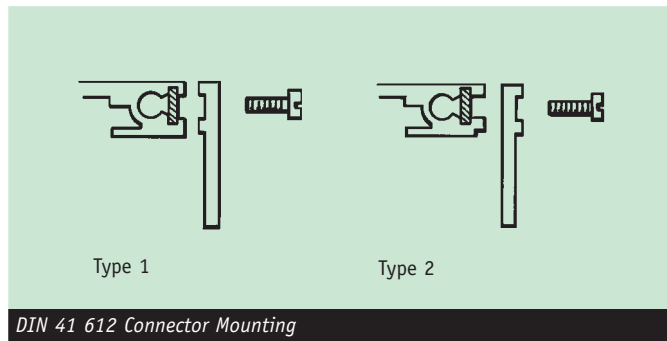
SUPPORT EXTRUSION - HEAVY DUTY UPGRADE

- Adds strength to assembly
- Permits positive retention of the guides
- Provides security for heavy plug-in units in transit or severe conditions

This extrusion attaches behind the front extrusion.
Guides can be screwed down to the horizontal tapped strip via M2,5 x 5mm security fixing screws.

Contents of kit

Qty/Description	Material/Finish
1 support extrusion	Al extrusion Clear chromate
1 tapped strip passivate	Mild steel, Zinc plate and colour
2 M4 assembly screws	

Ordering information

Nominal dimensions	Order Code
84hp	**959-262236B**
Pack 100 security fixing screws	**173-202579H**

Support extrusion - Heavy Duty upgrade
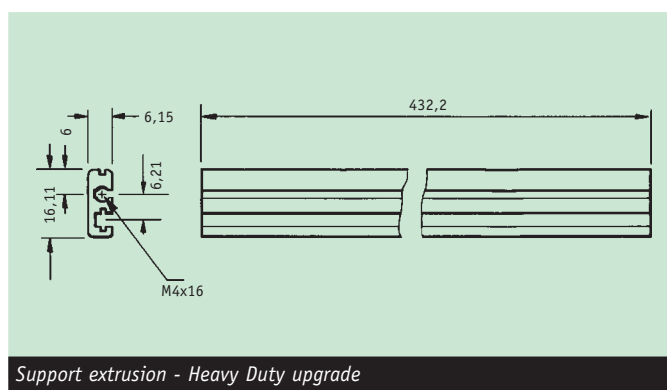
ETSI RACK MOUNTING ANGLE

- Permits mounting of 84hp subracks into ETSI mounts
- Replaces conventional 19inch end plate angles
- Self adhesive Light Grey overlays available

Contents of kit

Qty/Description	Material/Finish
ETSI rack mounting:	
1 End plate angle	Al extrusion, Clear chromate
Overlays:	
10 overlays	Polyester 0,2mm, RAL 7035 Light Grey
Polyester is a UL94.VI rated material	

Ordering information

Nominal dimensions		Order Code
3U	ETSI end plate angle	**959-262237L**
6U	ETSI end plate angle	**959-262238J**
3U	Overlay (pk 10)	**959-262222B**
6U	Overlay (pk 10)	**959-262223L**

ETSI Rack mounting angle
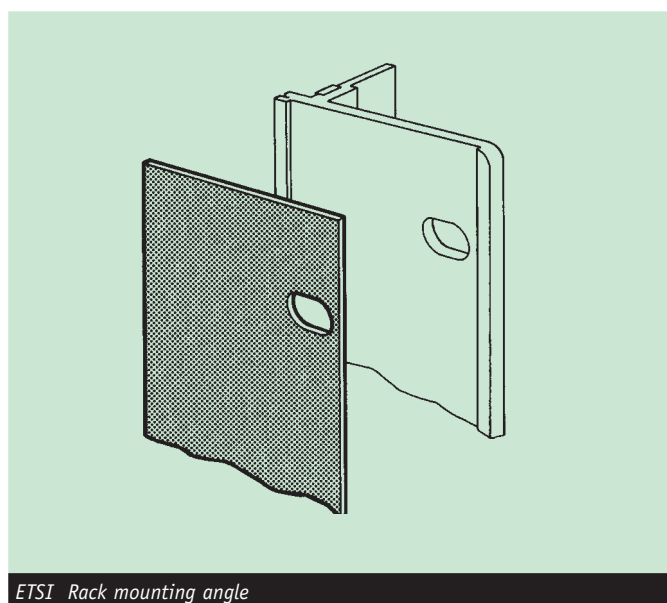
KM6-RF Subrack - Accessories

DIVIDER KIT, 2 X 3U X 84HP

- Divides 6U into two 3U
- No additional rear extrusions needed
- Includes EMC screening member
- IEEE1101.10 and IEC 60297-3 variants

Contents of kit

Qty/Description	Material/Finish
2 Front extrusions	Al extrusion, Clear chromate
1 Screening member	Al extrusion, Clear chromate
2 tapped strips	Steel, Zinc plate and colour passivate
Fixings	

Ordering information

Nominal width	Extrusion type	Order code
84hp	IEEE1101.10	959-278050B
84hp	IEC 60297-3	959-262270B

Screening member

DIVIDER KIT, MIXED HEIGHTS

- Permits integration of single and double Eurocards
- No additional rear extrusions required
- Includes EMC screening member
- IEC60297-3 with IEEE1101.10 front panel compatibility
- Full IEEE1101.10 compatibility

These units can be assembled with the 3U section either to the left or the right. The divider plate accepts EMC fingers compatible with IEEE1101.10 front panel geometry.

The 6U section is reduced by 2hp (eg 42hp 3U section leaves 40hp of 6U)

Contents of kit

Qty/Description	Material/Finish
2 extrusions	Al extrusion,Clear chromate
1 divider plate assembly	Al sheet/al extrusion Clear chromate
2 vertical EMC finger strips	Stainless steel
1 location moulding	
1 screening member	Al extrusion, Clear chromate
2 tapped strips	Steel, Zinc and colour passivate
Fixings and assembly instructions	

Ordering information

Nominal width of 3U section	Front extrusion type	Order code
24hp	IEC 60297-3	959-262268L
42hp	IEC 60297-3	959-262269J
24hp	IEEE1101.10	959-278052J
42hp	IEEE1101.10	959-278054E

Divider kit, mixed heights

Divider plate 6U

VERO
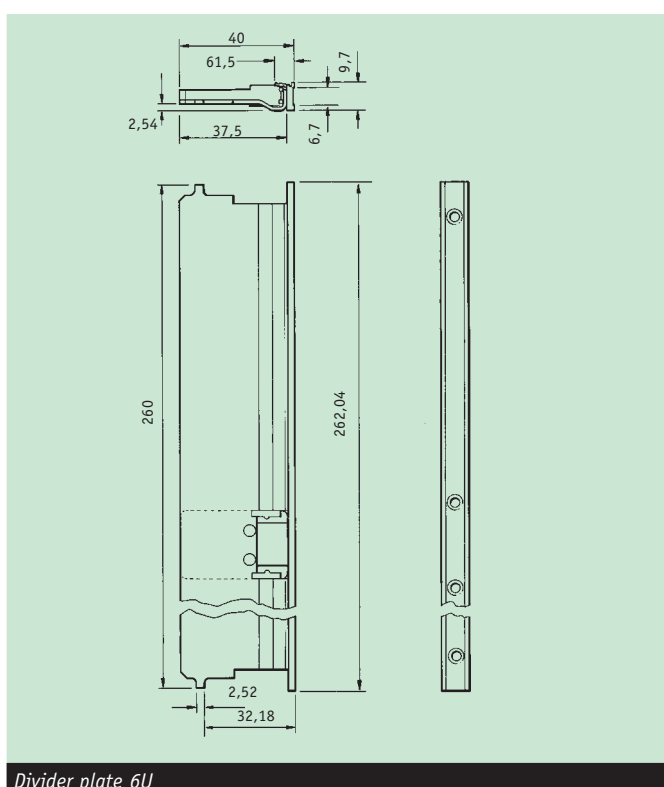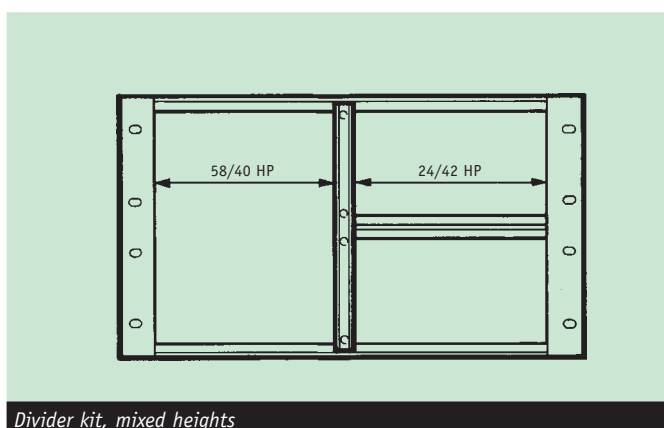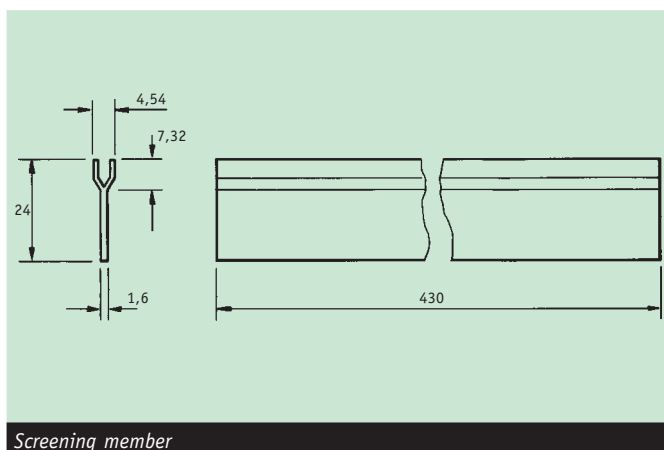
KM6-RF Subrack - PCB Guides

- IEC60297-3 and IEEE1101.10 compliant
- Bolt down facility for added strength
- 100,160 and 220 single part, 1,6mm thickness
- Three part version for other lengths
- UL94-V1 and V0 versions
- Red 160 version for CompactPCI™ system slots
- PCB grounding clip IEEE1101.10

Contents of kit

Item/Description	Material/Finish
	UL94 flammability rating / yellow cardno.
Guides, Pack of 10	Luranyl 2452/1, green V1 / E41871
	Noryl HF185, lt grey V0 / E45329(R)
	Noryl HF185, red V0 / E45329(R)

KM6-RF Subrack - PCB Guides

Ordering information

UL94-	Colour	PCB length	Order code
V1	Green	100mm	**950-242850B**
V1	Green	160mm	**950-232662J**
V1	Green	220mm	**950-232663G**
V0	Light grey	160mm	**950-277491E**
V0	Light grey	220mm	**950-277494K**
V0	Red	160mm	**950-277496F**
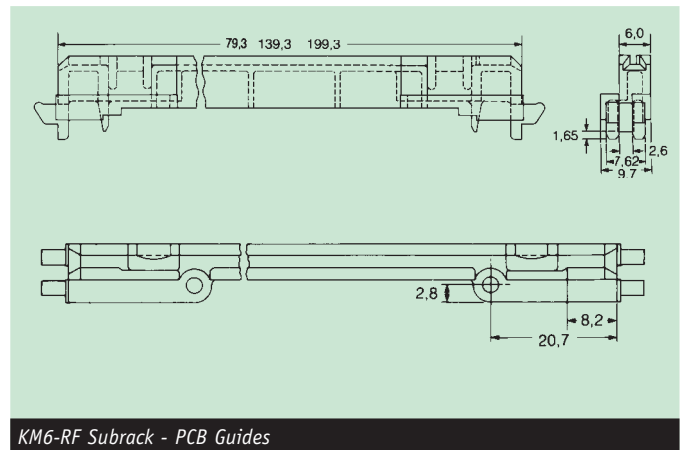
PCB GROUNDING CLIPS

- Electrostatic Protection
- According to IEEE1101.10
- No screws required

This grounding clip can be inserted into the front or rear of 1,6mm pcb guides. Contacts on the clip provide electrical continuity between a suitably equipped Eurocard and, via a spring under the clip, standard front extrusions. Pcb's can, therefore, be grounded before the engagement of connectors. The clip fits into a 'pocket' in the guide and requires no screw fixings to maintain contact.
The clip has been tested to IEC 950: 1986 section 2.5.11. In testing, the clip reached a steady temperature of 76 degrees C at 15A, with a resistance path of 7 mOhms. A typical electrostatic discharge would be 12A for a period of 1 microsecond.

It should be noted that the clip is designed to provide a ground path for electrostatic charges, not for a power short circuit or as a ground rail.

PCB GROUNDING CLIP

PCB Grounding clip

Contents of kit

Item/Description	Material/Finish
10 clips	0,15mm spring steel, zinc plated
Assembly instructions	

Ordering information

	Order code
PCB grounding clip	**950-251366F**
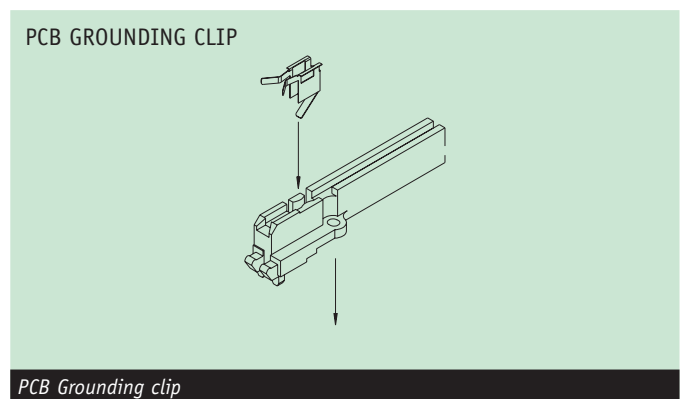
Order Separately
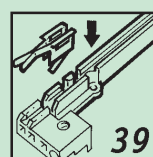
39 Guides, ESD clips, coding
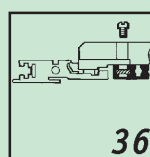
36 Heavy duty upgrade

KM6-RF Subrack - PCB Guides

CODING AND GROUNDING DEVICE ACCORDING TO IEEE1101.10 & 11

- Adds to front of standard guides
- Separate ESD spring
- Screw secured die casting for maximum conductivity to frame ground

Standard guides can be converted to 1101.10 specification by the addition of a die cast, frame mounted coding device. The unit can be fitted retrospectively and is positively secured in position by means of a clamping screw.

