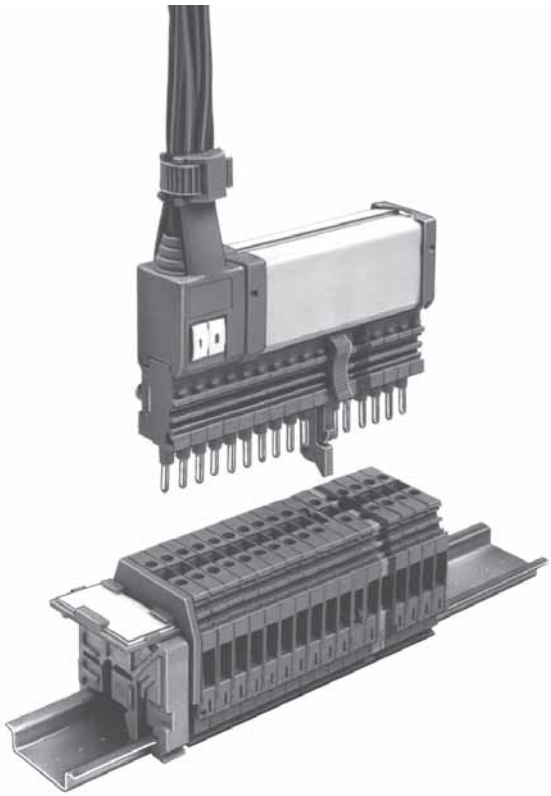
Terminal block assembly modular connectors



This modular connector is assembled using standard components and is used with standard terminal blocks.

Applications include prewired harnesses to simplify field wiring by eliminating mistakes. Time saving.

The connector can be plugged-in on the top of the blocks for applications requiring frequent testing or disconnect (this application requires a block equipped with a test socket : see following pages).

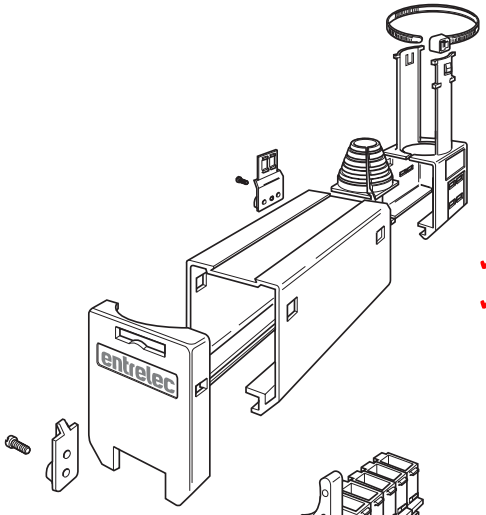
The connector can be screwed in on the side of a standard block for applications requiring few disconnects and testing.

Wiring capacity of up to 12 AWG, protective cover and wire holder, and marking and keying make this unit very versatile and efficient.

Factory preassembled connectors are available on specification (connection of the plug on request).

Protective covers - *see "components of protective covers" on following pages*

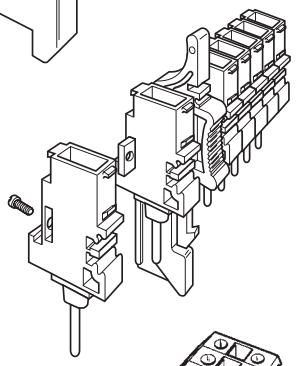
Reversible grey plastic body, cable-clamp included.



- ✓ CPCP...
- ✓ CPCI

Plugs - *see "Plugs components" on following pages*

Made of connection elements, ground connection elements, and 1 or 2 key elements.



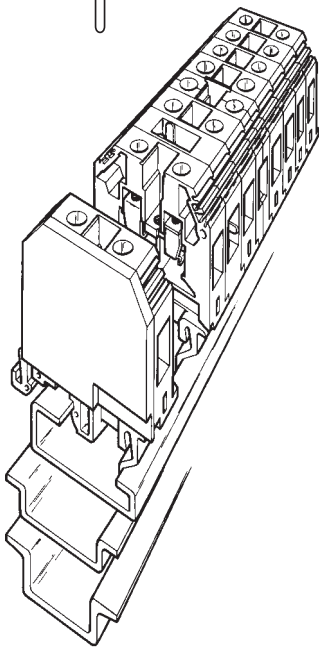
- ✓ CF
- ✓ CFP
- ✓ DM 6

Sockets - *see "Sockets components" on following pages*

Made of terminal blocks, ground blocks equipped with a flexible test socket, and 1 or 2 key elements.

These blocks are equipped with a flexible contact for plugs insertion in position 2.

