



## 1.2 EMC Flat Front Panels

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

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

Performance Level	30-230 MHz	230-1000 MHz	1000-2000 MHz
1 / Elma: basic level	20 dB	10 dB	0 dB
2 / Elma: advanced level	40 dB	30 dB	20 dB
3 / Elma: superior level	60 dB	50 dB	40 dB

Note: Throughout the catalogue we put all EMC parts in a yellow table.

# 1: Front Panels for Sub Racks and Enclosures

## 1.2.1 EMC Filler Panel with EMC Gasket

- High stability (U-profile)
- Extruded aluminium
- Pressed-in centring pin and bushes M2.5
- Front side clear anodised, rear side conductive
- **Scope of delivery:**
  - EMC front panel incl. pressed-in centering pin and bushes M2.5
- EMC-gasket see below
- Front panel screw see below



### 1.2.1 EMC Front Panel

Width	Part-No. 3 U	Part-No. 4 U	Part-No. 6 U
4 HP	66-514-73	66-514-74	66-514-76
5 HP	66-515-73	-	66-515-76
6 HP	66-516-73	66-516-74	66-516-76
8 HP	66-518-73	66-518-74	66-518-76
9 HP	66-519-73	-	66-519-76
10 HP	66-520-73	-	66-520-76
12 HP	66-522-73	-	66-522-76
14 HP	66-534-73	-	66-534-76

### 1.2.1.1 EMC Gasket (Stainless Steel)

Height	Part-No.
3 U	81-062-03
4 U	81-062-04
6 U	81-062-06

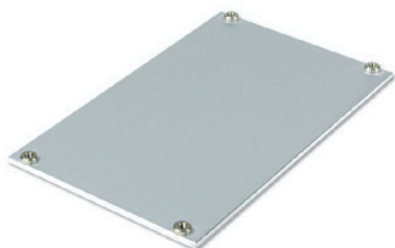
### 1.2.1.2 Front Panel Screws

- Front panel width up to 8 HP = 2 screws;  $\geq 9$  HP = 4 screws

Description	Part-No.
Torx screw, M2.5 x 11.3, size T8	5443-08
Rounded head screw, cross recessed M2.5 x 12.7	61-287

## 1.2.2 EMC Filler Panel without EMC Gasket

- Front panel standard, solid
- Front clear anodised
- Rear conductive
- Basic level EMC
- **Scope of delivery:**
  - 1 front panel incl. press-fit bushes M2.5 (pressed-in)
- Front panel screws, see below
- Spacer see 1.2.2.2



### 1.2.2 EMC Filler Panel without Gasket

Width	Part-No. 3 U	Part-No. 4 U	Part-No. 6 U
4 HP	21B304	-	-
10 HP	21B310	-	-
12 HP	21B312	-	-
16 HP	21B316	21B416	-
21 HP	21B321	21B421	-
42 HP	21B342	21B442	21B642
63 HP	21B363	21B463	-
84 HP	21B384	21B484	21B684

### 1.2.2.1 Front Panel Screws

- Front panel width up to 9 HP = 2 screws;  $\geq 10$  HP = 4 screws

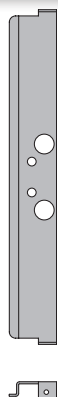
Description	Part-No.
Torx screw, M2.5 x 11.3, size T8	5443-08
Rounded head screw, cross recessed M2.5 x 12.7	61-287

# 1: Front Panels for Sub Racks and Enclosures

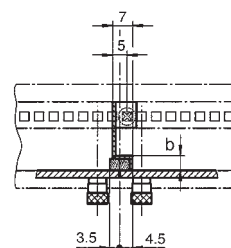
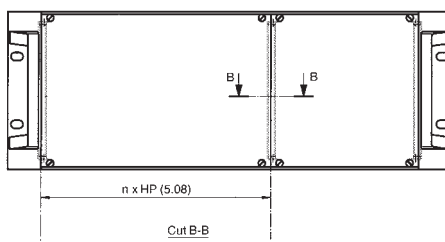
## 1.2.2.2 Spacer for EMC Front Panel Flat

- EMC-Level: Advanced
- **Scope of delivery:**
  - 1 spacer incl. gasket
  - 2 Torx sheet metal screws 2.9 x 6.5; size T 10

Height	Part-No.
3 U	81K023
4 U	81K024
7 U	81K027

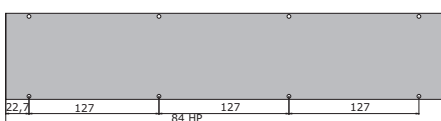
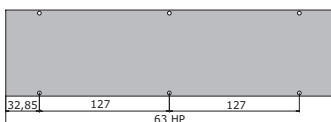
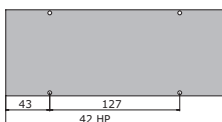


Holes in some cases needed for mounting telescopic rails



## 1.2.3 EMC Flat Front Panels

- Aluminium 2.5 mm (conductive)
- Closes the front or rear of the sub rack with very high shielding effectiveness
- Contact between the flat front panel and the case is made via EMC gaskets