For grounding the pre-location/ ESD pin of an injector/extractor, a separate spring is available. The design of the spring and the use of a die casting for its housing ensures maximum current carrying capability. In testing, the assembly satisfactorily passed 25A for 2 minutes without damage.

NB Under some circumstances, the use of these features as an electrical safety ground may not fully comply with the requirements of EN60950

Coding keys should be ordered separately

Coding and grounding device

Contents of kit

Item/Description	Material/Finish
Coding device option	
10 die castings	Zinc alloy BS1004, Bright nickel plate
Clamp screws	
ESD contact option	
10 springs	Stainless steel
Coding key option	
100 keys	

Ordering information

Description	Order code
Frame mounted coding device, (pk10) D.E.F.	959-277039F
Frame mounted coding device, (pk10) A.B.C.	959-277040K
ESD spring, pk10	959-277034E
Coding keys (pk 100)	959-277032J
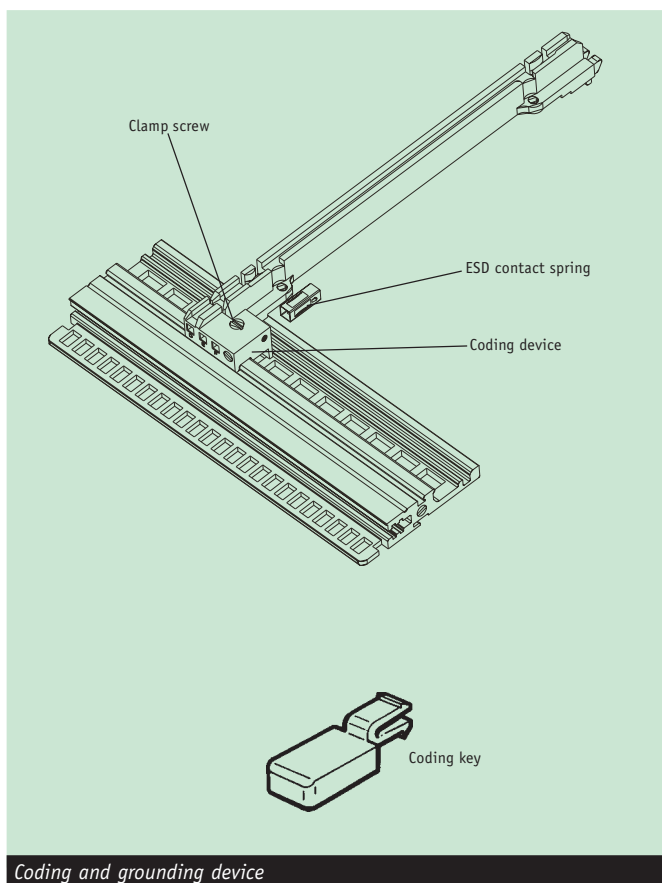
KM6-RF subrack accessories

PANEL MOUNTING KIT
KM6-EC COMPATIBLE

- 3U and 6U x 84hp & 42hp
- Conceals panel cutouts for good aesthetics

Commonly required in machine tool, security and process control applications, these kits enable the user to mount standard 19", or half 19", subracks into a panel, rather than normal 19" racks.

The top and bottom trim extrusions are attached to the subrack. By fitting the fixing plates behind the panel the subrack can be retained via its normal fixing holes. A suitable panel cutout is therefore masked by the trim mounting angles.

Panel mounting kit

Contents of kit

Key/Qty/Description	Material/Finish
2 trim extrusions	Etched and anodised
4 trim kit brackets	Raw aluminium
2 fixing plates	Unfinished steel
All fixings	
4 (3U) or (8U) chrome mounting screws and plastic cup washers	

Ordering information

Description	Order code
Subrack panel mounting kit 3U x 84hp	**950-262382H**
Subrack panel mounting kit 6U x 84hp	**950-262383F**
Subrack panel mounting kit 3U x 42hp	**950-267391D**
Subrack panel mounting kit 6U x 42hp	**950-267392B**

PANEL CUTOUT DETAILS
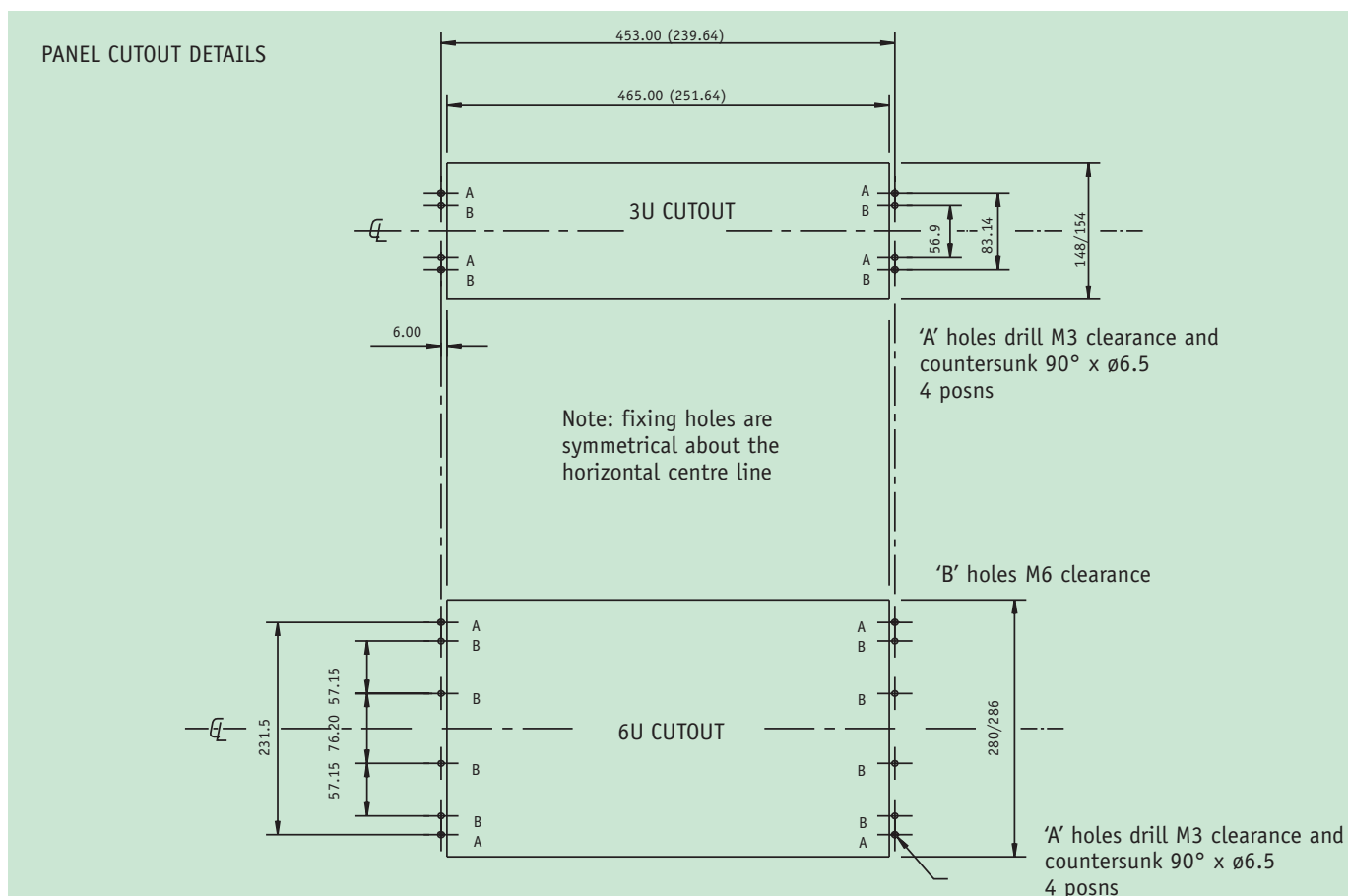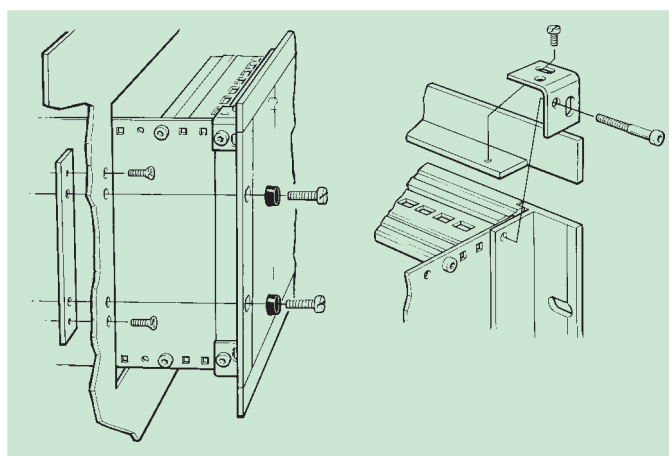
453.00 (239.64)

465.00 (251.64)

3U CUTOUT

56.9

83.14

148/154

6.00

'A' holes drill M3 clearance and countersunk 90° x ø6.5
4 posns

Note: fixing holes are symmetrical about the horizontal centre line

'B' holes M6 clearance

231.5

57.15 57.15

76.20

57.15

6U CUTOUT

280/286

'A' holes drill M3 clearance and countersunk 90° x ø6.5
4 posns

KM6-RF Front Panels - *IEEE1101.10* and *.11*

- Latest industry standard front panel geometry
- Stainless steel EMC fingers
- Various handle options
- Plain blanking versions
- 4,5,6,8,10 and 12hp available
- Clear chromate finish or with polyester overlays
- Full custom service available
- Supplied in component or kit form

This range of front panels complies with the latest IEEE1101.10 geometry

Versions are available for a range of handle options and should be selected from the accompanying tables. See next page.

KM6-RF Front Panels - IEEE1101.10 and .11

KM6-RF Front panels
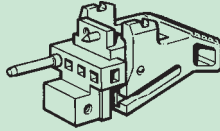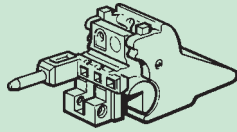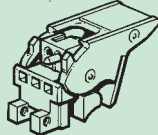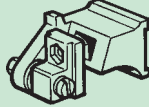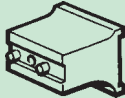
OPTION

This table is intended to help you select the most suitable combination of handles and front panels.

Key

A	Pre-location pin
B	Captive screw
C	Coding
D	Card mounting
E	ESD/alignment pin
F	Front panel with EMC fingers

Stylised picture only
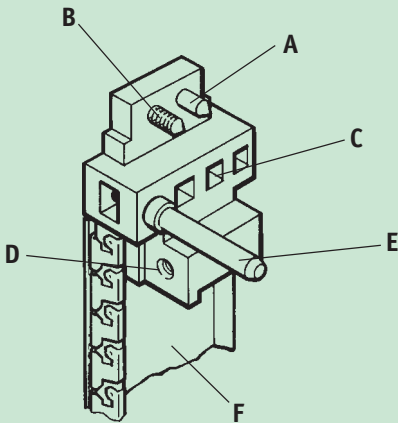
Feature	A	B	C	D	E	F	Page nN.
Handle type							
	N	N	N	N	N	Y	43
	Y	Y	Y	Y	Y	N	44
	Y	Y	Y	Y	N	N	44
	N	Y	Y	Y	Y	N	44
	N	Y	Y	Y	N	Y	47
'LC' InjectNr/extractNr	Y	Y	Y	Y	N	Y	47
	N	N	N	N	N	Y	43
	N	Y	Y	Y	Y	N	45
	Y	Y	N	Y	N	N	45
	N	Y	Y	Y	Y	Y	48
'MC' InjectNr/extractNr	Y	Y	N	Y	N	Y	48
	N	N	N	N	N	Y	43
	Y	Y	N	Y	N	N	46
'K' InjectNr/extractNr	Y	Y	N	Y	N	Y	49
EjectNr Nnly, IEC	N	Y	N	N	Y	N	52
Fixed handle	N	Y	N	N	N	Y	53
Blank, nN handle facility	N	N	N	N	N	Y	51

KM6-RF Front panels - *IEEE1101.10* and *.11* compliant

FRONT PANEL ONLY

VERO's latest range of panels are manufactured from extruded aluminium and can be supplied in clear chromate form or with a light grey polyester overlay. These panels are cut out to accept a number of injector/ extractor variants which should be ordered separately. The injector/ extractors simply and quickly push fit and are retained by means of spring sprags, no screw being necessary. 3U panels accept an injector/ extractor at the bottom only. A separate card mounting bracket (plastic or metal) is required for the top position.

A limited range of the most popular sizes is available in complete kit form for ease of ordering.

