



### Summary

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# Empty modules

## Selection table

- Component holder module.
- Usable PCB type CMS area 24.5 cm<sup>2</sup> perpendicular to the rail.
- 4 screws terminals 2.5 mm<sup>2</sup>.
- Heat dissipation 1 W.
- Spacing 9 mm (.35").



- Component holder module.
- Usable PCB area 13.5 cm<sup>2</sup> perpendicular to the rail.
- 8 screw terminals 2,5 mm<sup>2</sup>.
- Heat dissipation 2 W.
- Spacing 18 (.71") - 23 (.91") and 28 mm (1.10").



- Component holder module.
- Usable PCB area 35 cm<sup>2</sup> perpendicular to the rail.
- 12 screw terminals 2,5 mm<sup>2</sup> optional, 12 plug-in screw connections or 12 quick-connect tabs series 6.35 mm or HE 14 connector : 2 x 22 points.
- Heat dissipation 4 W.
- Spacing 22.5 (.88") and 35 mm (1.37").



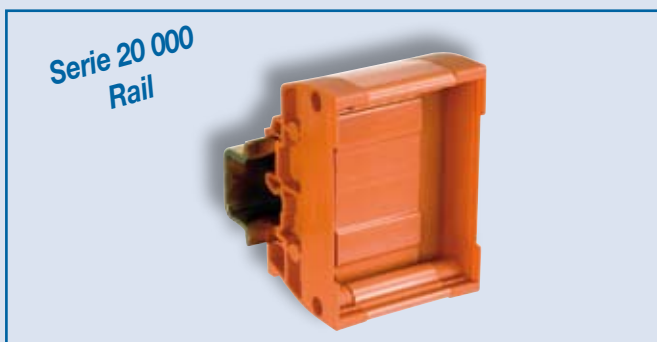
- Component holder.
- Usable PCB area 27 cm<sup>2</sup> perpendicular to the rail.
- 8 screws terminals 2.5 mm<sup>2</sup>.
- Heat dissipation 1 W.
- Spacing 11.5 (.45") - 15 (.59") - 18.5 mm (.72").



- Interface module.
- Usable PCB area 6.7 to 470 mm parallel to the rail.
- 3 widths available : 75 - 100 - 125 mm.
- Any type of PCB terminals and/or connectors may be used.



- Printed Circuit Board Holder .
- Variable PCB length from 60 to 1000 mm.
- 2 PCB width : 71 - 100 mm.
- PCB thickness up to : 1.6 mm.



# Empty modules

"series 8 000"

## Features

A series 8 000 module is made of three parts :

- Body of molded polyamide (holding the terminals).
- Two polyamide end plates of different thickness, which, snapped onto the body, protect the electronic components and determine the overall spacing.
- Transparent front side.

### Accessories

Marking method

RC55

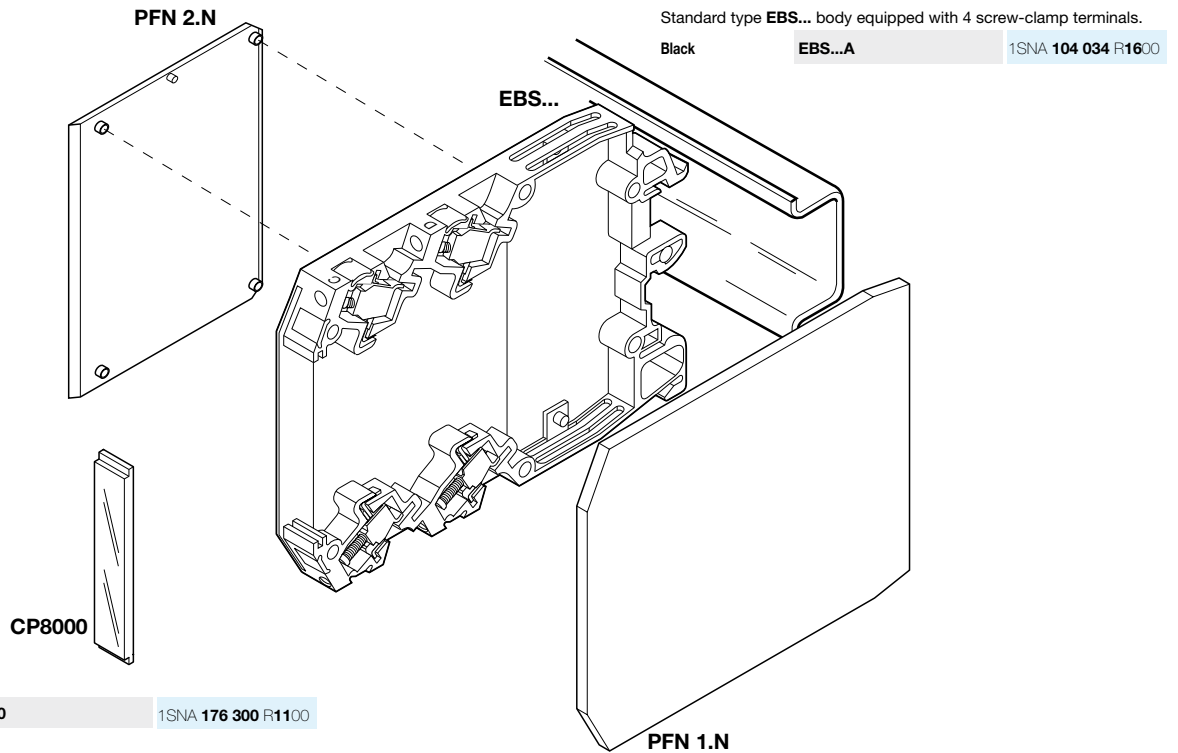
see marking

End plate **PFN 2.N** - Thickness 3.5 mm.

Black

**PFN 2.N**

1SNA 103 770 R1700



Standard type **EBS...** body equipped with 4 screw-clamp terminals.

Black

**EBS...A**

1SNA 104 034 R1600

Transparent front side.

**CP8000**

1SNA 176 300 R1100

End plate **PFN 1.N** - Thickness 1 mm.

Black

**PFN 1.N**

1SNA 103 772 R0500

(1) Material not kept in stock

## How to order

Indicate the part numbers of an insulator and the 2 end plates and the 1 front side

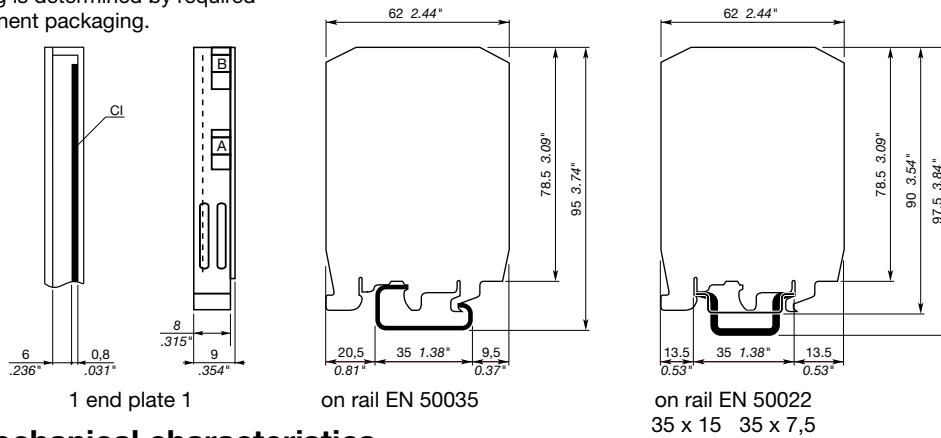
1 standard type black	<b>EBS...A</b>	1SNA 104 034 R1600
1 end plate	<b>PFN 2.N</b>	1SNA 103 770 R1700
1 end plate 1 mm black	<b>PFN 1.N</b>	1SNA 103 772 R0500
1 front side	<b>CP8000</b>	1SNA 176 300 R1100

# Empty modules

"series 8 000"

## Dimensions

Component holder spacing is determined by required internal volume for component packaging.