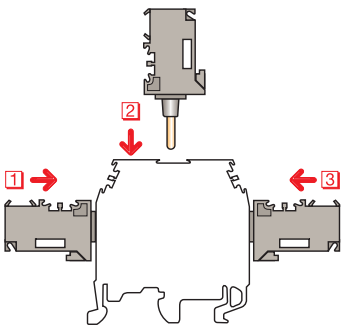
The blocks listed on following page are normally in stock. Other blocks can be equipped, on request, with the flexible contact (consult us).



- ✓ M 4/6.C
- ✓ M 4/6.PC
- ✓ M 6/8.C
- ✓ M 10/10.C
- ✓ M 16/12.C
- ✓ DF 6

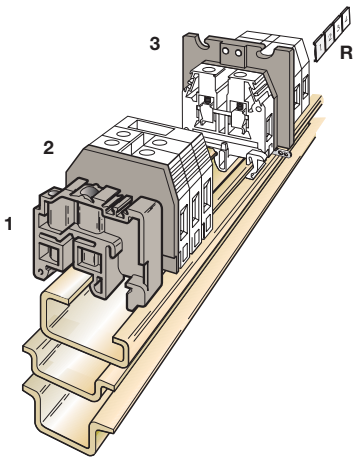
3 mounting possibilities

- It is possible to plug the connectors in position 2 in blocks equipped with a flexible socket for 6, 8, 10 and 12 mm spacing sizes.
- It is possible to plug the connectors in position 1 and 3 directly in the wires' place inside the wire clamps of terminal blocks type **M4/6**, **M6/8**, **M10/10**; the blocks type **M16/12** cannot be mounted this way.



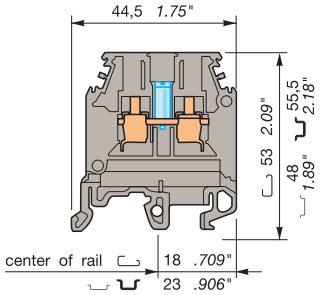
Socket components

DIN 1 - 3



M 4/6.C

Spacing 6 mm + 0,05 *(.238")*

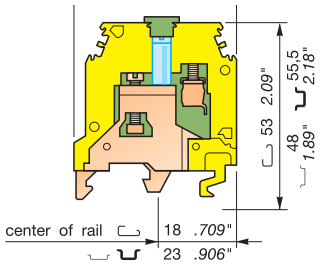


Grey M 4/6.C 1SNA **115 208** R**04**00

6 mm terminal block, equipped with a flexible test socket DIA. 2.5 mm *.10"* for connector.

M 4/6.PC

Spacing 6 mm + 0,05 *(.238")*

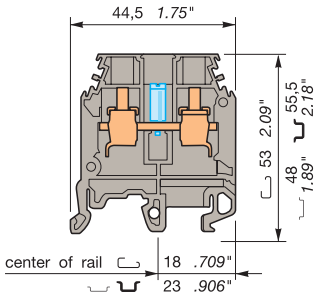


green/yellow M 4/6.PC 1SNA **165 294** R**24**00

6 mm ground block, equipped with a flexible test socket DIA. 2.5 mm *.10"* for connector.

M 6/8.C

Spacing 8 mm - 0,05 *(.315")*



Grey M 4/8.C 1SNA **115 209** R**05**00

8 mm terminal block, equipped with a flexible test socket DIA. 2.5 mm *.10"* for connector.

If the last block of the assembly is a terminal block, an end section is required.

Characteristics

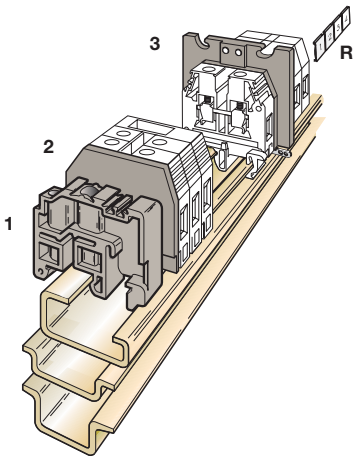
		IEC NFC DIN	UL	CSA	IEC NFC DIN	UL	CSA	IEC NFC DIN	UL	CSA
Wire size mm² / AWG	Rigid	0,2 - 4 mm²	22-10 AWG	22-10 AWG	0 - 4 mm²			0,5 - 10 mm²	22-8 AWG	24-8 AWG
	Flexible	0,22 - 4 mm²	22-10 AWG	22-10 AWG	0 - 4 mm²			0,5 - 6 mm²	22-8 AWG	24-8 AWG
Rated voltage		800 V	600 V	600 V				800 V	600 V	600 V
Rated current		32 A	30 A	25 A				41 A	50 A	55 A
Rated wire size		4 mm²	10 AWG	10 AWG	4 mm²			6 mm²	8 AWG	8 AWG
Wire strip. length - Recomm. screwdriver		9,5 mm / *.37"* - DIA. 4 mm / *.157"*			12 mm / *.47"* - DIA. 4 mm / *.157"*			12 mm / *.47"* - DIA. 4-5 mm / *.157"-.197"*		
Recommended torque		0,5-0,8 Nm / *4.4-7.1 lb.in.*			0,4-0,6 Nm / *3.5-5.3 lb.in.*			0,8-1 Nm / *7.1-8.9 lb.in.*		