Contents of kit

Item/Description	Material/Finish
1 front panel	Aluminium extrusion ,Clear chromate
EMC finger strip (fitted)	Stainless steel
Overlay (if fitted)	0,2mm polyester Light grey

Ordering information

Clear chromate finish

H x W	Clear chromate finish	Polyester overlay RAL 7035
3U 4hp	951-263840B	951-263852F
3U 5hp	951-263841L	951-263853D
3U 6hp	951-263842J	951-263854B
3U 8hp	951-263843G	951-263855L
3U 10hp	951-263844E	951-263856J
3U 12hp	951-263845C	951-263857G
6U 4hp	951-263846A	951-263858E
6U 5hp	951-263847K	951-263859C
6U 6hp	951-263848H	951-263860G
6U 8hp	951-263849F	951-263861E
6U 10hp	951-263850K	951-263862C
6U 12hp	951-263851H	951-263863A
9U 4hp	951-100102H	951-100103E

3U

HP

114,3

128,5

6U

HP

20

233,45

281,85
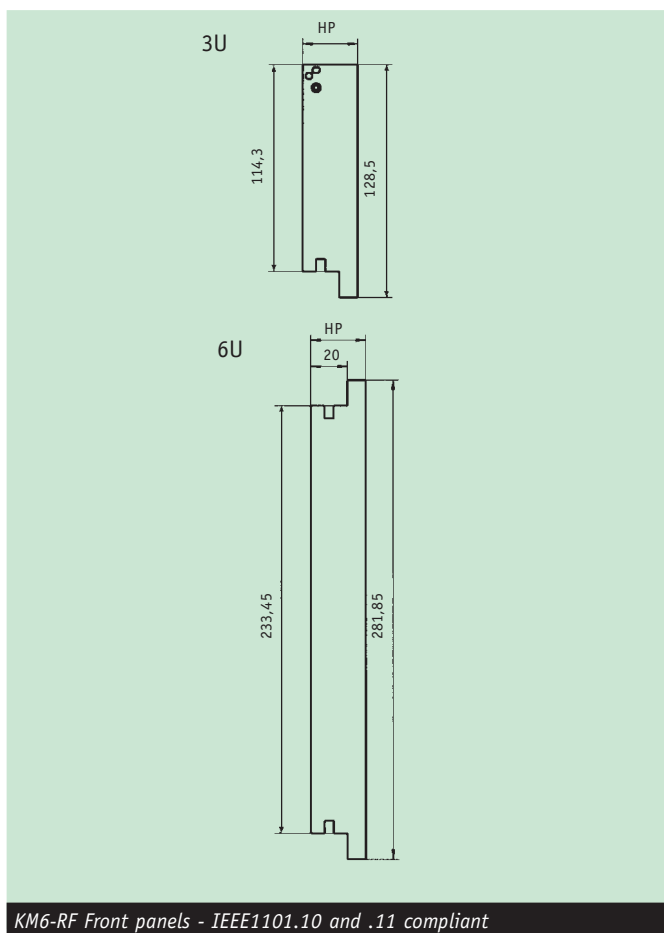
KM6-RF Front panels - IEEE1101.10 and .11 compliant

Order Separately

42	50	34	50
Injector/ extractor handles	Front panel pre-location	Seals to front panel	Front panel screws & inserts

|	
50	115
Coding pins	Additional card mounting bracket
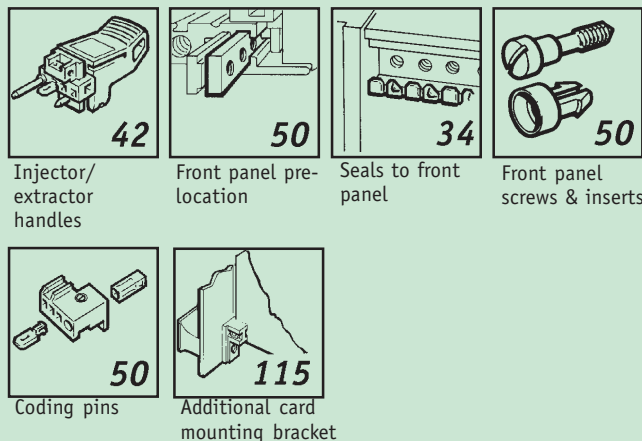
KM6-RF Front Panels - Injector/extractor handles

- Three versions
- IEEE1101.10 and .11
- Version with IEC297-3 ejection compatibility
- Colour options
- Various configurations for coding, pre-location and ESD protection

TYPE 'LC' HANDLE ONLY

- IEEE1101.10 compliant
- Long throw for Metric connectors (5mm)
- Rugged version
- Ident location area
- Ganging option for use on multiple card plug-in units
- Pre-release click stop for Hot swap applications
- Push fit onto panel
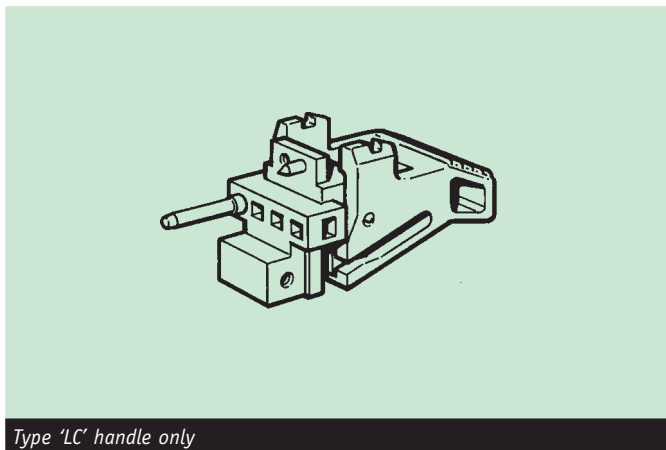
Type 'LC' handle only

This handle has the following possibilities:

With or without a front extrusion location pin, to maintain accurate location against the sideways pressure of EMC fingers.
With or without the ESD/ location pin. The ESD/location pin determines its position in the frame (ie top or bottom)
In black or light grey RAL7035

Coding keys should be ordered separately

Contents of kit

Item/Description	Material/Finish
Injector/ extractor (pre-assembled)	
1 handle moulding	Glass filled polycarbonate UL94-VO, Black or light grey RAL 7035
1 die cast bracket	Zinc Bright nickel plate
1 return spring	0,3mm stainless steel
1 ESD pin (optional)	Stainless steel
1 front fixing screw	
Assembly instructions	

Ordering information

Colour	ESD/location Pin	Extrusion pre-location pin	Order Code
Black, top C.B.A.	Yes	Yes	**959-278296C**
Black, bottom F.E.D.	Yes	Yes	**959-278295E**
Black, top or bottom	No	Yes	**959-277048E**
Black, top C.B.A.	Yes	No	**959-278298K**
Black, bottom F.E.D.	Yes	No	**959-278297A**
Black, top and bottom	No	No	**959-277053A**
Light grey, top C.B.A.	Yes	Yes	**959-278300E**
Light grey, bottom F.E.D.	Yes	Yes	**959-278299H**
Light grey, top and bottom	No	Yes	**959-277049C**
Light grey, top C.B.A.	Yes	No	**959-278302A**
Light grey, bottom F.E.D.	Yes	No	**959-278301C**
Light grey, top & bottom	No	No	**959-277060D**

C.B.A. =
F.E.D.=

Order Separately

41 Front panel

50 Front panel pre-location

34 Seals to front panel

50 Front panel screws & inserts

50 Coding key, grounding

115 Additional card mounting brackets
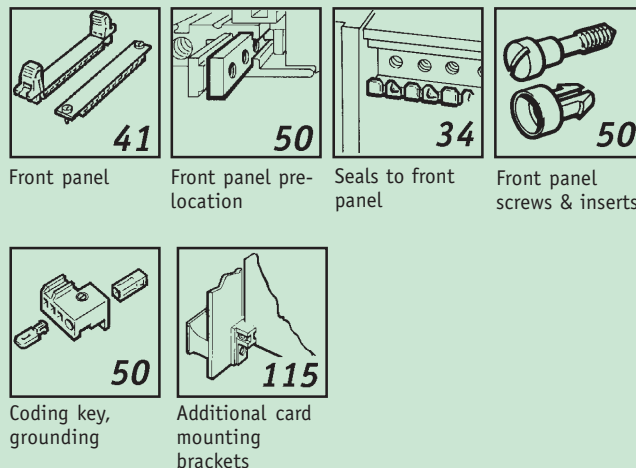
KM6-RF Front Panel - Injector/ extractor handles

TYPE 'MC' HANDLE ONLY

- IEEE1101.10 compliant
- Non coded version
- Self locking version-needs no screw retention
- Lock/unlock component in contrasting colour
- Ident location area
- Push fit onto front panel

This handle has the following possibilities:

Black or light grey (RAL 7035) body with
Jade Green sliding lock component.

Top or bottom. This handle is handed by the
ESD pin and coding pocket identification.

Without coding and ESD
This version has no coding or ESD pin but includes the extrusion
pre-location facility to prevent sideways movement of the front
panel against the pressure exerted by the fingers. It is not handed.

Type 'MC' handle only

Contents of kit

Item/Description	Material/Finish
1 Handle moulding, pre-assembled	
1 Lock component, pre-assembled	
1 Die cast bracket, pre-assembled	Zinc, Bright
1 Return spring, pre-assembled	
1 Front fixing screw	
Assembly instructions	

Ordering information

Handle colour		IEEE/Non coded	Order Code
Black/green	Top CBA	IEEE	**951-263988C**
Black/green	Bottom FED	IEEE	**951-263987E**
Light grey/green	Top CBA	IEEE	**951-263986G**
Light grey/green	Bottom FED	IEEE	**951-263985J**
Black/green	Top and bottom	Non coded	**951-263990E**
Light grey/green	Top and bottom	Non coded	**951-263989A**
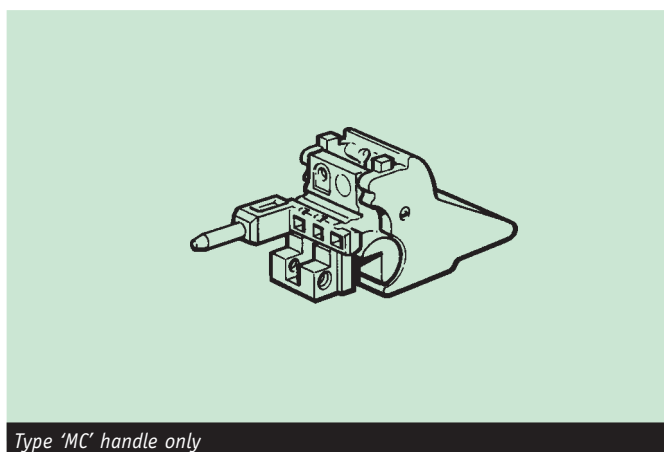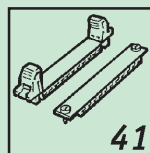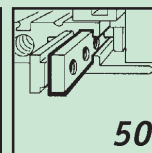
Order Separately

41
Front panel

50
Front panel pre-location

34
Seals to front panel

50
Coding key, grounding

115
Additional card mounting brackets

VERO
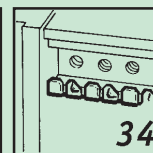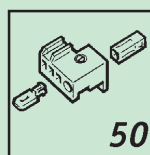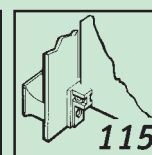
KM6-RF Front Panel - Injector/extractor handles

TYPE 'K' HANDLE ONLY

- Injector/ extractor for IEEE1101.10 front extrusion
- Automatically assumes correct position during insertion
- Backwards compatibility as an ejector to IEC60297-3
- Push fit onto front panel
- Ident location area

This handle provides injection and extraction according to IEEE1101.10 but **does not offer the coding or ESD compatibility called for in .10 and .11;** it is designed to eject against the face of the front extrusion, and will therefore operate as an ejector in an IEC 60297-3 situation. The Type K is not handed. The bracket includes a front extrusion location pin, to maintain accurate location against the sideways pressure of EMC fingers.

Type 'K' handle only

Contents of kit

Item/Description	Material/Finish
1 Moulded handle (pre-assembled)	Black
1 die cast bracket (pre-assembled)	
1 return spring (pre-assembled)	
1 front panel screw	
Assembly instructions	

Ordering information

Description	Order Code
Extrusion pre-location pin	951-263868B
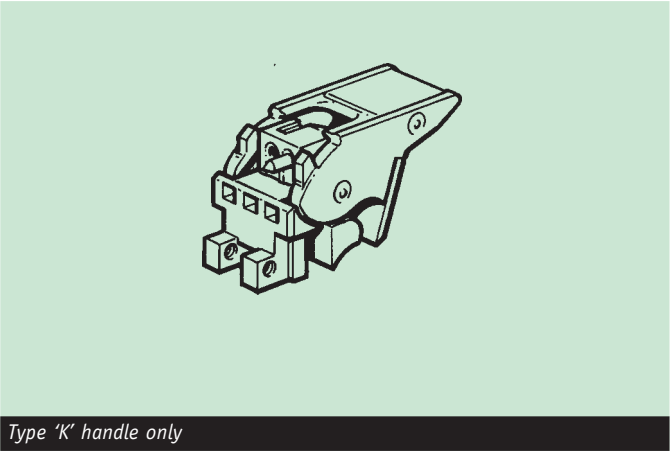
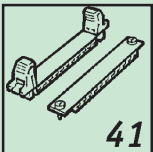**Order Separately**
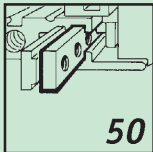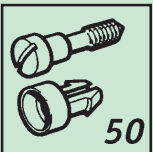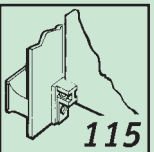
50	50	41	115
Front panel pre-location	Front panel screws & inserts	Front panel	Additional card mounting brackets

KM6-RF Front Panel - Injector/ extractor handles

COMPLETE KIT OPTIONS WITH TYPE 'LC' HANDLE

■ Clear chromate finish
■ One order code only
■ With or without ESD

These kits include the appropriate front panels and injector/ extractor handles. The 3U versions require a card mounting bracket, either plastic or metal, for the top of the panel.

Functions, materials and finishes are as described in the previous pages.

Contents of kit

Item/Description	Material/Finish
Handle assembly (1 on 3U, 2 on 6 and 9U)	
Front panel with EMC fingers (fitted)	Chromate
Fixings	

Ordering information
With extrusion pre-location but no ESD pin

Nominal Height/Width	Order code Black	Order code Light Grey
3U/4HP	951-100172J	951-100132K
3U/8HP	951-100173G	951-100135D
6U/4HP	951-100174E	951-100138J
6U/8HP	951-100175C	951-100141J
9U/4HP	-	951-100144C

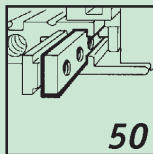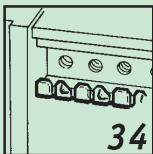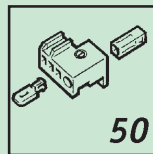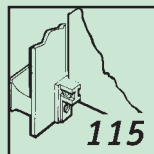### Ordering information
With ESD pin, no extrusion pre-location

Nominal Height/Width	Order code Black	Order code Light Grey
3U/4HP	951-100176A	951-100104D
3U/8HP	951-100177K	951-100107J
6U/4HP	951-100178H	951-100110J
6U/8HP	951-100179F	951-100113C
9U/4HP	-	951-100116H

Complete kit options with Type 'LC' handle

Order Separately

50	34	50	115
Front panel pre-location	Seals to front panel	Coding keys/ grounding	Additional card mounting brackets

VERO

KM6-RF Front Panel - Injector/ extractor handles

COMPLETE KIT OPTIONS WITH TYPE 'MC' HANDLE

- Clear chromate finish
- One order code needed only
- Two versions of handles

These kits include the appropriate front panels and injector/ extractor handles. 3U versions require a card mounting bracket, plastic or metal, for the top of the panel.