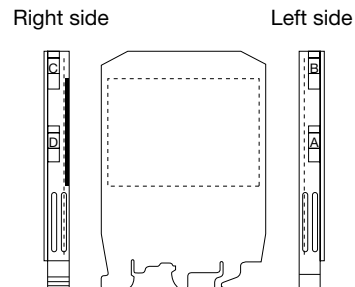
## Electrical and mechanical characteristics

### 1. Electrical

TYPE OF CONNECTION		SCREW-CLAMP A
Connecting capacity	Rigid conductor	0 to 4 mm <sup>2</sup>
	Flexible conductor	0 to 2,5 mm <sup>2</sup>
	AWG	20 to 120 AWG
	DIN Gr. C	250 V ~ and 300 V =
Rated voltage	NFC Cat. C	250 V ~ and =
	CSA	
Remarks	wire stripping length 7 mm	
	Ø recommended screwdriver 3,5 mm	

### 2. Mechanical

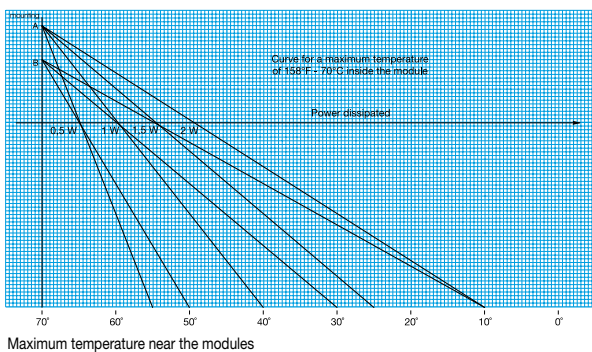
**Body** : polyamide UL 94.V0, black  
**Working temperature** : -40°C to +100°C  
**Arc creepage index** : KB 600  
**Storage temperature** : -55°C to +110°C



### 3. Thermal

- For maximum reliability, the mounting method must be determined according to the power dissipated in the interface module, and the ambient temperature around the modules.

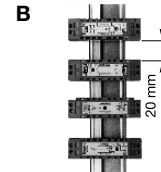
- Inversely, knowing the type of mounting, A or B, and the power dissipated, the curve (left) determines the maximum recommended ambient temperature.



### horizontal assembly

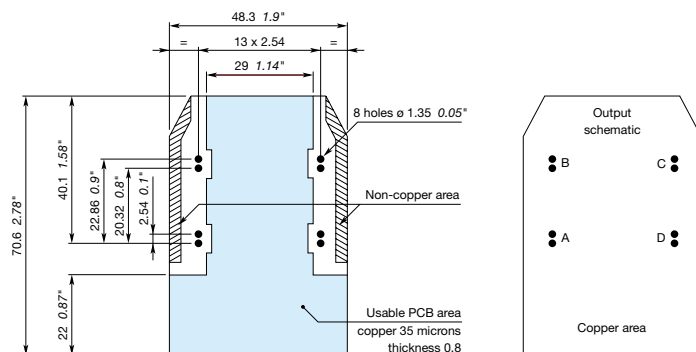


### vertical assembly



The characteristics shown on the left are given as a guide and may be modified without notice

## Printed circuit boards



# Empty modules

"series 10 000"

## Features

A series 10 000 module is made of three parts :

- Body of molded polyamide (holding the terminals).
- Two polyamide end plates of different thickness, which, snapped onto the body, protect the electronic components and determine the overall spacing.

Spacing	Components	
	Body	End plate
18	1 x EB...	2 x PFN 1
23	1 x EB...	(1 x PFN 1) + 1 x PFN 2
28	1 x EB...	2 x PFN 2

### Accessories

Marking method

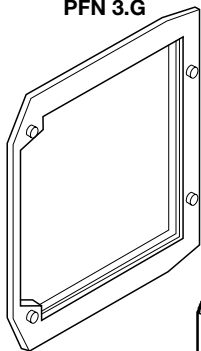
RC55

see marking

End plate without airing holes - Type **PFN 3**.

Grey PFN 3.G 1SNA 114 289 R2400

### PFN 3.G

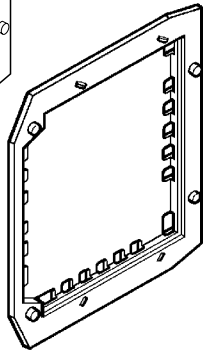


End plate with airing holes **PFN 1** - Thickness 3.5 mm.

Grey PFN 1.G 1SNA 113 091 R0000  
 Orange PFN 1.O 1SNA 103 259 R1300  
 Blue (1) PFN 1.B 1SNA 123 091 R0200  
 Black PFN 1.N 1SNA 107 007 R0200

(1) Material not kept in stock

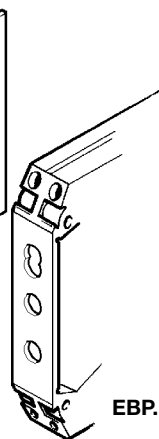
### PFN...



### CI 115

PREPUNCHED printed circuit board.

CI 115 1SNA 174 021 R1600



### EBP...

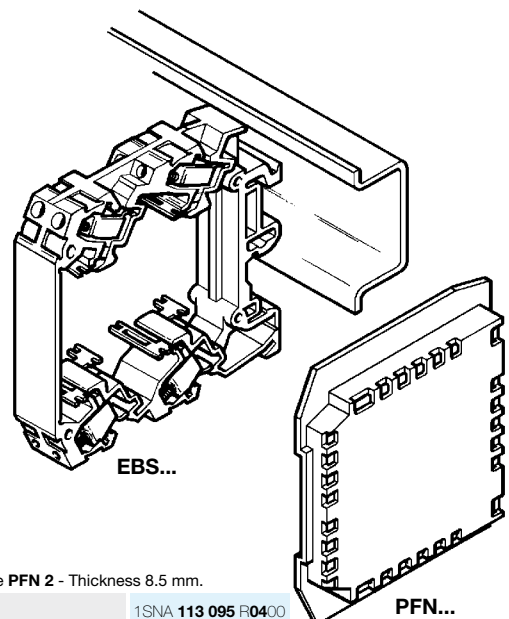
Type **EBP** body equipped with 8 screw clamp-terminals with 4 drilling.

Grey EBP...A 1SNA 113 214 R1700

Standard type **EBS** body equipped with 8 screw-clamp terminals.

Grey EBS...A 1SNA 114 533 R0000  
 Orange EBS...A 1SNA 103 305 R0200  
 Blue (1) EBS...A 1SNA 124 533 R0200  
 Black EBS...A 1SNA 104 071 R2300

(1) Material not kept in stock



### EBS...

### PFN...

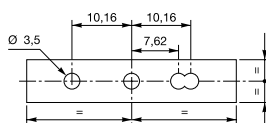
End plate with airing holes type **PFN 2** - Thickness 8.5 mm.

Grey PFN 2.G 1SNA 113 095 R0400  
 Orange PFN 2.O 1SNA 103 260 R1000  
 Blue (1) PFN 2.B 1SNA 123 095 R0600  
 Black PFN 2.N 1SNA 107 008 R0000

(1) Material not kept in stock

## Option

Type "EBP" body with 4 holes for indicator or potentiometers, etc...



Standard "EBS" body



## How to order

Indicate the part numbers of an insulator and the 2 end plates.