Accessories

			Type		Part numbers	Type		Part numbers	Type		Part numbers
1	End stop (all rails)		BAM	th. 9.1 mm	1SNA **103 002** R**26**00	BAM	th. 9.1 mm	1SNA **103 002** R**26**00	BAM	th. 9.1 mm	1SNA **103 002** R**26**00
2	End section	grey	FEM6	th. 2.8 mm	1SNA **118 368** R**16**00				FEM6	th. 2.8 mm	1SNA **118 368** R**16**00
		yellow				FEM6	th. 2.8 mm	1SNA **103 062** R**21**00			
3	Separator end section	grey	SCF6	th. 3.0 mm	1SNA **118 707** R**03**00	SCF6	th. 3.0 mm	1SNA **118 707** R**03**00	SCF6	th. 3.0 mm	1SNA **118 707** R**03**00
R	See section on markers	marking method	RC65 - RC610 *Other accessories, see standard blocks pages*			RC65 - RC610			RC65 - RC610 *Other accessories, see standard blocks pages*		

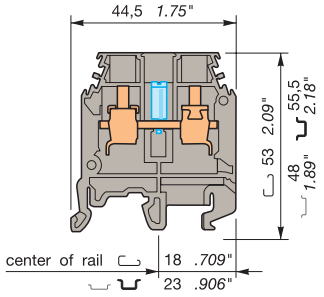
Socket components

DIN 1 - 3



M 10/10.C

Spacing 10 mm - 0,05 *(.394")*

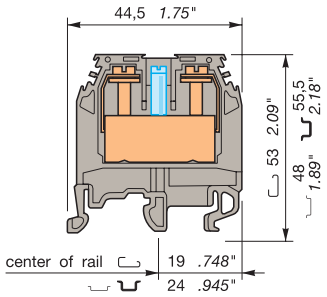


Grey M 10/10.C 1SNA **115 228** R**27**00

10 mm terminal block, equipped with a flexible test socket DIA. 2.5 mm *.10"* for connector.

M 16/12.C

Spacing 12 mm - 0,1 *(.473")*

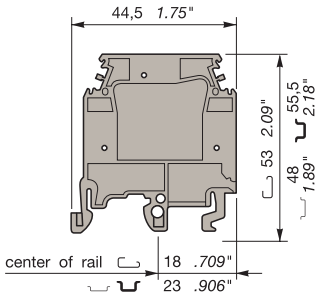


Grey M 16/12.C 1SNA **115 210** R**21**00

12 mm terminal block, equipped with a flexible test socket DIA. 2.5 mm *.10"* for connector.

DF 6

Spacing 6mm + 0.05 *(.238")*



Grey DF 6 1SNA **113 086** R**03**00

Key element snapped onto the rail, placed within the terminal blocks in the required place.
2 slots for markers.
Marking method (11)

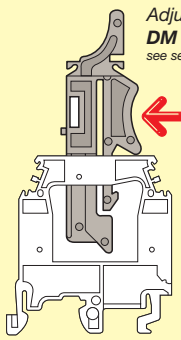
If the last block of the assembly is a terminal block, an end section is required.

Characteristics

		IEC NFC DIN	UL	CSA	IEC NFC DIN	UL	CSA
Wire size mm² / AWG	Rigid	0,5 - 16 mm²	20-6 AWG	18-6 AWG	2,5 - 25 mm²	14-4 AWG	14-4 AWG
	Flexible	0,5 - 10 mm²	20-6 AWG	18-6 AWG	2,5 - 16 mm²	14-4 AWG	14-4 AWG
Rated voltage		800 V	600 V	600 V	800 V	600 V	600 V
Rated current		57 A	65 A	70 A	85 A	85 A	100 A
Rated wire size		10 mm²	6 AWG	6 AWG	16 mm²	4 AWG	4 AWG
Wire strip. length - Recomm. screwdriver		12 mm / *.47"* - DIA. 5,5-6 mm / *.217"-.238"*			14 mm / *.55"* - DIA. 5,5 mm / *.22"*		
Recommended torque		1,2-1,4 Nm / *10.6-12.3 lb.in.*			1,2-1,4 Nm / *10.6-12.3 lb.in.*		