Functions, materials and finishes are as described in the previous pages.

Ordering information
No coding or ESD pin, with extrusion pre-location

Nominal Height/Width	Order code Black/green	Order code Light Grey/green
3U/4HP	**951-100164H**	**951-100076E**
3U/8HP	**951-100165F**	**951-100079K**
6U/4HP	**951-100166D**	**951-100082K**
6U/8HP	**951-100167B**	**951-100085D**

Ordering information
With ESD pin and coding, no extrusion pre-location

Nominal Height/Width	Order code Black/green	Order code Light Grey/green
3U/4HP	**951-100168L**	**951-100050A**
3U/8HP	**951-100169J**	**951-100053F**
6U/4HP	**951-100170B**	**951-100056L**
6U/8HP	**951-100171L**	**951-100059E**
9U/4HP	**951-100088J**	**951-100062E**
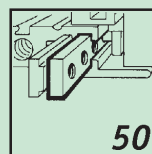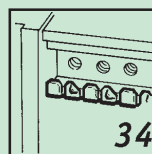
KM6-RF front panel injector/extractor handles

Order Separately

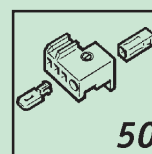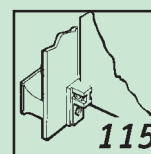|			
50	*34*	*50*	*115*
Front panel pre-location	Seals to front panel	Coding keys/ grounding	Additional card mounting brackets

KM6-RF Front Panel - Injector/ extractor handles

COMPLETE KIT OPTIONS WITH TYPE 'K' HANDLE

■ Clear chromate finish
■ One order code needed only

These kits include the appropriate front panels and injector/ extractor handles. 3U versions require a card mounting bracket, plastic or metal, for the top of the panel.

Functions, materials and finishes are as described in the previous pages.

Contents of kit

Item/Description	Material/Finish
Handle assembly (1 on 3U, 2 on 6U)	
Front panel with EMC fingers (fitted)	Chromate
Fixings	

This version has no coding but offers pre-location via a pin in the die cast bracket which locates into a pierced strip in the front extrusion. The handle is black.
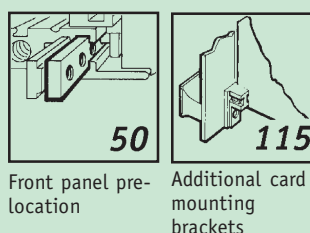
Ordering information

No ESD or coding, with extrusion pre-location

Nominal Height/ width	Order code
3U/ 4HP	951-263879H
3U/ 8HP	951-263882H
6U/ 4HP	951-263885B
6U/ 8HP	951-263888G

Complete kit options with Type 'K' handle

Order Separately

50

Front panel pre-location

115

Additional card mounting brackets

VERO

# KM6-RF Injector/ extractor accessories

CODING FOR TYPES 'LC' AND 'MC'

The use of coding keys in the handle bracket and the mating frame mounted part, according to IEEE 1101.10, permits up to 4096 possible unique combinations.
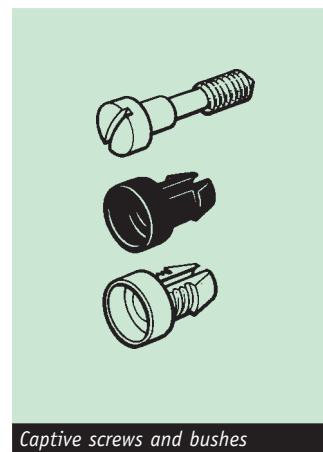
FRONT PANEL CAPTIVE SCREWS AND BUSHES

■ Positive retention
■ Plastic or metal bushes

For panel only situation where the width of the panel or type of panel requires additional fixing (Injector/extractors are supplied with screws) and complete panel kits.
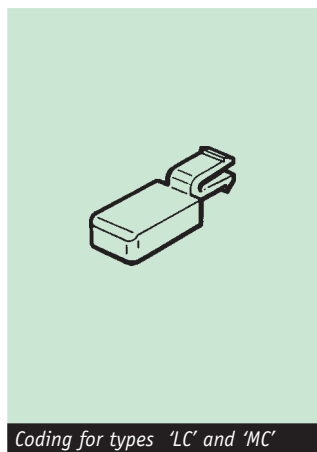
Coding for types 'LC' and 'MC'

Captive screws and bushes

EXTRUSION PRE-LOCATION STRIP
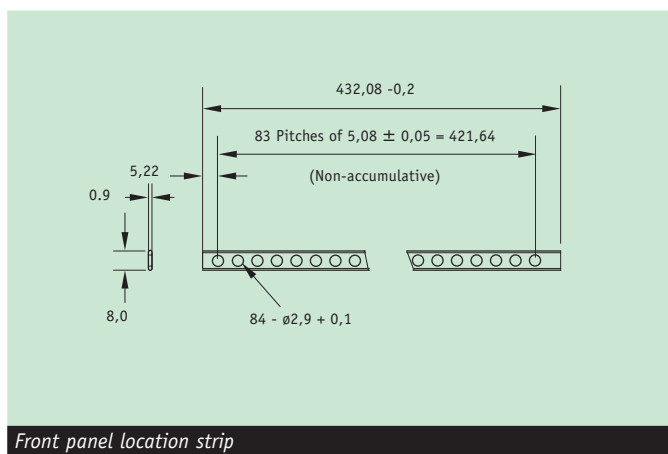
■ Positive sideways location

This strip fits in front of the tapped strip in KM6-RF front extrusion. It permits the use of a tapered pin on the plug-in unit and provides a means of preventing sideways displacement caused by the pressure of EMC fingers.
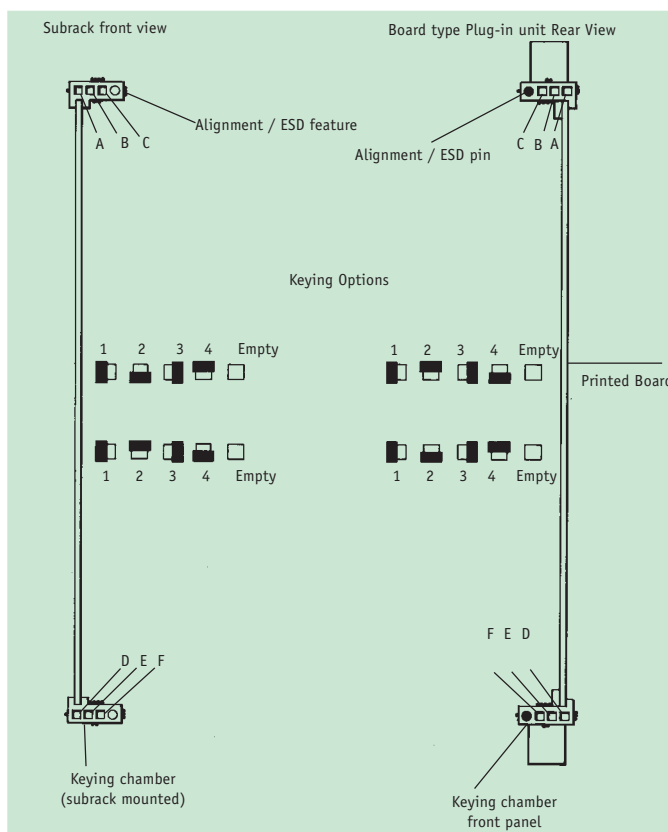
Contents of kit

Item/Description	Material/Finish
Coding keys	
100 keys	Plastic
Front panel screws	
100 screws M2,5 x 11	
100 bushes	Plastic black
100 bushes	Metal
10 extrusion pre-location strip	0,5mm stainless steel

432,08 -0,2
83 Pitches of 5,08 ± 0,05 = 421,64
(Non-accumulative)
5,22
0,9
8,0
84 - ø2,9 + 0,1

Front panel location strip

Ordering information

Description	Order code
Coding keys	959-277031L
Front panel screws	953-236510K
Front panel bush, plastic	953-236507K
Front panel bush, conductive	953-236506A
Pre-location strip	959-278684E

Subrack front view

Board type Plug-in unit Rear View

Alignment / ESD feature

A B C

Alignment / ESD pin

C B A

Keying Options

1 2 3 4 Empty   1 2 3 4 Empty

Printed Board

1 2 3 4 Empty   1 2 3 4 Empty

F E D

D E F

Keying chamber
(subrack mounted)

Keying chamber
front panel

KM6-RF Blanking front panels - *IEEE1101.10* and *.11*

- Latest industry standard front panel geometry
- Stainless steel fingers
- Clear chromate finish or with polyester overlays
- Full custom service available
- With or without pre-location pin

These panels can be used to fill unused slots or where no handle is necessary. The versions with pre-location pin interface with a pierced strip in the front extrusion to prevent sideways movement due to spring pressure.

Screws and retaining inserts (metal or plastic) should be ordered separately - supplied in packs of 100

Contents of kit

| Item/Description	Material/Finish
1 front panel	Al extrusion Clear chromate
EMC finger strip (fitted)	Stainless steel
Overlay (if fitted)	0,2mm polyester, Light grey RAL7035

Ordering information

Without pre-location pin

Nominal		Chromate finish	With overlay
Height	Width	Order Code	Order Code
3U	4HP	951-263991C	951-100000E
3U	5HP	951-263993K	951-100002A
3U	6HP	951-263995F	951-100004H
3U	8HP	951-263997B	951-100006D
3U	10HP	951-263999J	951-100008L
3U	12HP	951-264001F	951-100010B
6U	4HP	951-264003B	951-100012J
6U	5HP	951-264005J	951-100014E
6U	6HP	951-264007E	951-100016A
6U	8HP	951-264009A	951-100018H
6U	10HP	951-264011C	951-100020K
6U	12HP	951-264013K	951-100022F
9U	4HP	951-263974C	951-100162A

With pre-location pin

3U	4HP	951-100024B	951-100038B
3U	5HP	951-100026J	951-100040D
3U	6HP	951-100028E	951-100042L
3U	8HP	951-100181H	951-100187G
3U	10HP	951-100183D	951-100189C
3U	12HP	951-100185L	951-100191E
6U	4HP	951-100030G	951-100044G
6U	5HP	951-100032C	951-100046C
6U	6HP	951-100034K	951-100048K
6U	8HP	951-100193A	951-100199L
6U	10HP	951-100195H	951-100201F
6U	12HP	951-100197B	951-100203B
9U	4HP	951-100036F	951-100205J
M2,5x 11 captive screws	pk 100	953-236510K	
Metal retaining inserts	pk 100	953-236506A	
Plastic retaining inserts	pk 100	953-236507K	

3U Blanking front

2,5
15
98,5
0,3
4
ø3,6
3,3
122,5 ± 0,05
128,5 ± 0,1
74,2 ± 0,05
X
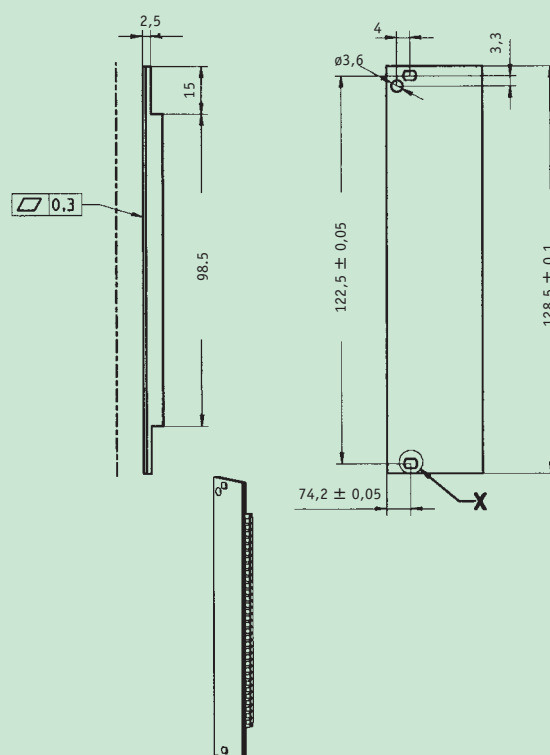
KM6-RF Blanking front panels - IEEE1101.10 and .11

Order Separately

50
Front panel pre-location

34
Seals to front panel

50
Front panel screws & inserts
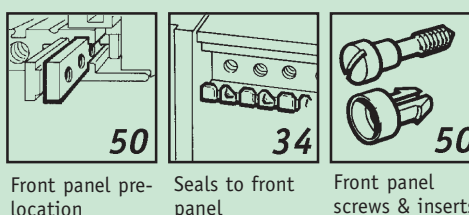
KM6-RF EMC front panels - with ejector handles

For use in situations where a high level of screening is required these extruded front panels are supplied complete with stainless steel fingers to make contact with adjacent panels and with the KM6-RF mounting angles.

- Good mechanical strength and high level of electromagnetic screening.
- Ejector handle provides assistance in removal of plug-in units with high retention force connectors
- Latest geometry to IEEE1101.10 minimises intrusion into the solder area of Eurocards
- Compatible with all KM6-RF and IEC 297-3 subrack front extrusions
- Available with chromate finish front face or with polyester overlay in RAL 7035 light grey

This range of extruded front panels meets the geometry associated with the latest mechanical standard, IEEE1101.10, having an overall depth of 6,3mm. This minimises the interference of the left side with the solder side of Eurocards. The stainless steel finger strip which is fitted to the right side interacts with neighbouring panels that have a similar geometry. At the subrack interface, it is necessary to have matching features in order to maintain the EMC performance across the front.
The kit is supplied complete with die cast card mounting brackets and metal front panel screw retaining bushes for maximum conductivity to the subrack.