**Example :** for a 23 mm spacing module equipped with 8 screw-clamp connections, you must order :

1 grey insulator 1SNA 114 533 R0000  
 1 grey end plate 3.5 1SNA 113 091 R0000  
 1 grey end plate 8.5 1SNA 113 095 R0400

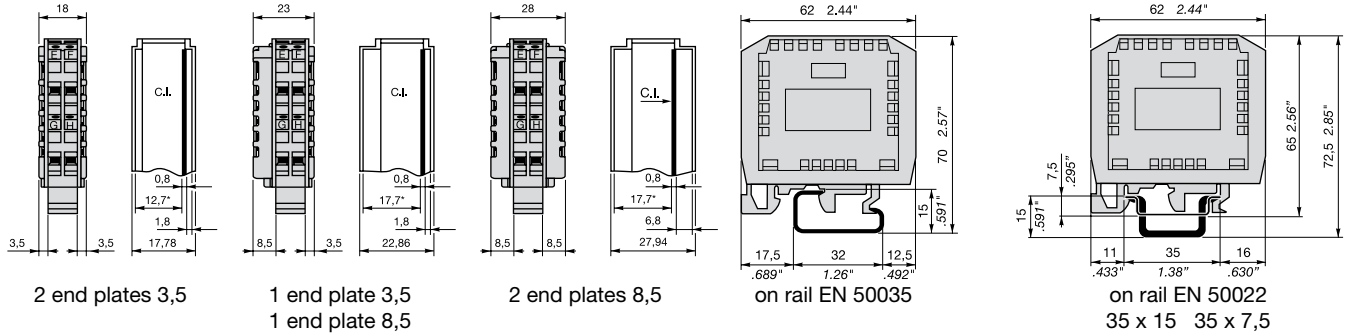
# Empty modules

"series 10 000"

## Dimensions

Component holder spacing is determined by required internal volume for component packaging.

\* : Max. height of components



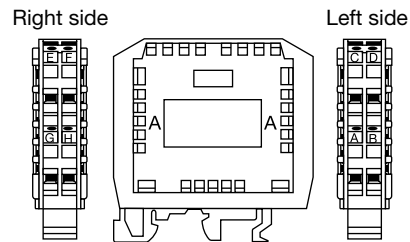
## Electrical and mechanical characteristics

### 1. Electrical

TYPE OF CONNECTION		SCREW-CLAMP A
Connecting capacity	Rigid conductor	0 to 4 mm <sup>2</sup>
	Flexible conductor	0 to 2,5 mm <sup>2</sup>
	AWG	20 to 12 AWG
Rated voltage	DIN Gr. C	250 V ~ and 300 V =
	NFC Cat. C	250 V ~ and =
	CSA	
Remarks		wire stripping length 7 mm
		Ø recommended screwdriver 3,5 mm

### 2. Mechanical

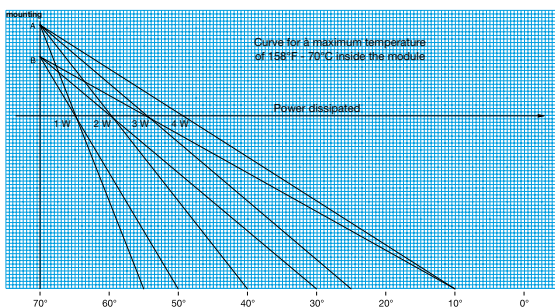
Body : polyamide UL 94.V0  
 Working temperature : -40°C to +100°C  
 Arc creepage index : KB 600  
 Storage temperature : -55°C to +110°C



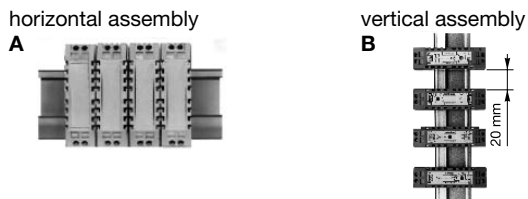
### 3. Thermal

- For maximum reliability, the mounting method must be determined according to the power dissipated in the interface module, and the ambient temperature around the modules.

- Inversely, knowing the type of mounting, A or B, and the power dissipated, the curve (left) determines the maximum recommended ambient temperature.



Maximum temperature near the modules

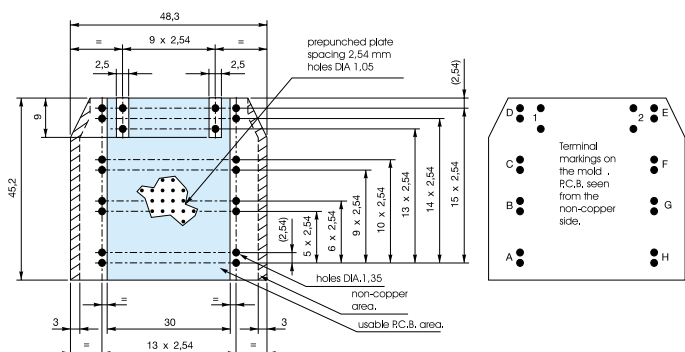


The characteristics shown on the left are given as a guide and may be modified without notice

## Accessories Printed circuit boards

Material : Epoxy resin UL94 V0  
 - Thickness of copper : 35 µm  
 Prepunched boards

CI 115 1SNA 174 021 R1600



# Empty modules

"series 11 000"

## Features

A series 10 000 module is made of three parts :

- Body of molded polyamide (holding the terminals).
- Two polyamide end plates of different thickness, which, snapped onto the body, protect the electronic components and determine the overall spacing.

## Accessories

Marking method

RC55

see marking

LEFT end plate - Thickness 3 mm.

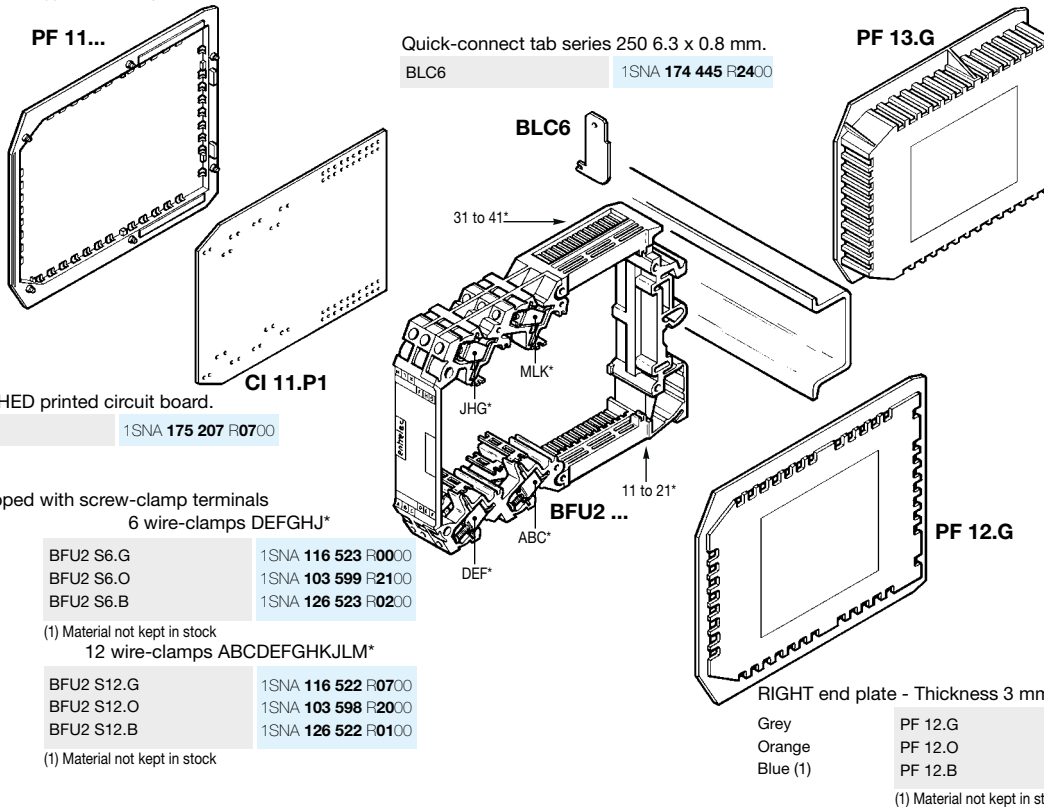
Grey	PF 11.G	1SNA 116 519 R1400
Orange	PF 11.O	1SNA 103 595 R1500
Blue (1)	PF 11.B	1SNA 126 519 R1600

(1) Material not kept in stock

RIGHT end plate - Thickness 15 mm.