## 1.2.3 Advanced EMC Level

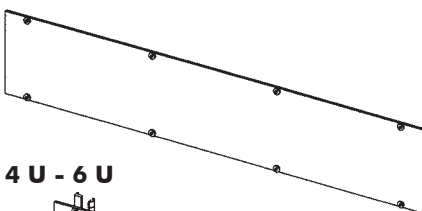
- **Scope of delivery:**
  - EMC flat front panel
  - Contact angle, incl. screws (4 + 6 U version only)
  - EMC gasket for contact angle (4 + 6 U version only)
- Front panel screws see below
  - Front panel width 42 HP = 4 screws
  - Front panel width 63 HP = 6 screws
  - Front panel width 84 HP = 8 screws

Width	Part-No. 1 U	Part-No. 2 U	Part-No. 3 U	Part-No. 4 U	Part-No. 6 U
42 HP	-	-	21C342	-	-
63 HP	-	21C263	21C363	21C463	-
84 HP	21C184	21C284	21C384	21C484	21C684

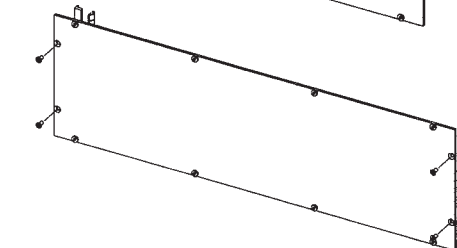
## 1.2.3.1 Front Panel Screws

Description	Part-No. 10 pcs.
Torx screws M2.5 x 11.3, size T8, with press-fit bush	63K480
Screw recessed M2.5 x 11.3, with press-fit bush	63-444
Screw cross recessed M2.5 x 12.7, with press-fit bush	63-480

### 1 U - 3 U



### 4 U - 6 U



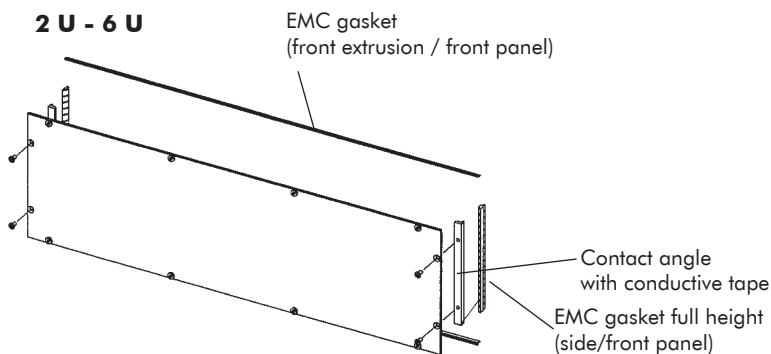
Contact angle

EMC gasket partial (side/front panel)

# 1: Front Panels for Sub Racks and Enclosures

## 1.2.4 Superior EMC Level

- **Scope of delivery:**
  - EMC flat front panel
  - Contact angle, incl. screws
  - EMC gasket for contact angle
  - EMC gasket for front extrusion/front panel
- Front panel screws, see below
  - Front panel width 42 HP = 4 screws
  - Front panel width 63 HP = 6 screws
  - Front panel width 84 HP = 8 screws



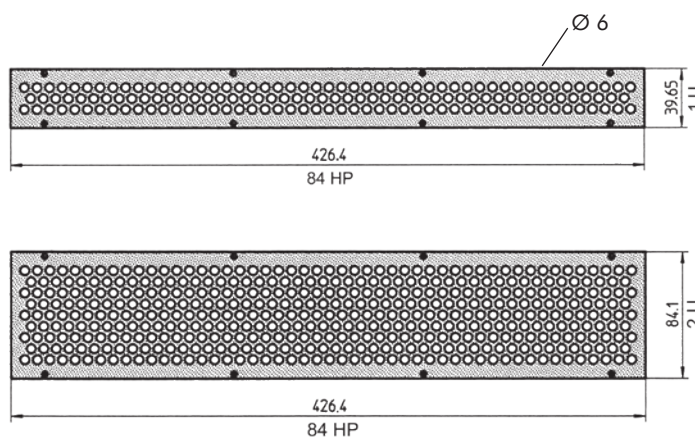
Width	Part-No. 2 U	Part-No. 3 U	Part-No. 4 U	Part-No. 6 U
84 HP	21D284	21D384	21D484	21D684

### 1.2.4.1 Front Panel Screws

Description	Part-No. 10 pcs.
Torx screws M2.5 x 11.3, size T8, with press-fit bush	63K480
Screw recessed M2.5 x 11.3, with press-fit bush	63-444
Screw cross recessed M2.5 x 12.7, with press-fit bush	63-480

## 1.2.5 Perforated EMC Front Panel 84 HP

- Front anodised, rear conductive
- Advanced EMC level
- Width: 84 HP
- **Scope of delivery:**
  - Perforated flat front panel
- Front panel screws see below
- On-off switch see below



### 1.2.5 Perforated EMC Front Panel 84 HP

Height			Air Passage	Switch Opening Part-No. without
1 U	39.65 mm	1.56"	4'100 mm <sup>2</sup>	21C184-01
2 U	84.1 mm	3.31"	12'300/11'700 mm <sup>2</sup>	21C284-01

### 1.2.5.1 Front Panel Screws

Description	Part-No. 10 pcs.
Torx screws M2.5 x 11.3, size T8, with press-fit bush	63K480
Screws recessed M2.5 x 11.3, with press-fit bush	63-444
Screws cross recessed M2.5 x 12.7, with press-fit bush	63-480