KM6-RF EMC front panels - with ejector handles

Contents of kit

Item/Description	Material /Finish
1 extruded front panel	Aluminium, all chromate finish or with front overlay
1 set contact fingers	Stainless steel
1 overlay (optional)	0,2mm polyester, RAL 7035 light grey
Handles	
(1 on 3U, 2 on 6U)	Makrolon 9425 back
Handle ident labels	
(1 per handle)	1,5mm aluminium, anodised or 1,25mm with overlay
2 Card mounting brackets	Zinc die cast
2 Retaining screws M2,5	Steel, chromed
2 Bushes	Metal, chromed
All fixings	

Ordering information

Width in HP	Width A in mm	Vertical grain Height	RF front panel chromate finish Order code	RF front panel with overlay Order code
4	19,92	3U	951-263100J	951-263750C
6	30.08	3U	951-263106H	951-263751A
4	19,92	6U	951-263101G	951-263771F
6	30.08	6U	951-263107F	951-263772D
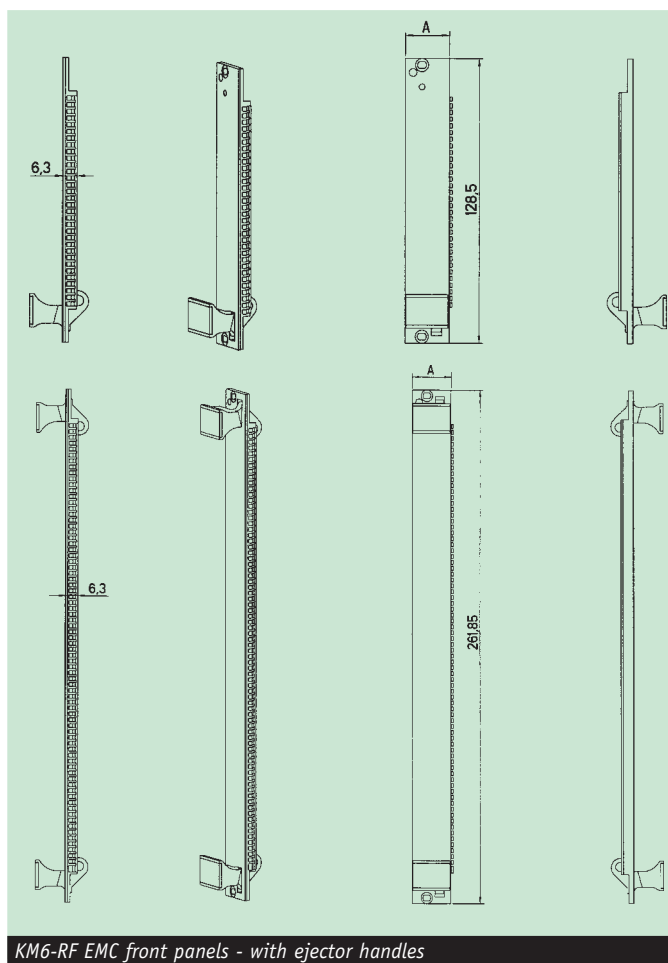
KM6-RF front panels - fixed handles

- Latest industry standard front panel geometry
- Stainless steel fingers
- Clear chromate finish or with polyester overlays
- Full custom service available

Providing backwards compatibility with existing front panels or where the use of injector/ extractor handles is not necessary or desirable.

The channel section provides good mechanical strength. The inserts in these kits are metal for maximum conductivity. Up to 8hp wide, panels have two fixing screws, 10 and 12hp have four. We offer a comprehensive customising service in front panels and overlays.


KM6-RF Front Panels - fixed handles

Contents of kit

Item/Description	Material/Finish
1 front panel	Al extrusion, Clear chromate
1 overlay (where fitted)	0,2mm polyester, Light grey RAL7035
1 EMC finger strip	Stainless steel
1(3U) or 2 (6U) handles	Luranyl 2452/1 or equivalent Black
1 (3U) or 2 (6U) handle ident	Al alloy 1,5mm , Clear anodised
	or 1,25mm (with overlay)
Fixings and assembly instructions	

Ordering information

Nominal dimensions		Order Code	Order Code
Height	Width	Chromate finish	With overlay
3U	4hp	**951-263098C**	**951-263199H**
3U	5hp	**951-263102E**	**951-263200E**
3U	6hp	**951-263104A**	**951-263201C**
3U	8hp	**951-263108D**	**951-263202A**
3U	10hp	**951-263794E**	**951-263796A**
3U	12hp	**951-263110F**	**951-263203K**
6U	4hp	**951-263099A**	**951-263219F**
6U	5hp	**951-263103C**	**951-263220K**
6U	6hp	**951-263105K**	**951-263221H**
6U	8hp	**951-263109B**	**951-263222F**
6U	10hp	**951-263795C**	**951-263797K**
6U	12hp	**951-263111D**	**951-263223D**

Order Separately

34

Seals to front panels

115

Card mounting bracket
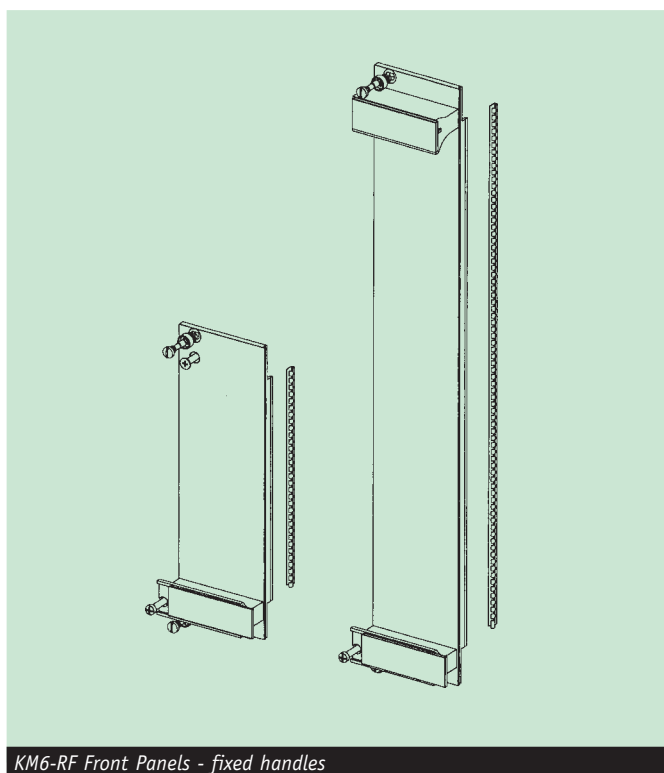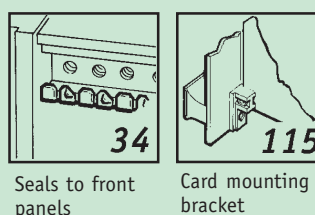
KM6-RF plug-in units

FOR USE WITH 100MM GUIDES

- 160mm Eurocard compatible
- Simple assembly
- Good electromagnetic shielding within systems
- IEEE1101.10 front panel geometry
- Excellent mechanical strength for mounting and protection of components
- Clear chromate finish front panel or with light grey overlay
- Comprehensive customising service available

Good design of the components of these plug-in units ensures excellent EMC performance between neighbouring units. The IEEE1101.10 front panel permits integration into screened subracks.

Eurocard PCBs occupy slot 3 from the left hand nominal pitchline and are retained in position by means of PCB/connector brackets. The extrusion has tapped strip carrying features, facilitating the mounting of non Eurocard components.

Brackets and tapped strips should be ordered separately (see table)

KM6-RF plug-in units

Contents of kit

| Item/Description	Material/Finish
Plug-in units	
1 front panel	Al extrusion, Clear chromate
1 overlay (if fitted)	0,2mm polyester, Light grey RAL7035
1 handle	Luranyl 2452/1 or equivalent Black
1 handle ident	1,5mm al alloy, Clear anodised
	or 1,25mm al alloy, With overlay
Fixings and assembly instructions	
Two rail versions:	
1 side extrusion	Al extrusion, Natural
1 wrap-round right cover	1mm steel, Pre-galvanised
Four-rail version:	
2 side extrusions	Al alloy, Natural
2 ventilated top/bottom covers	1mm steel, Pre-galvanised

Ordering information

| Nominal dimensions		Available PCB	**Order code**	**Order code**
Height	Width	component height	Chromate finish	With overlay
2 rail 3U	6hp	12,6mm	**951-263131J**	**951-263132G**
2 rail 3U	8hp	22,8mm	**951-263133E**	**951-263134C**
4 rail 3U	12hp	60,56mm	**951-263135A**	**951-263136K**
PCB/connector brackets (pk 5prs plus fixings)			-	**951-263755D**
Tapped strip (pk 10)			-	**951-263756B**

Order Separately

34
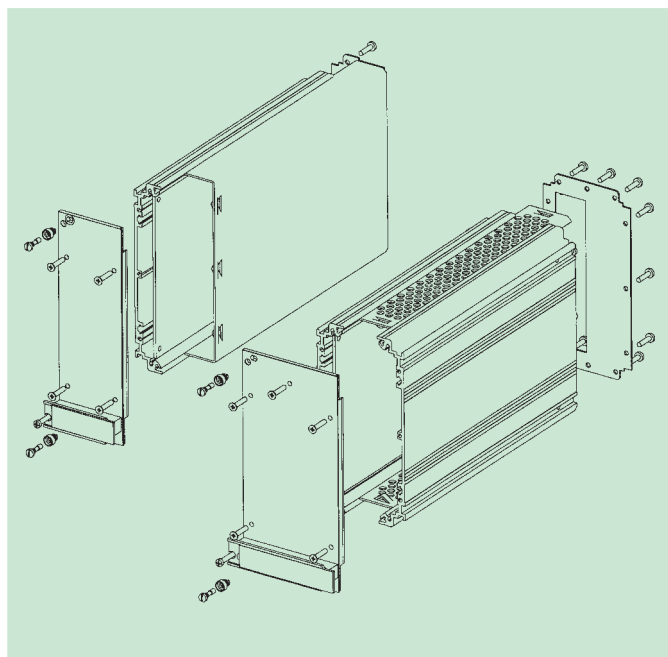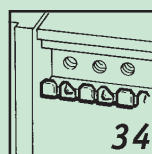
Seals to front
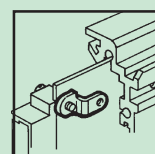
Pcb/connector mounting brackets

KM6-RF front panel customising service

■ Special punching
■ Anodising
■ Chromating
■ Painting
■ Screen printing, surface and sub-surface
■ Cut-outs
■ Milled recesses
■ Overlays, with or without windows
■ High quality appearance

We have many years' experience in the production of high quality customised front panels in many forms and finishes. If you would like a quotation, please contact our Sales Office or local agent.


KM6-RF front panel customising service

KM6-RF subrack components

INTRODUCTION

KM6-RF sets out to address the IEEE1101.10 and 11 specifications whilst providing a high level of EMC shielding performance. A wide variety of complete kits are available, but it is also possible to order in individual piece parts for situations where those kits do not meet your specific requirements.
This section shows details at piece part level, including some dimensional information. In general, components are parametic in that it is possible to calculate dimensions of other sizes from a basic standard set of dimensions. For instance, a nominally 84hp extrusion has a standard length of 431,12mm. It can be calculated that a 60hp version is 431,12 - (24 x 5,08mm) = 431,12 - 121,92 = 309,2mm. With two exceptions which are identified, end conditions are symmetrical at 84hp and should always be referenced to the left hand end viewed from the front.

In height (end plates, for instance), a similar calculation will use multiples of 44,45mm - a 'U', although there are some variations in that rack mounting hole positions do not have a regular increment.

KM6-RF subrack components
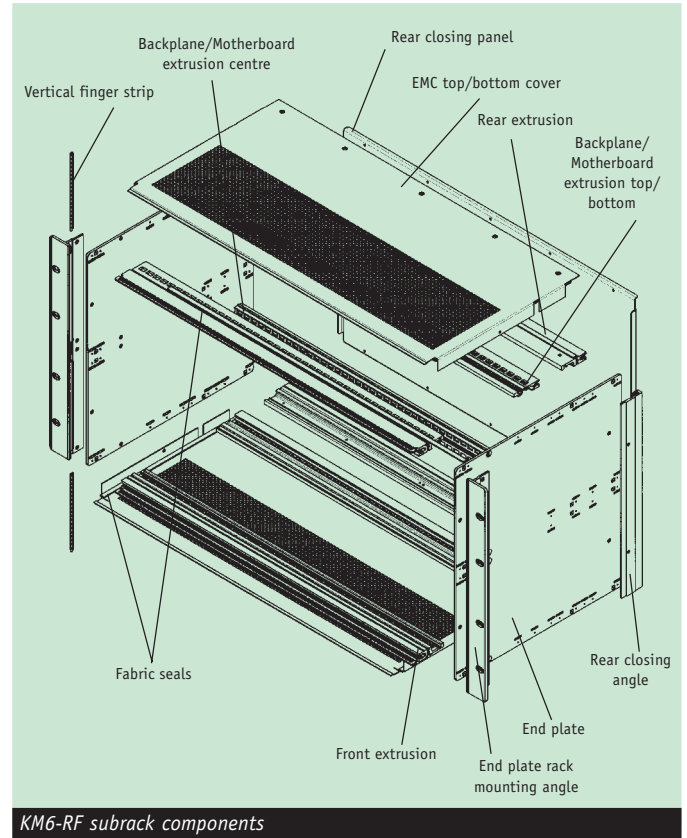
KM6-RF subrack components

END PLATES

- 3U, 4U, 6U, 7U, 9U
- 240, 300, 360, 420
- Safety radii on corners
- 3U, 6U and 9U rear plug-up versions

KM6-RF end plates are largely modular in dimensions: from a basic height and depth, height dimensions increase by 44,45mm for each additional unit of 1U. In depth the increments are based on the Eurocard step of 60mm, or 20mm in the case of rear plug-up versions.

4U and 7U versions can be used in either (3 or 6U) plus 1U top or bottom, or (3 or 6U) plus ½ U top and bottom, allowing space for cooling, recessing, cabling etc.