Grey	PF 13.G	1SNA 116 718 R2300
Orange	PF 13.O	1SNA 103 762 R0300
Blue (1)	PF 13.B	1SNA 126 718 R2500

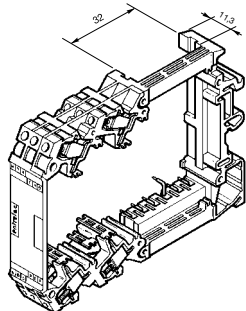
(1) Material not kept in stock



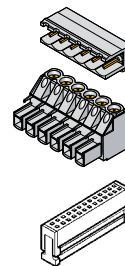
## Options

This module option is fitted with ABB connector (6 points) or a flat cable connector (type HE 14 up to 22 points).  
The other module parts are identical to the version without a connector.

Fitted body can receive 2 plug-in connectors BFU2 S12.G.CP



12 wire-clamps - Grey 1SNA 116 689 R2700



Connector

socket	1SSA 255 306 R0100
connector	1SSA 245 206 R0100

Standard flat cable connector type HE 14 (not supplied)

## How to order

Example :

for a unit equipped with 12 screw-clamps + 6 quick-connect tabs,  
order :

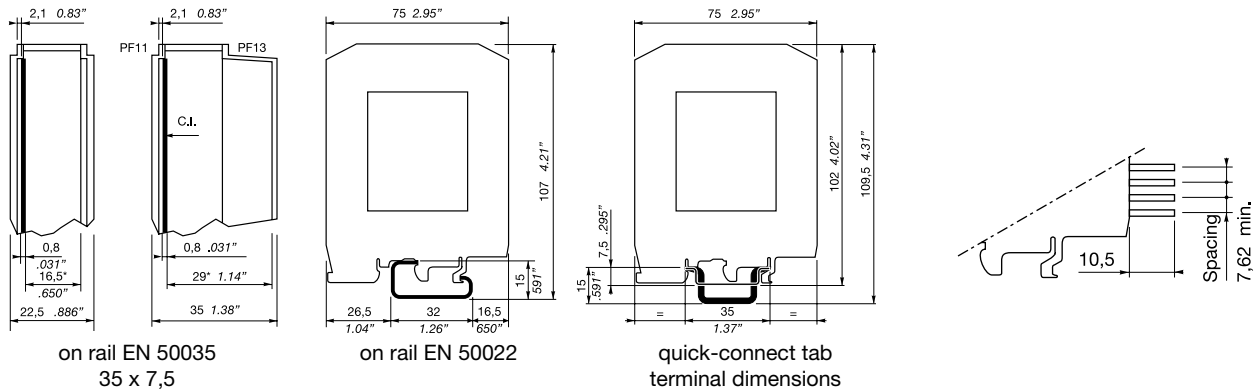
Body 12 wire-clamp - Grey	1SNA 116 522 R0700
Left end plate - Grey	1SNA 116 519 R1400
Right end plate - Grey	1SNA 116 520 R1100
Quick-connect tabs	1SNA 174 445 R2400

# Empty modules

"series 11 000"

## Dimensions

\* : Max. height of components



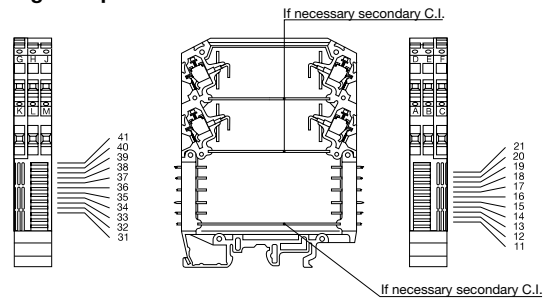
## Electrical and mechanical characteristics

### 1. Electrical

TYPE OF CONNECTION	Screw-Clamp	Quick-connect 6,3 x 0,8	
Connecting capacity	Solid	0,5 to 4 mm <sup>2</sup>	
	Stranded	0,5 to 2,5 mm <sup>2</sup>	0,3 to 2,5 mm
	AWG	20 to 12 AWG	22 to 14 AWG
Rated voltage	DIN Gr. C	250 V ~ and 300 V =	250 V ~ and 300 V =
	NFC Cat. C	250 V ~ and =	250 V ~ and =
Nota	Wire stripping length 7 mm	pre-insulated quickconnect or with thermo shrinkable sleeve	
	Recommended screwdriver 3,5 mm	Tabs can be used as soldered connection	

### 2. Mechanical

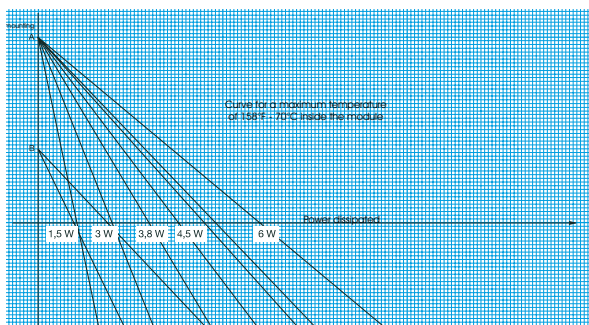
**Body** : polyamide UL 94.V0  
**Working temperature** : -40°C to +100°C  
**Arc creepage index** : KB 600  
**Storage temperature** : -55°C to +110°C



### 3. Thermal

- For maximum reliability, the mounting method must be determined according to the power dissipated in the interface module, and the ambient temperature around the modules.

- Inversely, knowing the type of mounting, A or B, and the power dissipated, the curve (left) determines the maximum recommended ambient temperature.

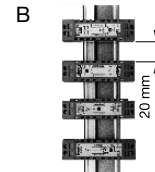


Maximum temperature near the modules

#### horizontal assembly



#### vertical assembly



The characteristics shown on the left are given as a guide and may be modified without notice

## Accessories

### Printed circuit boards

Material : Epoxy resin UL94 V0

- Thickness of copper : 35 µm

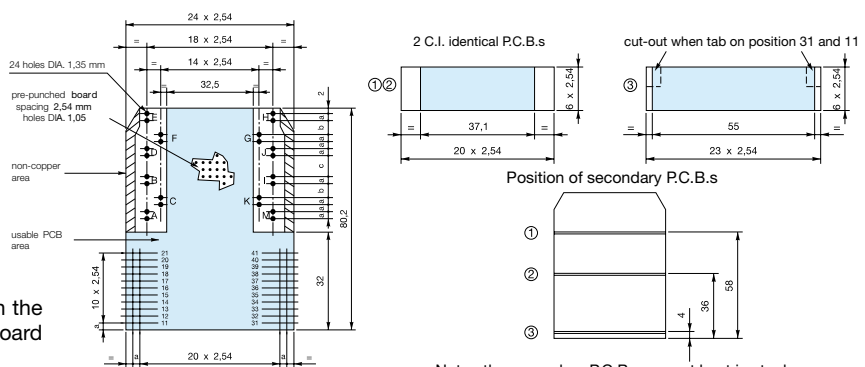
- Thickness of circuit : 0.8 mm

Prepunched boards

CI 11.P1

1SNA 175 207 R0700

Note : Secondary P.C.B. can be adapted in which the customers is free to select the desired mother board connection system.