Accessories

			Type		Part numbers	Type		Part numbers
1	End stop (all rails)		BAM	th. 9,1 mm	1SNA **103 002** R**26**00	BAM	th. 9,1 mm	1SNA **103 002** R**26**00
2	End section	grey	FEM6	th. 2,8 mm	1SNA **118 368** R**16**00	FEM12	th. 3 mm	1SNA **118 618** R**01**00
		yellow						
3	Separator end section	grey	SCF6	th. 3,0 mm	1SNA **118 707** R**03**00	SCF12	th. 3,0 mm	1SNA **113 102** R**10**00
			Other accessories, see standard blocks pages			Other accessories, see standard blocks pages		
R	See section on markers	marking method	RC65 - RC610 - RC810 - RC1010			RC65 - RC610 - RC810 - RC1010		

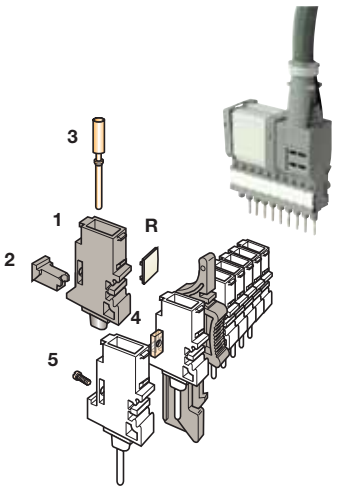


Adjustable key element ***DM 6***
see section "Plug components"

To unlock the connector, press the ribbed part of the key element

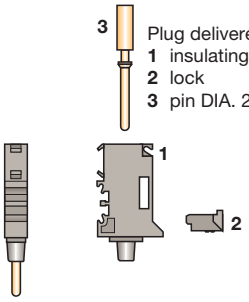
Fixed key element ***DF 6***

Plug components



CF

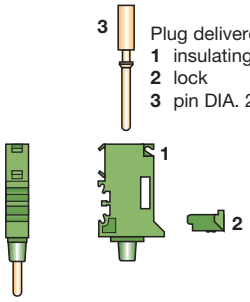
Spacing 6 mm + 0,05 *(.238")*



0.22-0.34 mm²	CF	1SNA **115 074** R**1**000
0.22-0.5 mm²	CF	1SNA **115 080** R**1**300
1.0 mm²	CF	1SNA **115 075** R**1**100
1.5 mm²	CF	1SNA **115 076** R**1**200
2.5 mm²	CF	1SNA **115 077** R**1**300
4.0 mm²	CF	1SNA **115 079** R**2**500

CFP

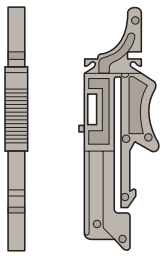
Spacing 6 mm + 0,05 *(.238")*



0.22-0.34 mm²	CFP	1SNA **105 007** R**2**500
0.22-0.5 mm²	CFP	1SNA **105 018** R**2**700
1.0 mm²	CFP	1SNA **105 008** R**0**600
1.5 mm²	CFP	1SNA **105 009** R**0**700
2.5 mm²	CFP	1SNA **105 010** R**2**300
4.0 mm²	CFP	1SNA **105 019** R**2**000

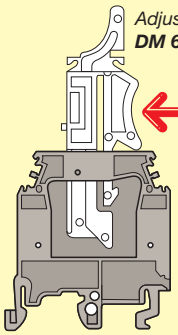
DM 6

Spacing 6 mm + 0,05 *(.238")*



Grey **DM 6** 1SNA **114 547** R**1**600

Adjustable key element to be mounted on the fixed key element **DF 6.**
Slides on the assembly bar close to the plug elements in the required place (+ potential separators). Permits to polarize and lock the connector on the assembly.



Characteristics

		IEC NFC	IEC DIN	UL/CSA	IEC NFC	IEC DIN	UL/CSA
Wire size mm² / AWG	KY 30	0.22 - 0.34 mm²		22 - 22 AWG	0.22 - 0.34 mm²		22 - 22 AWG
	KY 30 and H05.VK	0.22 - 0.5 mm²		22 - 20AWG	0.22 - 0.5 mm²		22 - 20AWG
	H05.VK	1.0 mm²		18 AWG	1.0 mm²		18 AWG
	H07.VR or VK	1.5 mm²		16 AWG	1.5 mm²		16 AWG
	H07.VR or VK	2.5 mm²		14 AWG	2.5 mm²		14 AWG
	H07.VR or VK	4.0 mm²		12 AWG	4.0 mm²		12 AWG
Rated voltage		800 V					
Rated current		15 A					
Rated wire size		1 mm²			1 mm²		
Wire stripping length		10 mm / .39"			10 mm / .39"		