Contents of kit

Item/Description	Material/Finish
1 End plate	2,5mm Al alloy 5251-H12, Clear chromate

Ordering information

Nominal dimensions

Basic type (front plug-up only)	Kit contents	Order code
3U x 240	1	**959-262256G**
3U x 300	1	**959-262258C**
3U x 360	1	**959-262260E**
4U x 420	1	**959-278685C**
6U x 240	1	**959-262257E**
6U x 300	1	**959-262259A**
6U x 360	1	**959-262261C**
6U x 420	1	**959-278687K**
7U x 420	1	**959-278688H**
Rear plug-up type (preferred sizes in bold type)		
3U x 160/160	20	**959-275812D**
3U x 160/140	20	**959-275813B**
3U x 160/120	20	**959-275814L**
3U x 160/100	20	**959-275815J**
3U x 160/80	20	**959-275816G**
3U x 160/60	20	**959-275817E**
6U x 160/160	20	**959-275818C**
6U x 160/140	20	**959-275819A**
6U x 160/120	20	**959-275820E**
6U x 160/100	20	**959-275821C**
6U x 160/80	20	**959-275822A**
6U x 160/60	20	**959-275823K**
9U x 160/160	20	**959-275824H**
9U x 160/140	20	**959-275825F**
9U x 160/120	20	**959-275826D**
9U x 160/100	20	**959-275827B**
9U x 160/80	20	**959-275828L**
9U x 160/60	20	**959-275829J**
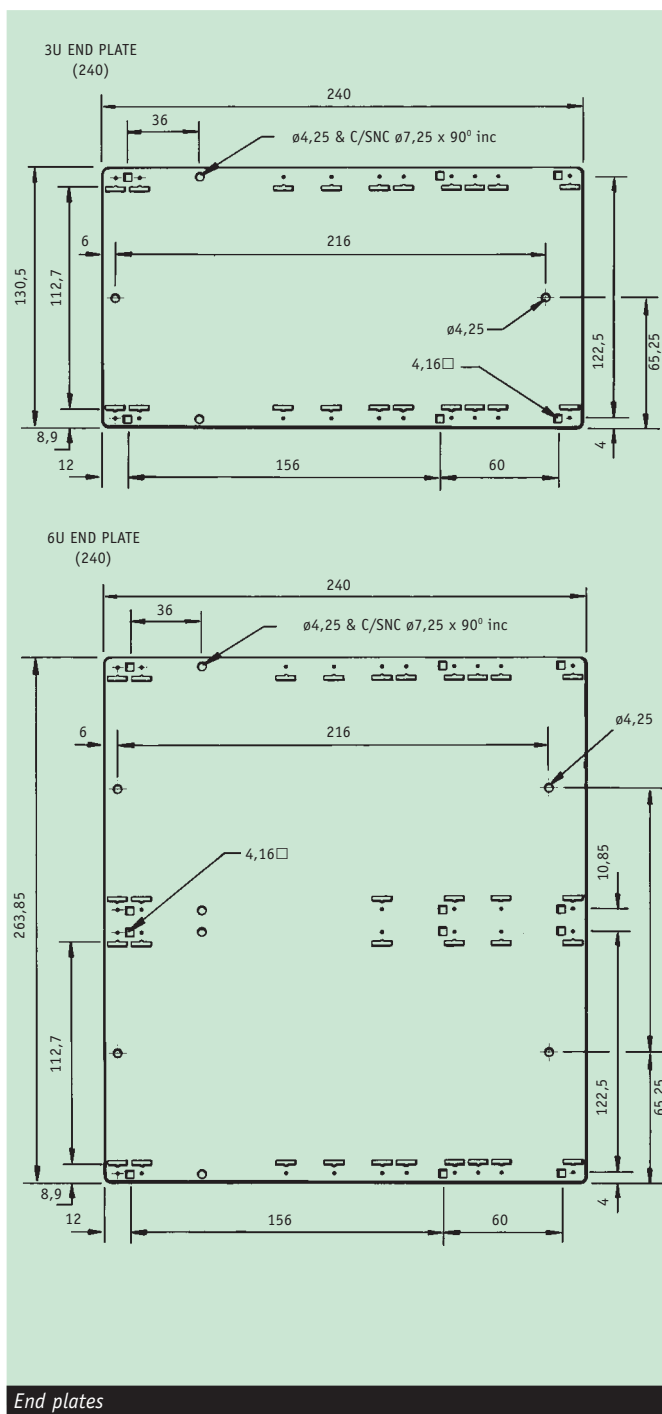
End plates

KM6-RF subrack components

END PLATE (RACK MOUNTING) ANGLES AND OVERLAYS

- IEEE 1101.10 geometry
- 3U, 6U and 9U
- 19inch or ETSI mounting angles
- Angle overlays available
- Safety radii on corners

These angles are designed to accept EMC fingers or to interface with them as appropriate (fingers should be ordered separately). Height dimensions are modular - from a basic height, they increase by 44,45mm for each additional 1U.

Polyester overlays are available in RAL7035 light grey (ordered separately). They provide a decorative finish and prevent finger-marking when moving the subrack around.

Contents of kit

Item/Description	Material/Finish
Al extrusion 5063T6	Clear chromate

Ordering information

End plate (19 inch rack mounting) angles

| Nominal size	Kit contents	Order code
3U	1	959-262266D
6U	1	959-262267B
9U	1	959-278689F
End plate (ETSI rack mounting) angles		
3U	1	959-262237L
6U	1	959-262238J

Overlays are self adhesive and can be applied to the front of end plate angles. Supplied in packs of 10

Contents of kit

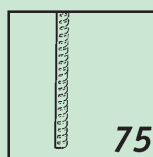| Item/Description	Material/Finish
0,2mm polyester	light grey RAL7035

Ordering information

Height	19 inch angles	ETSI angles
3U	959-262266D	959-262237L
6U	959-262267B	959-262238J
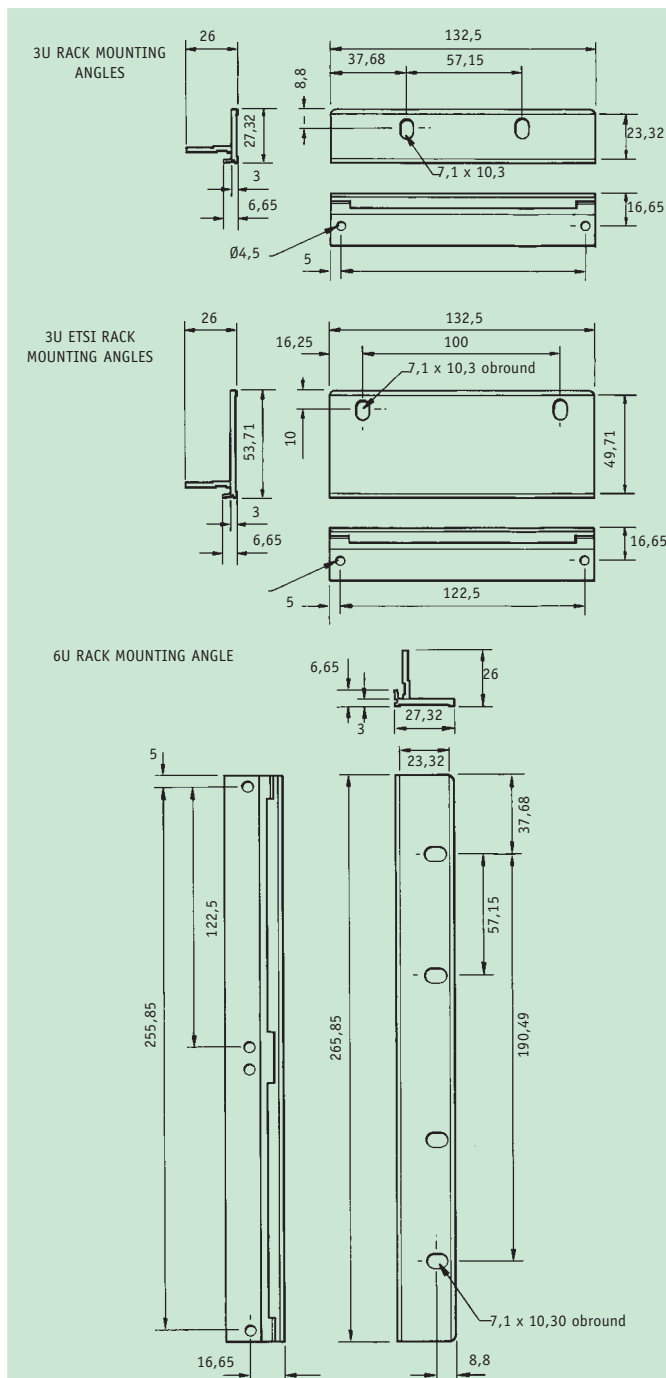
End plate (rack mounting) angles and overlays

Order Separately

75

EMC vertical fingers

KM6-RF subrack components

REAR CLOSING ANGLES

- IEEE1101.10 geometry
- 3U, 6U and 9U

These angles serve two functions, mimicking the geometry of rack mounting angles to interface with IEE1101.10 plug-in units and also provide support to the end plates against the pressure of EMC fingers. (EMC fingers should be ordered separately).
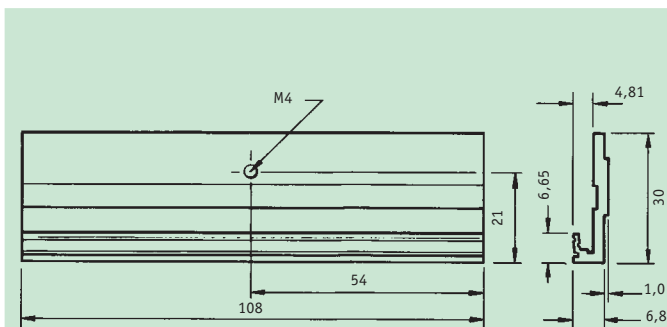
Normally used in Style B KM6-RF and 1101.11 rear plug-up situations

Contents of kit

Item/Description	Material/Finish
1 Extrusion	Al extrusion 6063T6, Clear chromate
Fixings	

Rear closing angles

Ordering information

Rear closing angles	Kit contents	Order code
3U	1 + fixing	**959-266527D**
6U	1 + fixings	**959-266258B**
9U	1 + fixings	**959-278690K**

Order Separately

75
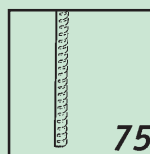
EMC vertical fingers

KM6-RF subrack components - extrusions

FRONT EXTRUSIONS

- Three versions
- Various widths
- Guide location in 1HP (5,08mm) increments
- 84hp lengths have printed slot locations

IEEE 1101.10 version
Provides facilities for the operation of compliant injector/extractors, having a suitably extended front lip.

IEC 60297-3 (non inject/ extract) version
Similar to the above, but without the extended lip. Normally used for panels which do not carry an injector/ extractor to 1101.10

Lipless version
This extrusion has a reduced overall height, and so can fit inside an EMC cover to enable recessing of pcb's. It can also be used in a divided height situation where it is necessary to fit a 6U panel over two, 3U sections - it should be noted, however that it would be necessary to modify a front panel slightly if it is 1101.10 compliant.

Contents of kit

Item/Description	Material/Finish
1 Front extrusion	Al extrusion 6063T6, Clear chromate

Ordering information

Description	84hp	60hp	42hp	24hp
IEEE1101.10 version	959-262227C	959-278691H	959-278692F	959-278693D
IEC 60297 (conventional)	959-262230C	959-278694B	959-278695L	959-278696J
Lipless version	959-262231A	-	-	-
Assembly screws M4 x 16 skt cap (pk 100)		959-262224J		

IEEE FRONT EXTRUSION

IEC 60297-3 FRONT EXTRUSION

LIPLESS EXTRUSION
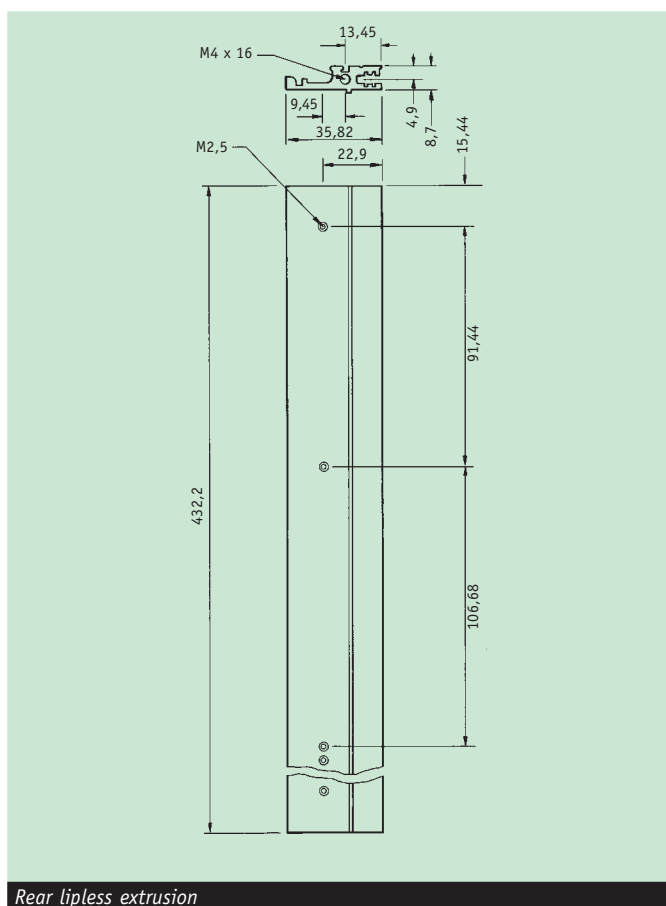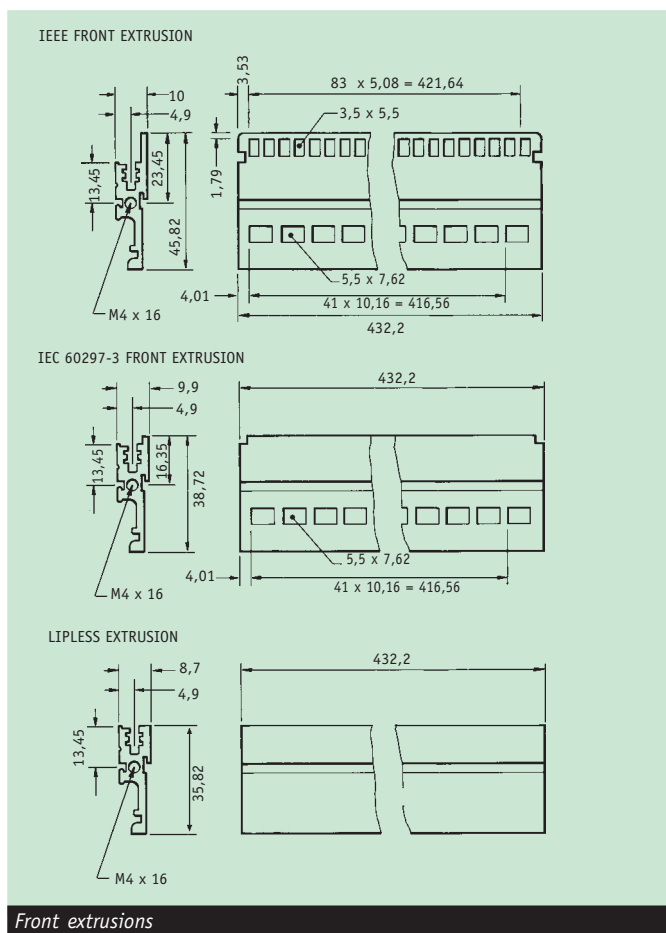
Front extrusions

REAR EXTRUSION

The lipless version is used in a different form to secure overall covers at the rear of Style B subracks.