Note : the secondary P.C.B.s are not kept in stock



# Empty modules

"series 30 000"

## Features

A series 10 000 module is made of three parts :

- Body of molded polyamide (holding the terminals).
- Two polyamide end plates of different thickness, which, snapped onto the body, protect the electronic components and determine the overall spacing.

Spacing	Components	
	Body	End plate
11,5	1 x EB...	2 x <b>PFN 1</b>
15	1 x EB...	(1 x <b>PFN 1</b> ) + (1 x <b>PFN 3</b> )
18,5	1 x EB...	2 x <b>PFN 3</b>

### Accessories

Marking method

RC55

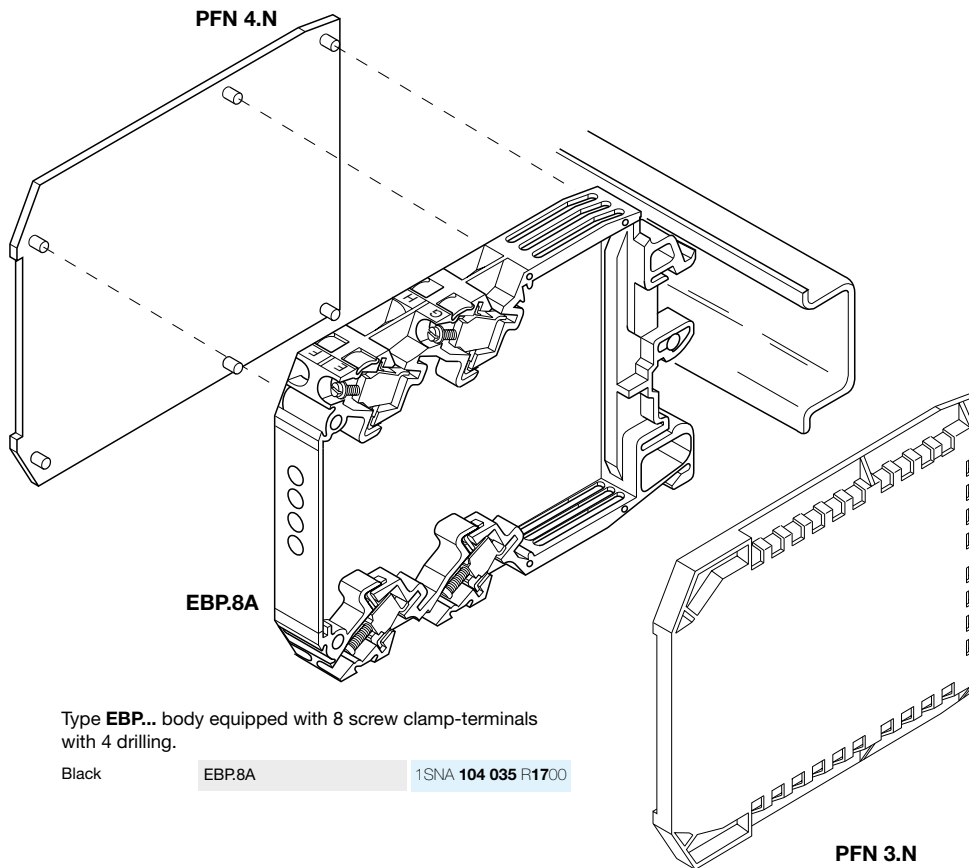
see marking

End plate with airing holes **PFN 1.N** - Thickness 1 mm.

Black

PFN 1.N

1SNA 103 834 R1400



Type **EBP...** body equipped with 8 screw clamp-terminals with 4 drilling.

Black

EBP.8A

1SNA 104 035 R1700

**PFN 3.N**

End plate with airing holes type **PFN 3.N** - Thickness 4.5 mm.

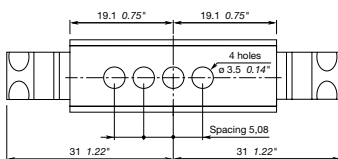
Black

PFN 3.N

1SNA 103 836 R1600

## Option

Type "EBP" body with 4 holes for indicator or potentiometers, etc...



## How to order

Indicate the part numbers of an insulator and the 2 end plates.

**Example :** for a 15 mm spacing module equipped with 8 screw-clamp connections, you must order :

- 1 standard type black
- 1 end plate 1 mm black
- 1 end plate 4,5 mm black

EBP.8A  
PFN 1.N  
PFN 3.N

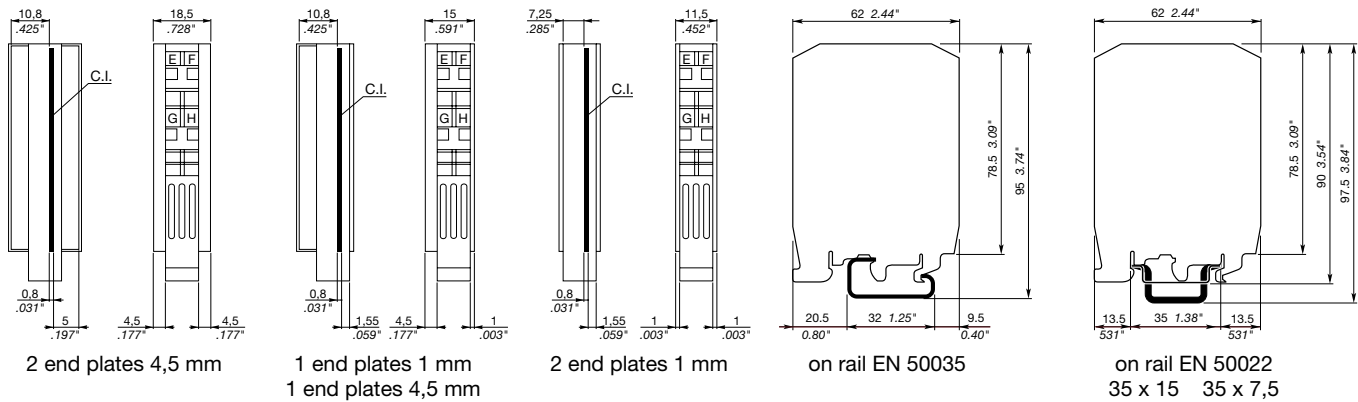
1SNA 104 035 R1700  
1SNA 103 834 R1400  
1SNA 103 836 R1600

# Empty modules

"series 30 000"

## Dimensions

Component holder spacing is determined by required internal volume for component packaging.



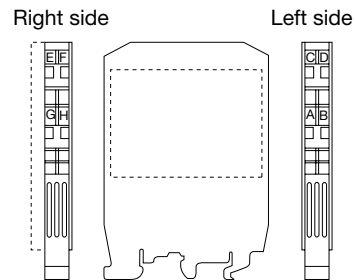
## Electrical and mechanical characteristics

### 1. Electrical

TYPE OF CONNECTION		SCREW-CLAMP A
Connecting capacity	Rigid conductor	0 to 4 mm <sup>2</sup>
	Flexible conductor	0 to 2,5 mm <sup>2</sup>
	AWG	20 to 120 AWG
	DIN Gr. C	250 V ~ and 300 V =
Rated voltage	NFC Cat. C	250 V ~ and =
	CSA	
Remarks	wire stripping length 7 mm	
	Ø recommended screwdriver 3,5 mm	

### 2. Mechanical

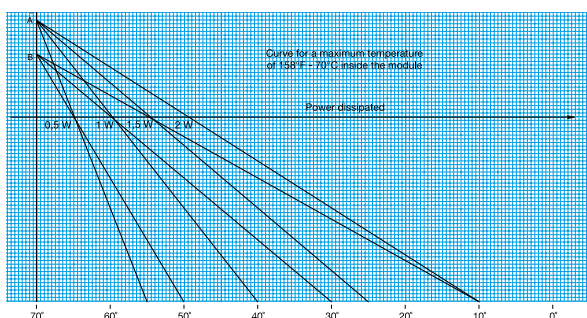
**Body** : polyamide UL 94.V0  
**Working temperature** : -40°C to +100°C  
**Arc creepage index** : KB 600  
**Storage temperature** : -55°C to +110°C



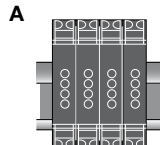
### 3. Thermal

- For maximum reliability, the mounting method must be determined according to the power dissipated in the interface module, and the ambient temperature around the modules.