Components

A PLUG ELEMENT CONSISTS OF THE THREE FOLLOWING PARTS, EACH ELEMENT CAN BE ORDERED USING ITS OWN PART NUMBER OR USING ITS COMPONENTS' PART NUMBERS

1	Insulating body	SIC	grey	1SNA **113 108** R**2**600	SIC	green	1SNA **103 265** R**0**100	
2	Lock	VRC	grey	1SNA **113 110** R**1**300	VRC	grey	1SNA **113 110** R**1**300	
3	Pin DIA. 2,5 mm *.10"*	BRC	0,22 to 0,5 mm²	1SNA **174 558** R**0**500	BRC	0,22 to 0,5 mm²	1SNA **174 558** R**0**500	
		BRC	1.0 mm²	1SNA **173 906** R**2**200	BRC	1.0 mm²	1SNA **173 906** R**2**200	
		BRC	1.5 mm²	1SNA **173 907** R**2**300	BRC	1.5 mm²	1SNA **173 907** R**2**300	
		BRC	2.5 mm²	1SNA **173 908** R**0**400	BRC	2.5 mm²	1SNA **173 908** R**0**400	
		BRC	4.0 mm	1SNA **174 601** R**0**100	BRC	4.0 mm	1SNA **174 601** R**0**100	

Accessories

		Type		Part numbers	Type		Part numbers	Type		Part numbers
4	Assembly bar	BDA	**see table hereunder**		BDA	*see table hereunder*		BDA	*see table hereunder*	
5	Assembly screw	VSA		1SNA **164 408** R**0**600	VSA		1SNA **164 408** R**0**600	VSA		1SNA **164 408** R**0**600
		Mounting screw to be ordered for mounting without cover. These screws are delivered with the cover sub-assembly.								
6	Separator grey *(see section "Assembly")*	IN10	th. 1.0 mm	1SNA **113 112** R**0**100	IN10	th. 1.0 mm	1SNA **113 112** R**0**100	IN10	th. 1 mm	1SNA **113 112** R**0**100
		IN16	th. 1.6 mm	1SNA **113 114** R**0**300	IN16	th. 1.6 mm	1SNA **113 114** R**0**300	IN16	th. 1.6 mm	1SNA **113 114** R**0**300
		IN20	th. 2.0 mm	1SNA **113 115** R**0**400	IN20	th. 2.0 mm	1SNA **113 115** R**0**400	IN20	th. 2 mm	1SNA **113 115** R**0**400
		IN24	th. 2.4 mm	1SNA **113 116** R**0**500	IN24	th. 2.4 mm	1SNA **113 116** R**0**500	IN24	th. 2.4 mm	1SNA **113 116** R**0**500
R	See section on markers marking method	RC65 - RC610			RC65 - RC610					

BDA - Assembly bar

Plug components, separators and adjustable key elements slide on this bar.

BDA is defined regarding the required assembly. For this, calculate the length of these accessories in millimeters using the following formulas :

Assembly with 1 key element
not mounted at the end of the assembly

Spacing (n-1) + 12

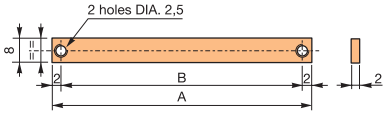
Assembly with 2 key elements
1 at each end of the assembly

n (Spacing) + 12

n = *number of elements included into the plug*
L = *length of the plug*

Machining diagram for bar processing by customer, supplied in length 1000 mm.

L mm	A mm	B mm	Bar BDA
24	22	18	1SNA **167 054** R**2**000
30	28	24	1SNA **167 055** R**2**100
36	34	30	1SNA **167 056** R**2**200
42	40	36	1SNA **167 057** R**2**300
48	46	42	1SNA **167 058** R**0**400
54	52	48	1SNA **167 059** R**0**500
60	58	54	1SNA **167 060** R**0**200
66	64	60	1SNA **167 061** R**2**700
72	70	66	1SNA **167 062** R**2**000
78	76	72	1SNA **167 063** R**2**100
84	82	78	1SNA **167 064** R**2**200
90	88	84	1SNA **167 065** R**2**300
96	94	90	1SNA **167 066** R**2**400
102	100	96	1SNA **167 067** R**2**500
108	106	102	1SNA **167 068** R**0**600
114	112	108	1SNA **167 069** R**0**700
120	118	114	1SNA **167 070** R**0**400
1000			1SNA **008 370** R**2**200

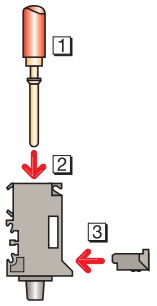


Assembly of a connector

Monting an element
1 Crimp the wire in the pin,
2 Introduce the pin into the insulator,
3 Place the lock by pushing it completely (snaps in).