Contents of kit

Item/Description	Material/Finish
1 Rear lipless extrusion	Al extrusion 6063T6, Clear chromate

Ordering information

Description	Order code
Rear lipless extrusion 84 HP	959-266529L

Rear lipless extrusion

KM6-RF subrack components - extrusions

BACKPLANE/ MOTHERBOARD EXTRUSIONS, TOP AND BOTTOM

■ Type 1 for use with backplane spacer
■ Type 2 for direct mounting of backplane
■ DIN 41 612 conversion option

Type 1
The Type 1 extrusion requires a spacer in order to maintain the correct geometry of the reference face of a backplane. This would normally be an insulator, but a conductive version is available if required.
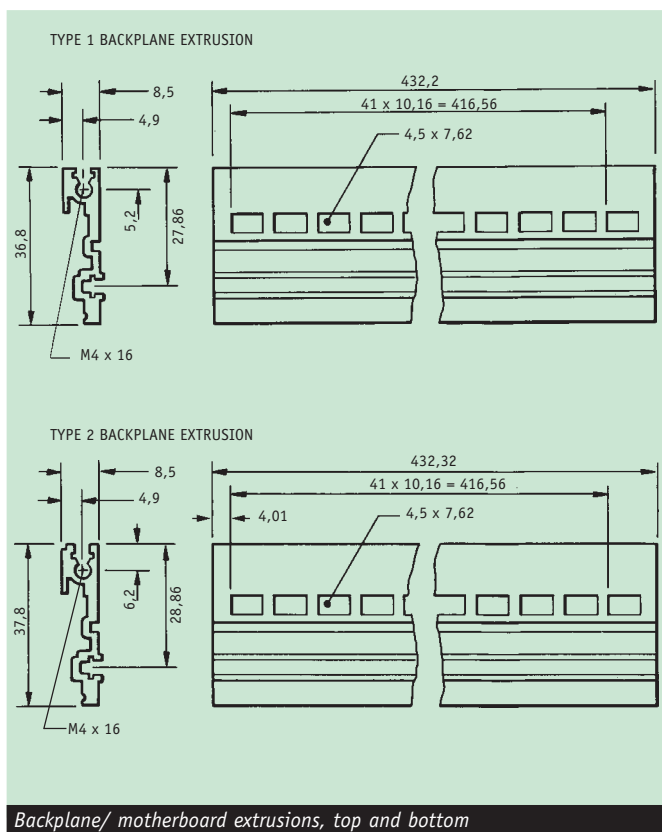
Type 2
The Type 2 extrusion is extended at the rear so that it does not require any spacer when it is not necessary or desirable to insulate the backplane from the frame.

Contents of kit

Item/Description	Material/Finish
Backplane extrusion	Al extrusion 6063T6, Clear chromate

Description	84hp	60hp	42hp	24hp
Type 1 extrusion	959-262232K	959-278697G	959-278698E	959-278699C
Type 2 extrusion	959-262233H	959-278700L	959-278701J	959-278702G
Assembly screws M4 x 16 skt cap (pk 100)				959-262224J

TYPE 1 BACKPLANE EXTRUSION

TYPE 2 BACKPLANE EXTRUSION

Backplane/ motherboard extrusions, top and bottom

BACKPLANE/ MOTHERBOARD EXTRUSIONS, CENTRE

■ Type 1 for use with backplane spacer
■ Type 2 for direct mounting of backplane
■ Two-part extrusion, includes guide mounting facility
■ DIN 41 612 conversion option

Type 1
The Type 1 extrusion requires a spacer in order to maintain the correct geometry of the reference face of a backplane. This would normally be an insulator, but a conductive version is available if required.

Type 2
The Type 2 extrusion is extended at the rear so that it does not require any spacer when it is not necessary or desirable to insulate the backplane from the frame.

Contents of kit

Item/Description	Material/Finish
Backplane extrusion plus insert	Al extrusion 6063T6, Clear chromate

Description	Order code
Type 1 backplane extrusion, centre 84HP	959-262234F
Type 2 backplane extrusion, centre 84HP	959-262235D
Assembly screws M4 x 16 skt cap (pk 100)	959-262224J

TYPE 1 BACKPLANE EXTRUSION, CENTRE

TYPE 2 BACKPLANE EXTRUSION, CENTRE

MID REAR TIE BAR INSERT

Backplane/ motherboard extrusions, centre
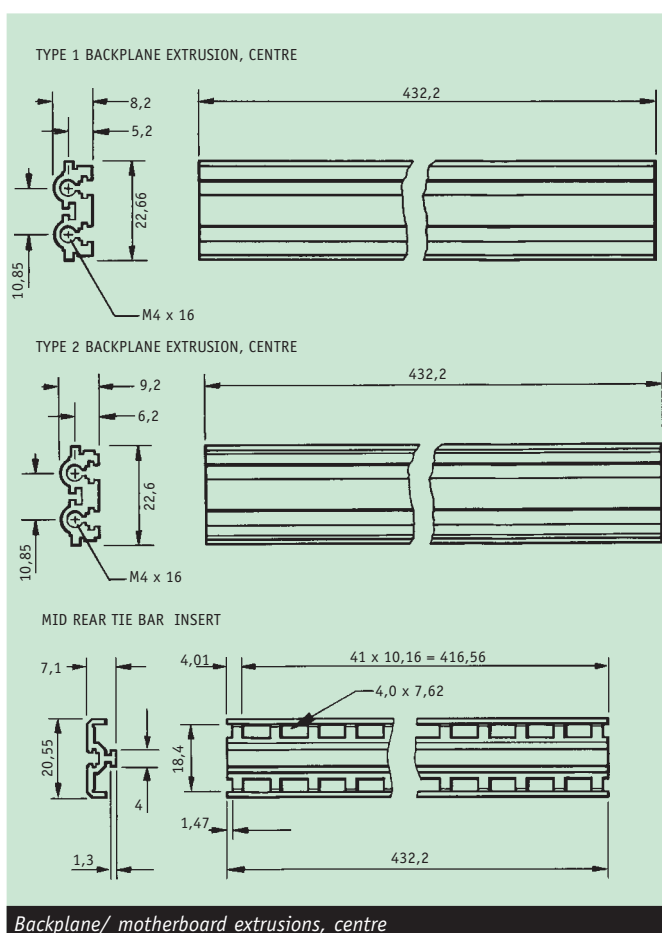
KM6-RF subrack components - extrusion related accessories

BACKPLANE SPACERS

■ Insulating and conductive versions

Backplane insulation spacers, single level
Supplied singly in 84hp lengths, the insulation spacer has small half shears at the end to aid assembly. It can be simply cut down to produce short versions.

Backplane insulation spacers, two level
Supplied singly in 84hp lengths, the insulation spacer has small half shears at the end to aid assembly. It can be simply cut down to produce short versions.

Backplane conductive spacer
The single level conductive spacer is supplied singly in 42hp lengths

Insulating spacers

Conductive spacer

Backplane spacer strips

Contents of kit

Item/Description	Material/Finish
Insulation spacers	Grey PVC UL94-V0
Conductive spacer	0,9mm steel , Zinc plate and passivate

Ordering information

	84hp	42hp
Insulation spacer 84hp single level	**950-10014H**	-
Insulation spacer 84hp two level	**950-10015E**	**-**
Conductive spacer 42hp single level	-	**173-60788B**
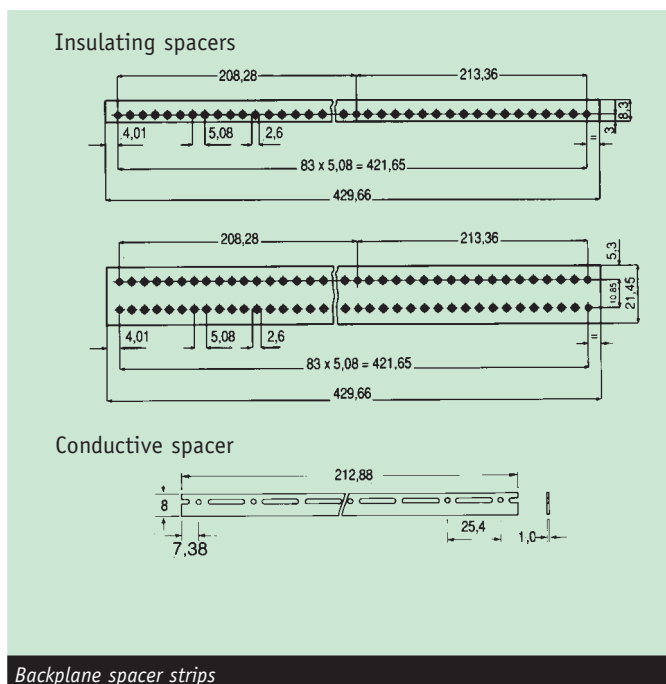
DIN 41612 CONVERSION

■ Direct mounting of connectors
### ■ Reversible for Types 1 & 2 backplane extrusions

Supplied in 84hp lengths with M2,5 pre-tapped holes on 5,08mm (1hp) pitch, these extrusions can be easily cut down for lesser lengths. When used in a Type 1 situation, no spacer is necessary. Screws for fixing connectors should be ordered separately in packs of 100

DIN 41612 conversion

Contents of kit

Item/Description	Material/Finish	
1 extrusion	Al extrusion 6063T6	Clear chromate
Fixings		

Ordering information

Description	Order code
DIN 41 612 conversion	**959-262239G**
Connector fixing screws M2,5x6mm (Pk 100)	**173-12530B**
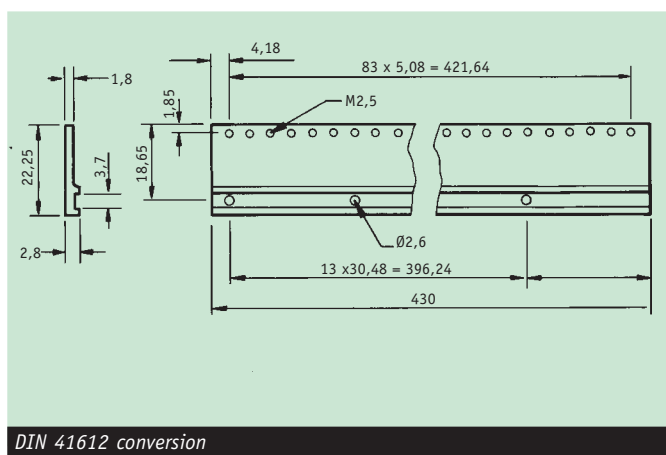
KM6-RF subrack components - extrusion related accessories

TAPPED STRIPS

■ M2,5 and M3 versions
■ Various lengths

Supplied pre-tapped on 5,08mm (1hp) pitch, The M2,5 versions are used extensively to provide accurate, adjustment free assembly fixing locations for standard front and rear panels, backplanes, EMC covers and certain accessories. They are easily cut down for non-standard lengths.

The M3 version is only supplied in 84hp lengths and is used rarely in standard situations.

In normal circumstances, they are fitted to the rearward position in front extrusions.

24 HP = 127,8
42 HP = 218,72
60 HP = 310,16
84 HP = 432,08

Tapped strips

Contents of kit

Item/Description	Material/Finish
1 tapped strip	Mild steel, Zinc plate and colour passivate

Ordering information

Description				Order code
Thread size	84hp	60hp	42hp	24hp
M2,5	950-202001E	950-202740L	950-202739G	950-202799L
M3	950-276330A	-	-	-
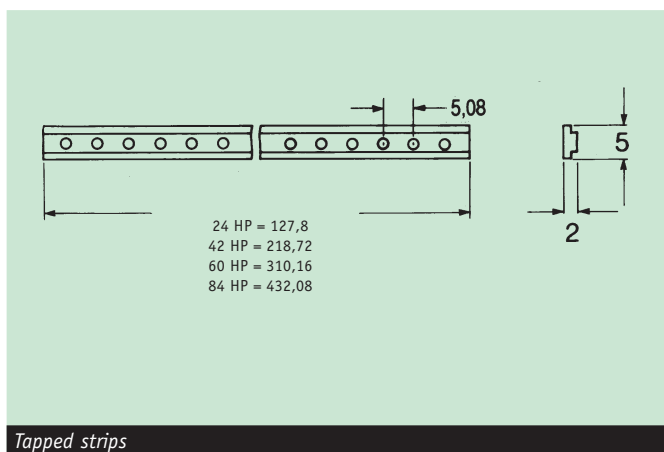
FRONT PANEL LOCATION STRIP

n **Prevents sideways movement of panels on insertion**

This 84hp pierced strip fits into the forward slot in KM6-RF front extrusions. When used in conjunction with a suitable panel, it prevents sideways movement caused by the pressure of EMC fingers. The hole size permits a normal M2,5 front panel screw to pass through into the tapped strip.