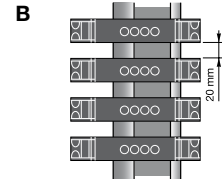
- Inversely, knowing the type of mounting, A or B, and the power dissipated, the curve (left) determines the maximum recommended ambient temperature.



### horizontal assembly

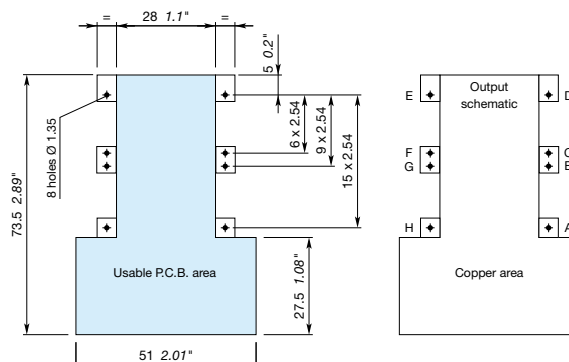


### vertical assembly



The characteristics shown on the left are given as a guide and may be modified without notice

## Printed circuit boards

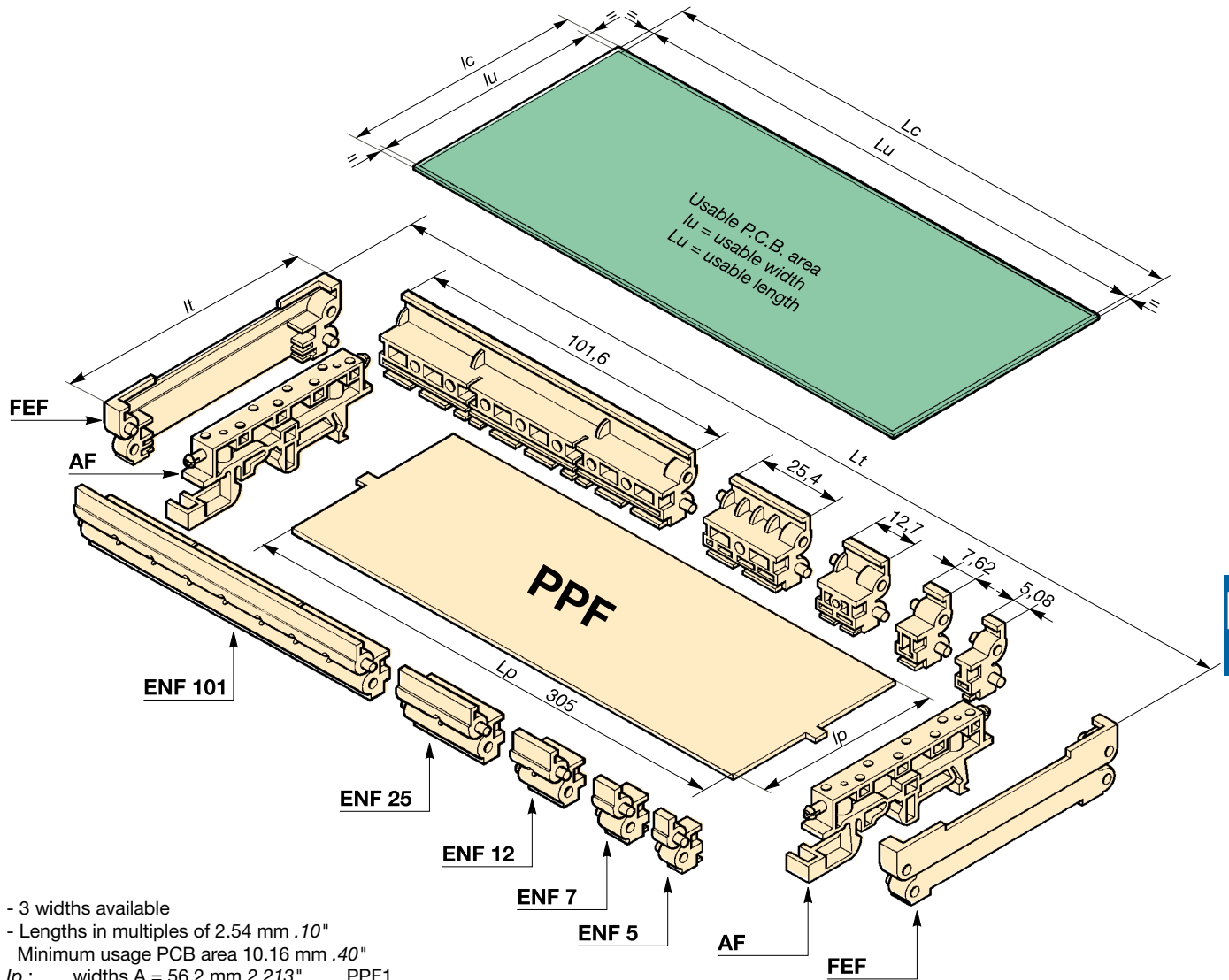


# Empty modules

"series 20 000"

## Features

The modules of the series 20 000 are modular in width and in length.



- 3 widths available
  - Lengths in multiples of 2.54 mm .10"
  - Minimum usage PCB area 10.16 mm .40"
- lp : widths A = 56.2 mm 2.213" PPF1  
 widths B = 81.6 mm 3.213" PPF2  
 widths C = 107 mm 4.21" PPF3

Possible multiple lengths :  $Lu = N \times 2.54 \text{ mm} .10''$   
 (N min. = 8 N max. = 100)

For this, we advise 5 stackable spacers. Make up your assembly in order to obtain the size  $Le$  (total length of spacers) knowing that :  
 $Le = Lu - 10.16 \text{ mm} .40''$

Lengths of spacers

5,08 .20"	ENF 5	1SNA 103 335 R2700
7,62 .30"	ENF 7	1SNA 103 336 R2000
12,7 .50"	ENF 12	1SNA 103 337 R2100
25,4 1.00"	ENF 25	1SNA 103 338 R0200
101,6 4.00"	ENF 101	1SNA 103 356 R0400

You must order : 2 end plates FEF..., 2 universal mounting feet AF... and 1 protective under-plate PPF..., corresponding to the required width.

lu : width of exposed PCB area

66 2.60"	FEF 12.1	1SNA 103 332 R2400	AF 50	1SNA 103 323 R2300	PPF 1	1SNA 103 340 R1000
91,5 3.60"	FEF 12.2	1SNA 103 339 R0300	AF 76	1SNA 103 324 R2400	PPF 2	1SNA 103 354 R0200
117 4.60"	FEF 12.3	1SNA 103 341 R0500	AF 101	1SNA 103 325 R2500	PPF 3	1SNA 103 355 R0300

# Empty modules

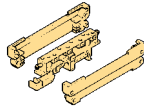
"series 20 000"

## Simplified models

For reduced circuit lengths, ABB offers two simplified versions.