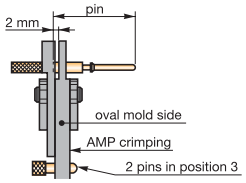
Removing the pin
- Unlatch the lock, using a screwdriver,
- Push back the pin.

Re-mounting of the element
(see "Mounting an element).



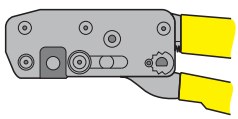
Crimping

Use conductors of 0.22 to 0.34 mm² (24-22 AWG)
and AMP crimping tool 46 256
Remove the positioning stops and use only the oval mold.

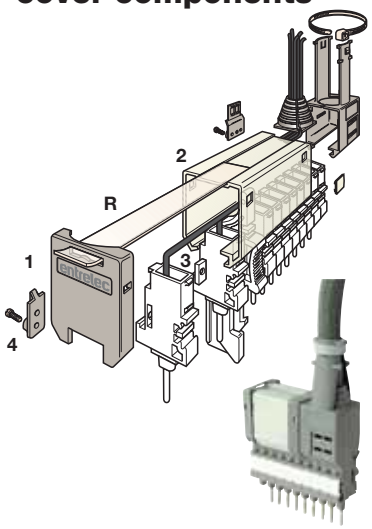


Conductors of 0.22 to 0.5 - 1 -1.5 - 2.5 - 4 mm²
ABB Entrelec crimping tool

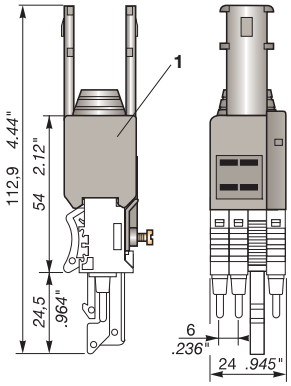
PSC 1SNA **173 181** R**1**300



Plastic protective cover components



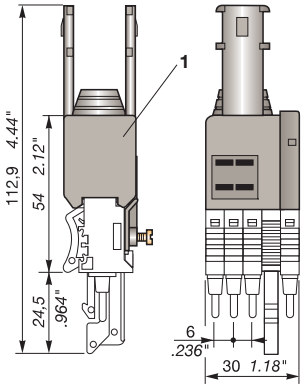
Min. mounting 24 mm .945"



Grey ☐ **CPCP4** 1SNA **114 432** R**0**300

1 Cover sub-assembly

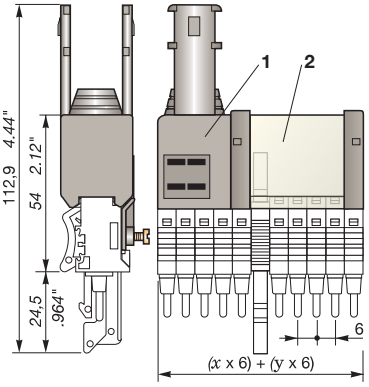
Mounting up to 30 mm *1.18*"



Grey ☐ **CPCP5** 1SNA **114 431** R**0**200

1 Cover sub-assembly

Mounting beyond 30 mm *1.18*"



Grey ☐ **CPCP6** 1SNA **114 430** R**1**500

1 Cover sub-assembly

Grey ☐ **CPCI**

2 Cover - *see table with lengths of bars*

Accessories

		Type	Part numbers
3	Mounting bar	**BDA**	*to be ordered with the plug*
4	Assembly screw	**VSA**	*2 screws delivered with the cover sub-assembly*
R	Voir chapitre repérage mode	RC610	

Type	Part numbers
BDA	*to be ordered with the plug*
VSA	*2 screws delivered with the cover sub-assembly*
RC610	

Type	Part numbers
BDA	*to be ordered with the plug*
VSA	*2 screws delivered with the cover sub-assembly*
RC610 - RTM9	

Part numbers of covers and mounting bars

BDA and **CPCI** have to be defined regarding the required assembly. For this, calculate the length of these accessories in milimeters using the following formulas :

Assembly with 1 key element - not mounted at the end of the assembly
(see page "**Assembly**")