432,08 -0,2

83 Pitches of 5,08 ± 0,05 = 421,64

(Non-accumulative)

5,22
0,9
8,0
84 - Ø2,9 + 0,1

Front panel location strip

Contents of kit

Item/Description	Material/Finish
10 strips	0,9mm stainless steel

Ordering information

Description	Order code
Location strips	959-278684E
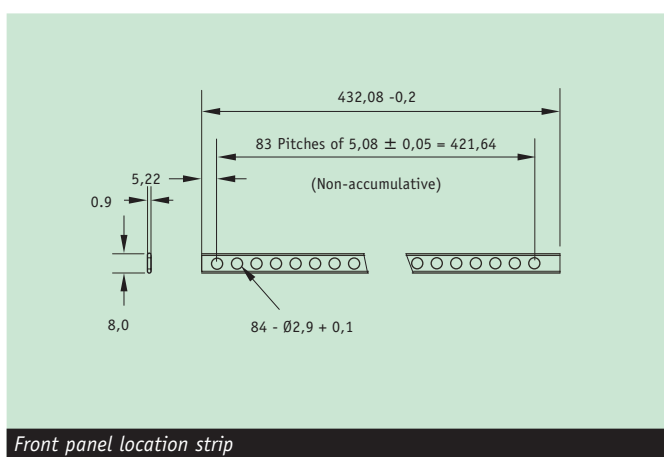
KM6-RF subrack - EMC components

EMC SEALS

■ IEEE1101.10 version
■ Horizontal type for sealing panels to front extrusions
■ Flexible Fabric type for cover interfaces

VERTICAL FINGER STRIP

This version clips onto IEEE1101.10 front panels , rack mounting angles or rear closing panels, providing electrical contact to neighbouring components. Select by nominal panel height.

Contents of kit

Item/Description	Material/Finish
Supplied in packs of 10	stainless steel

Ordering information

Description	Order code
Vertical seal for 3U	**959-266523A**
Vertical seal for 6U	**959-266524K**
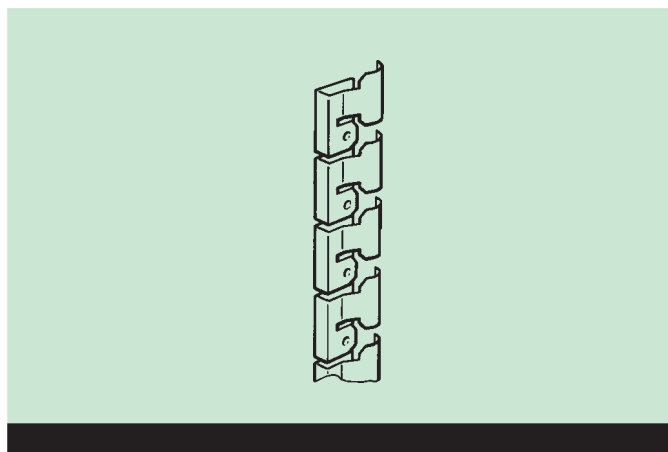
FABRIC SEAL

Normally supplied fitted to covers and extrusions in KM6-RF subrack kits. The seal is self-adhesive and provides secure conductivity between covers and extrusions or end plates for maintaining EMC integrity.
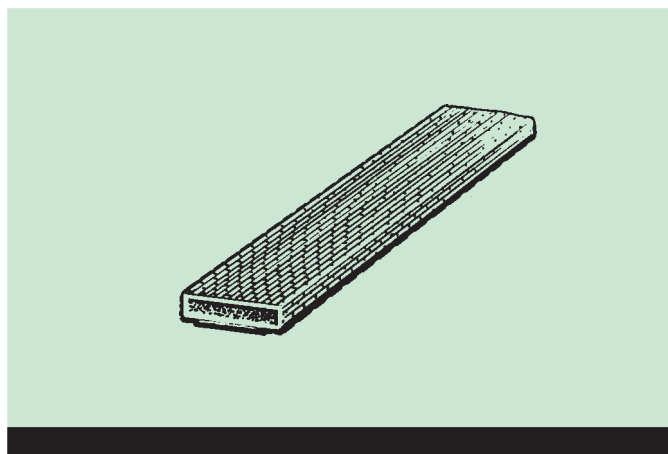
Standard length is 431mm. When constructing an EMC subrack from piece parts these seals should be ordered for extrusion to cover interfaces.

Contents of kit

Item/Description	Material/Finish
Supplied in packs of 10	CuNi fabric over closed cell foam

Ordering information

| Description	Order code
Fabric seal	**959-266525H**

HORIZONTAL SEAL

Supplied in 84hp lengths, this self-adhesive seal fits to the inside face of front extrusions to maintain electrical contact between front panels and the extrusion front face. It is of particular relevance on wider panels where it serves to close off long slots which might be disadvantageous to EMC performance.

Contents of kit

Item/Description	Material/Finish
Supplied in packs of 10	stainless steel

Ordering information

Description	Order code
Horizontal seal	**959-262225G**
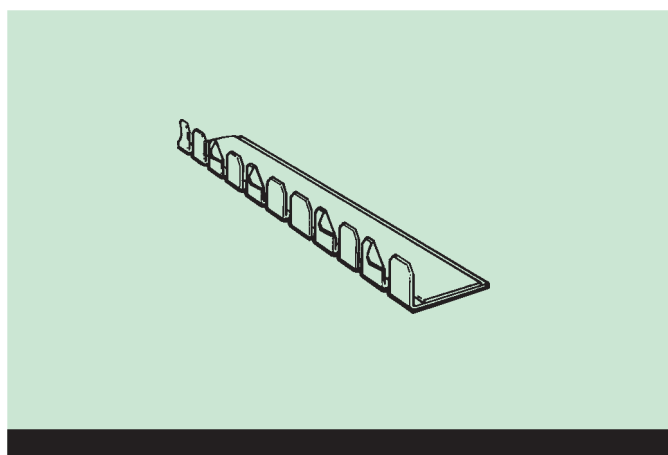
KM6-RF subrack - EMC components

STYLE A TOP/ BOTTOM COVERS

- Normal ventilated and fire enclosure versions
- 160mm and 220mm pcb depths
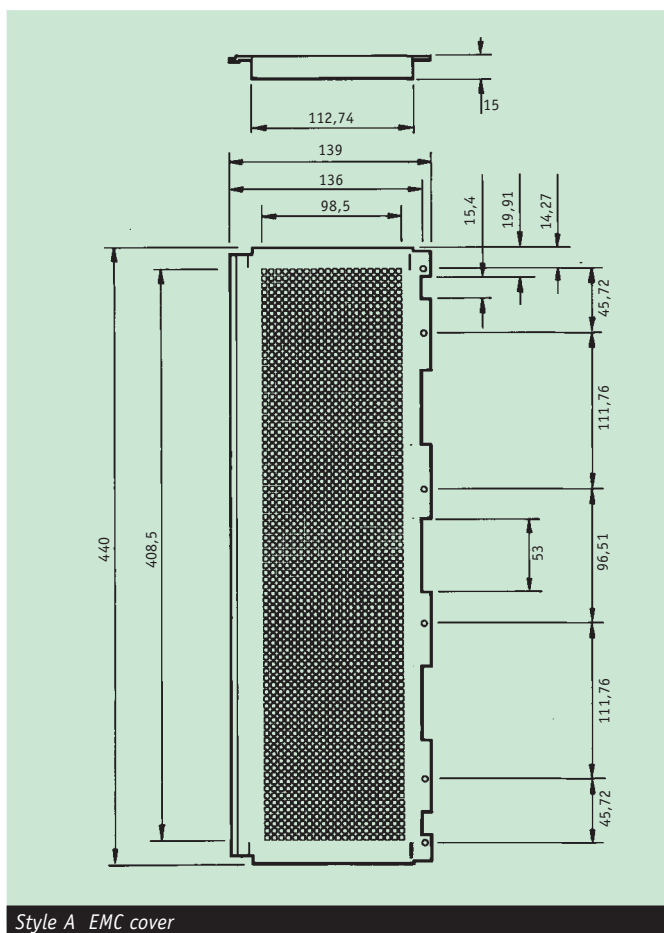
NORMAL VENTILATED COVER

Used in Style A KM6-RF subrack situations where only the pcb is required to be shielded - eg where the backplane forms a rear EMC shield or a separate rear cover shell is to be fitted. These covers are fitted with seals to the end plate.

Contents of kit

Item/Description	Material/Finish
1 cover	Steel 0,8mm CR4, Zinc plate and passivate
2 seals (fitted)	CuNi fabric over closed cell foam
Fixings	

Ordering information

Description	Order code
Ventilated cover for 160mm pcb	**959-262275C**
Ventilated cover for 220mm pcb	**959-262277K**

Style A EMC cover
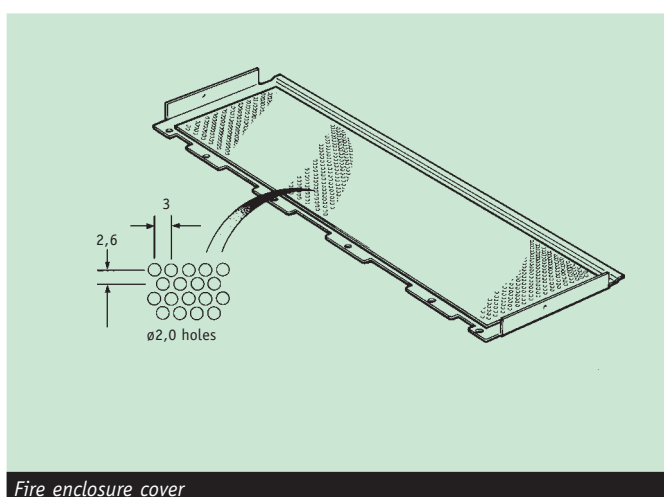
FIRE ENCLOSURE COVER

This version meets the requirements of EN60950 regarding hole size and spacing. Normally required at the bottom only, it will replace the normal ventilated type.

Contents of kit

Item/Description	Material/Finish
1 cover	Steel 0,8mm CR4, Zinc plate and passivate
2 seals(fitted)	CuNi fabric over closed cell foam
Fixings	

Ordering information

Description	Order code
Fire enclosure cover for 160mm pcb	**959-262215K**
Fire enclosure cover for 220mm pcb	**959-262216H**

Fire enclosure cover

KM6-RF subrack - EMC components

STYLE B TOP/ BOTTOM COVERS

■ **Normal ventilated and fire enclosure versions**
n **240, 300 and 360mm depths**
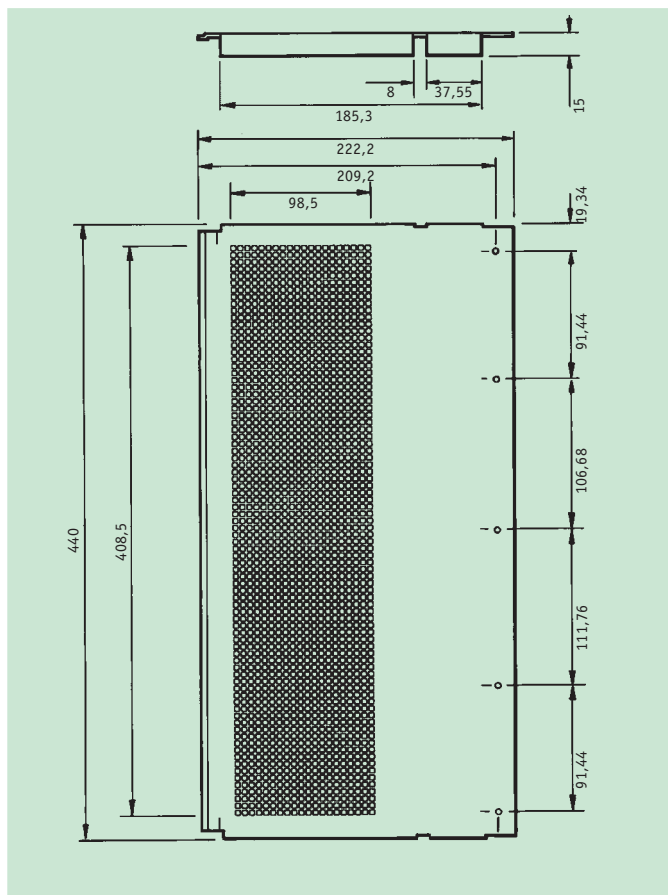
NORMAL VENTILATED COVER

Used in Style B KM6-RF subrack situations where the entire area is shielded. These covers are fitted with seals to the end plate.

Contents of kit

Item/Description	Material/Finish
1 cover	Steel 0,8mm CR4, Zinc plate and passivate
2 seals (fitted)	CuNi fabric over closed cell foam
Fixings	

Ordering information

Description	Order code
Ventilated cover for 240mm subracks	**959-262274E**
Ventilated cover for 300mm subracks	**959-262276A**
Ventilated cover for 360mm subracks	**959-262278H**

Style B EMC cover
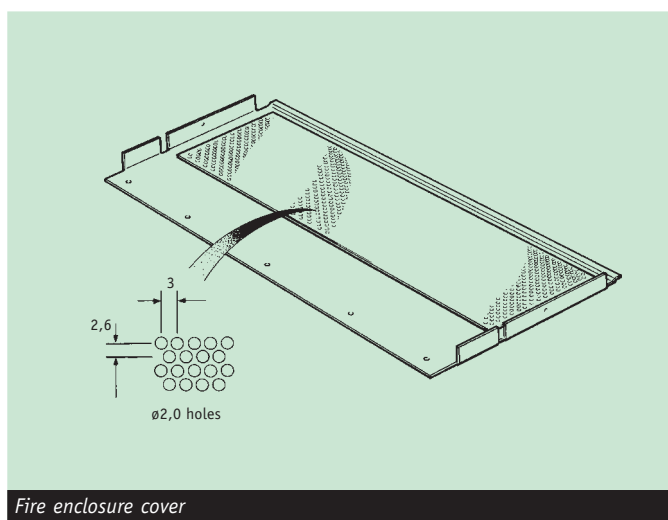
FIRE ENCLOSURE COVER

This version meets the requirements of EN60950 regarding hole size and spacing. Normally required at the bottom only, it will replace the normal ventilated type.

Contents of kit

Item/Description	Material/Finish
1 cover	Steel 0,8mm CR4, Zinc plate and passivate
2 seals(fitted)	CuNi fabric over closed cell foam
Fixings	

Ordering information

Description	Order code
Fire enclosure cover for 240 subracks	**959-262217F**
Fire enclosure cover for 300 subracks	**959-262218D**
Fire enclosure cover for 360 subracks	**959-262219B**

Fire enclosure cover