### 1 . $Lu = 10.16 \text{ mm} .40''$ soit $N = 4$

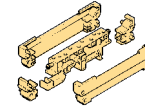
Composition : (1 universal mounting foot only with neither spacers nor protective plate).



Usable PCB area	2 end plates FEF...	1 universal mounting foot AF...
66 x 10,16 2.60" x .40"	1SNA 103 332 R2400	1SNA 103 323 R2300
91,5 x 10,16 3.60" x .40"	1SNA 103 339 R0300	1SNA 103 324 R2400
117 x 10,16 4.60" x .40"	1SNA 103 341 R0500	1SNA 103 325 R2500

### 2 . $Lu = 17.78 \text{ mm} .70''$ soit $N = 7$

Composition : (without protective plate).



Usable PCB area	2 end plates FEF...	1 universal mounting foot AF...	2 spacers ENF 5
66 x 15,24 2.60" x .60"	1SNA 103 332 R2400	1SNA 103 323 R2300	1SNA 103 335 R2700
91,5 x 15,24 3.60" x .60"	1SNA 103 339 R0300	1SNA 103 324 R2400	1SNA 103 335 R2700
117 x 15,24 4.60" x .60"	1SNA 103 341 R0500	1SNA 103 325 R2500	1SNA 103 335 R2700

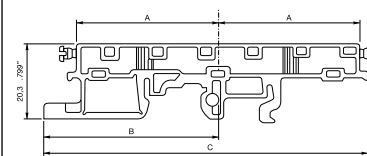
## Overall dimensions

Overall dimensions :  $Lt = Lu + 2.5 \text{ mm} .10''$   $lt = lu + 8.5 \text{ mm} .335''$

Height including rail :  
 $h$  on = 31.5 mm 1.24"  
 $h$  on = 26.5 mm 1.05"  
 $h$  on = 34 mm 1.34"

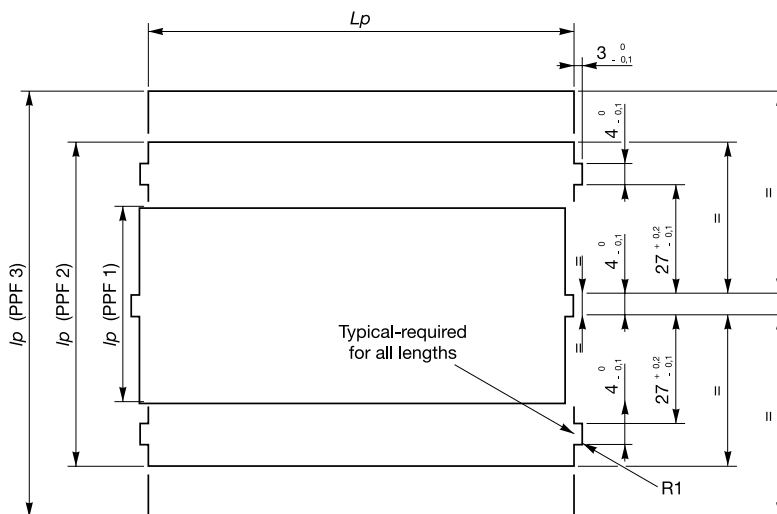
Dimensions of printed circuit :  $Lc = Lu + 1.0 \text{ mm} .04''$   
 thickness : 1.6 mm .063"  
 $lc = lu + 5.0 \text{ mm} .197''$

Spacing : 7,4 mm



Mounting foot	A	B	C
AF 50	25,4 1.00"	33,7 1.32"	61,8 2.43"
AF 76	38,1 1.50"	44,6 1.75"	87,2 3.43"
AF 101	50,8 2.00"	59,3 2.33"	112,6 4.43"

Size limits of protective plates :  $Lp = Lu - 17.8 \text{ mm} .70''$  (cut both sides of  $Lp$ ).

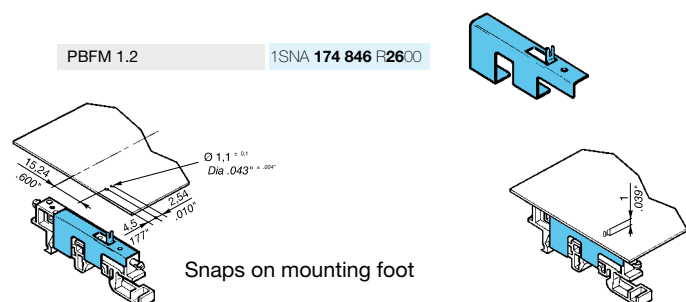


Note : for N of more than 47, we recommend the use of one or several additional universal mounting feet (please consult us).

## Accessories

### Shield, grounding connector

The shield connector 1SNA 174 846 R2600 DIN 1 or DIN 3, allows an electrical connection between the printed circuit board and the rail (double face PCB mandatory). For use with AF 50, AF 76 and AF 101 mounting feet.



# Printed circuit board holder

## "series 20 000"

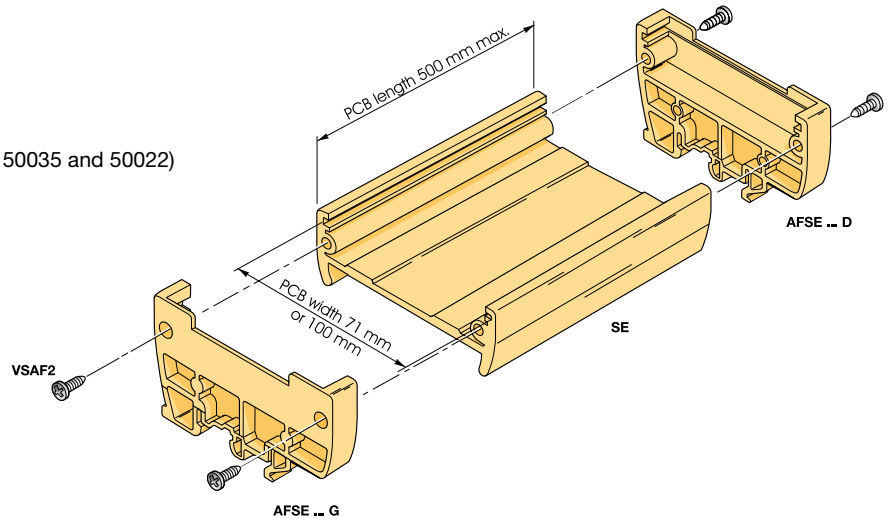
### Features

The extruded PVC serie 20 000 holders allow :

- 2 PCB width : 71 mm or 100 mm
- PCB length : 60 mm to 500 mm
- PCB thickness : 1,6 mm
- Assembly snaps onto DIN 1 or DIN 3 (EN 50035 and 50022)

Complete assembly includes :

- 1 body 71 or 100 mm
- 1 left foot section
- 1 right foot section
- 4 screws per foot



Actual PCB width	71 mm 2.795"		100 mm 3.937"		Std packaging
Body L = 500 mm	SE 71	1SNA 103 868 R0600	SE 100	1SNA 103 885 R1000	1 m
Left foot section	AFSE 71 G	1SNA 103 797 R2700	AFSE 100 G	1SNA 103 969 R0300	10
Right foot section	AFSE 71 D	1SNA 103 796 R2600	AFSE 100 D	1SNA 103 968 R0200	10
Screw for foot	VSAF 2	1SNA 178 135 R2100	VSAF 2	1SNA 178 135 R2100	100