Spacing (n-1) + 12

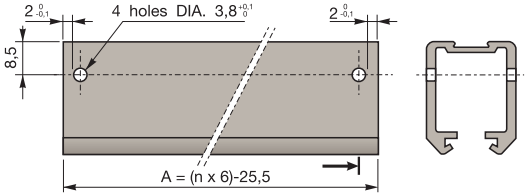
Assembly with 2 key elements - 1 at each end of the assembly
(see page "**Assembly**")

n (Spacing) + 12

(**n** = *number of plugs in the connector)*

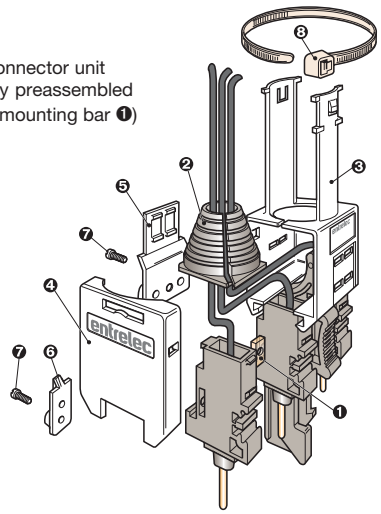
Length mm	Bar BDA	Cover 2 CPCI	Cover sub- 1 assembly CPCP...
24	1SNA **167 054** R**2**000	-	1SNA **114 432** R**0**300
30	1SNA **167 055** R**2**100	-	1SNA **114 431** R**0**200
36	1SNA **167 056** R**2**200	1SNA **114 353** R**2**300	1SNA **114 430** R**1**500
42	1SNA **167 057** R**2**300	1SNA **114 354** R**2**400	1SNA **114 430** R**1**500
48	1SNA **167 058** R**0**400	1SNA **114 356** R**2**600	1SNA **114 430** R**1**500
54	1SNA **167 059** R**0**500	1SNA **114 358** R**0**000	1SNA **114 430** R**1**500
60	1SNA **167 060** R**0**200	1SNA **114 359** R**0**100	1SNA **114 430** R**1**500
66	1SNA **167 061** R**2**700	1SNA **114 361** R**2**300	1SNA **114 430** R**1**500
72	1SNA **167 062** R**2**000	1SNA **114 375** R**2**100	1SNA **114 430** R**1**500
78	1SNA **167 063** R**2**100	1SNA **114 377** R**2**300	1SNA **114 430** R**1**500
84	1SNA **167 064** R**2**200	1SNA **114 380** R**2**300	1SNA **114 430** R**1**500
90	1SNA **167 065** R**2**300	1SNA **114 381** R**1**000	1SNA **114 430** R**1**500
96	1SNA **167 066** R**2**400	1SNA **114 383** R**1**200	1SNA **114 430** R**1**500
102	1SNA **167 067** R**2**500	1SNA **114 385** R**1**400	1SNA **114 430** R**1**500
108	1SNA **167 068** R**0**600	1SNA **114 390** R**2**500	1SNA **114 430** R**1**500
114	1SNA **167 069** R**0**700	1SNA **114 401** R**1**500	1SNA **114 430** R**1**500
120	1SNA **167 070** R**0**400	1SNA **114 404** R**1**000	1SNA **114 430** R**1**500
1000	1SNA **008 370** R**2**200	1SNA **114 427** R**0**600	1SNA **114 430** R**1**500

Machining diagram for cut of covers by the user, sold in length of 1000 mm.



Assembly of the cover on a connector unit up to 30 mm.

(the connector unit already preassembled on its mounting bar ❶)



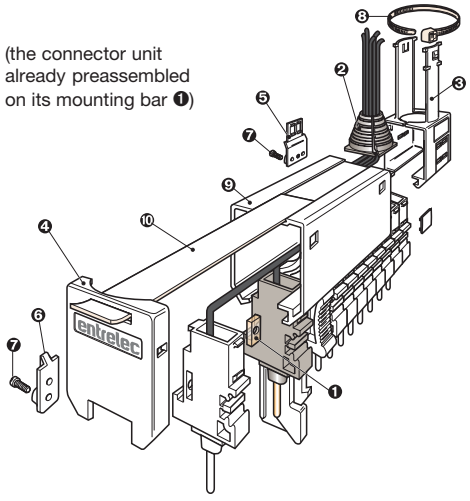
Assembly procedure

1. Cut the wire-guide ❷ if necessary, to the required diameter and close it around the wire.
2. Place the wire-guide in the cover ❸ taking care to orientate it correctly (**ABB ENTRELEC** marking visible).
3. Slide the cover ❸ over the elements.
4. Snap the cap ❹ on the cover ❸.
5. Snap part ❺ on the cover ❸ and tighten the assembly by the screw ❼ facing the end piece.
6. Lock the cap ❹ using part ❻ and tighten the assembly by a screw ❼.
7. Clamp the wire between the cable-clamp tags, using a wire tie ❽ 4,6 mm to 9 mm wide.