### Material

Body : (delivered in 1000 mm length)  
PVC rigid extruded class M2, orange

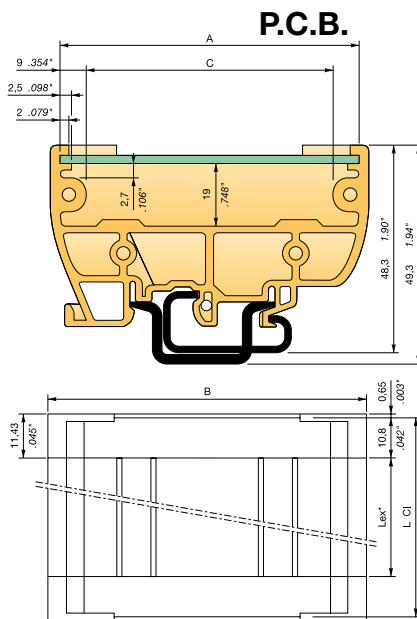
End plate and mounting foot :  
Molded polyamide UL 94 V0 orange

Working temperature: -20 °C to +70 °C

Storage temperature: -20 °C to +70 °C

### Dimensions

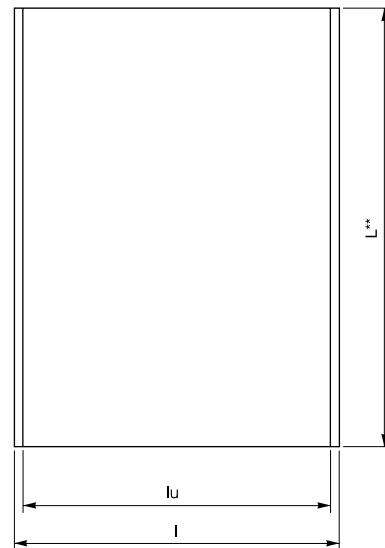
#### Holder



Extruded rail length  $Lex = LCI - 21,2$  (0,4 mm theoretic clearance between P.C.B. and mounted support)  
\* Rail length margin  $L : + 0,5 .020" + 0,2 .008"$

	SE 71		SE 100	
	mm	inch.	mm	inch.
A	71	2.79"	100	3.94"
B	75	2.96"	104	4.09"
C	57,8	2.28"	86,5	2,95"

Overall dimensions = P.C.B. length + 1,5 mm



\*\* P.C.B. length margin  $L : 0 .000" + 0,2 -.008"$   
(1) : For component pins less than 2 mm.  
(2) : For component pins longer than 2 mm.

	SE 71		SE 100	
	mm	inch.	mm	inch.
I	71	2.79"	100	3.94"
Iu (1)	66	2.60"	95	3.74"
Iu (2)	57,8	2.28"	86,5	2,95"

# Printed circuit board holder

## "series 20 000"

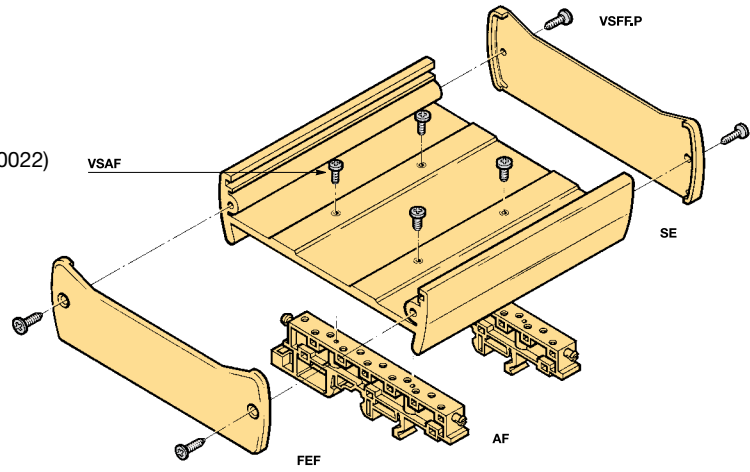
### Features

The extruded PVC serie 20 000 holders allows :

- 2 PCB width : 71 mm or 100 mm
- PCB length : 60 mm to 1000 mm
- PCB thickness : 1,6 mm
- Assembly snaps onto DIN 1or DIN 3 (EN 50035 and 50022)

Complete assembly includes :

- 1 body 71 or 100 mm
- 2 end plates
- 4 screws for end plates
- 2 feet for length L de 60 to 250 mm
- 3 feet for length L de 250 to 500 mm
- 4 feet for length L de 500 to 750 mm
- 5 feet for length L de 750 to 1000 mm
- 2 screws per foot



Actual PCB width	71 mm 2.795"		100 mm 3.937"		Std packaging
Body L = 1000 mm	SE 71	1SNA 103 868 R0600	SE 100	1SNA 103 885 R1000	1 m
End plate	FEF 71	1SNA 103 724 R2500	FEF 100	1SNA 103 687 R2100	10
Screws for end plate	VSFF.P Pozidriv	1SNA 178 100 R1300	VSFF.P1 Pozidriv	1SNA 178 100 R1300	
Foot	AF 50	1SNA 103 323 R2300	AF 76	1SNA 103 324 R2400	10
Screw for foot	VSAF	1SNA 174 582 R1600	VSAF	1SNA 174 582 R1600	100

Note : drilling for screws VSAF are not done.

### Material specification

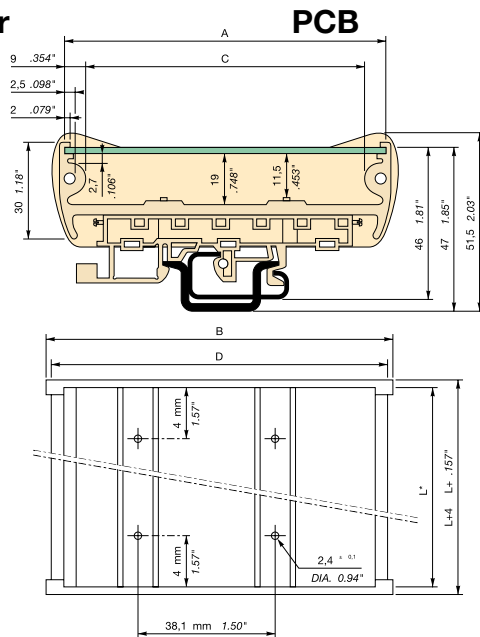
Body : (delivered in 1000 mm length)  
PVC rigid extruded class M2 (orange)

End plate and mounting foot :  
Molded polyamide UL 94 V2 (orange)

Working temperature: -20 °C to +70 °C  
Storage temperature: -20 °C to +70 °C

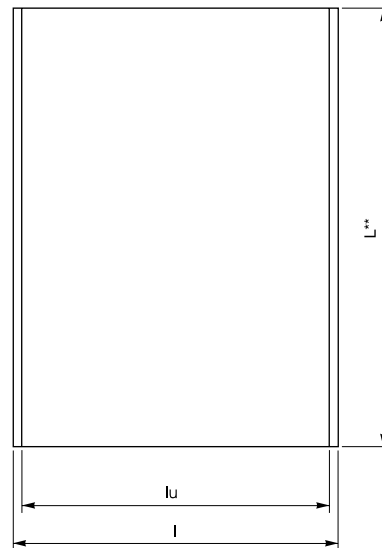
### Dimensions

#### Holder



Drill from bottom in center of grooves  
\* Rail length margin L : + 0,5 .020" + 0,2 .008"

	SE 71		SE 100	
	mm	inch.	mm	inch.
A	71	2.79"	100	3.94"
B	78	3.07"	107	4.21"
C	57,8	2.28"	86,5	2,95"
D	75	2.96"	104	4.09"



(1) : For component pins less than 2 mm.  
(2) : For component pins longer than 2 mm.  
\*\* PCB length margin L : 0 .000" - 0,2 -.008"

	SE 71		SE 100	
	mm	inch.	mm	inch.
I	71	2.79"	100	3.94"
lu (1)	66	2.60"	95	3.74"
lu (2)	57,8	2.28"	86,5	2,95"