Note : Please note that the cable clamp cover ❸ and the cap ❹ can be mounted either to the right or to the left of the connector unit.

Assembly of the cover on a connector unit beyond 30 mm.

(the connector unit already preassembled on its mounting bar ❶)



Assembly procedure

1. Cut the wire-guide ❷ if necessary, to the required diameter and close it around the wire.
2. Place the wire-guide in the cover ❸ taking care to orientate it correctly (**ABB ENTRELEC** marking visible).
3. Slide the cover ❸ over the elements.
4. Slide the hood ❾ over the elements until it latches on the cover ❸.
5. Snap the cap ❹ onto the hood ❾.
6. Snap part ❺ on the cover ❸ and tighten the assembly by a screw ❼ facing the end piece.
7. Lock the cap ❹ using part ❻ and tighten the assembly by a screw ❼.
8. Clamp the wire between the cable-clamp tags, using a polyamid wire tie ❽, 4,6 mm to 9 mm wide.
9. Mark the hood ❾ if required, using the blank strip ❿ for manual inscriptions.

Assembly

The spacing of the connector assembly is determined in function of the thickness of the plug elements : 6 mm. This spacing increases using separators **IN** to be located between the elements up to 8, 10 or 12 mm spacings.
To get these spacings, see examples hereunder in function of the number of key elements : 1 or 2 (n is the number of elements in the connector).

Example :

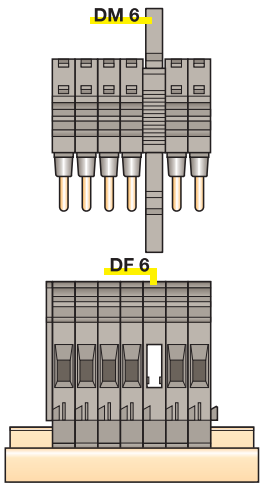
Separators		Number
IN10	=	**2**
IN20	=	**n-2**

IN - Grey separator

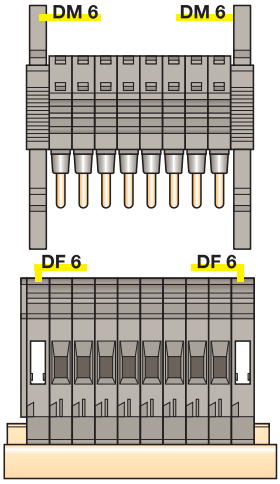
IN10	1SNA **113 112** R**01**00	*th.* **1,0 mm**
IN16	1SNA **113 114** R**03**00	*th.* **1,6 mm**
IN20	1SNA **113 115** R**04**00	*th.* **2,0 mm**
IN24	1SNA **113 116** R**05**00	*th.* **2,4 mm**

Assembly spacing 6 mm

with 1 key element DM 6
NOT MOUNTED AT THE END OF THE ASSEMBLY

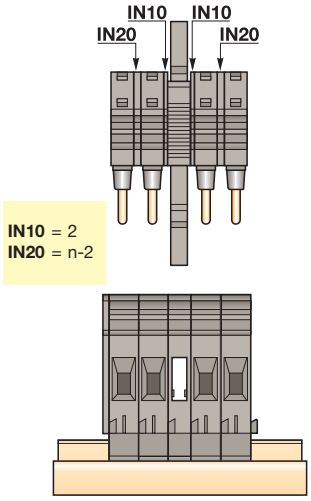


with 2 key elements DM 6
1 AT EACH END OF THE ASSEMBLY

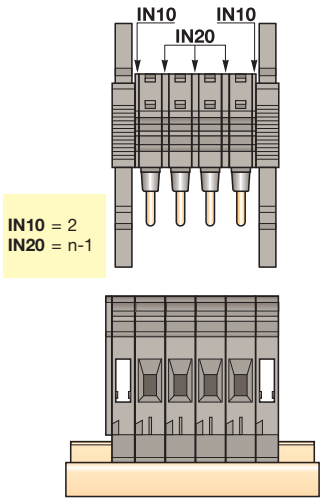


Assembly spacing 8 mm

with 1 key element DM 6
NOT MOUNTED AT THE END OF THE ASSEMBLY

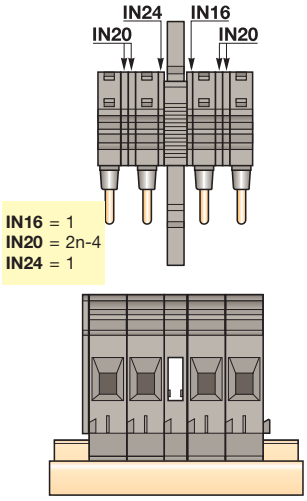


with 2 key elements DM 6
1 AT EACH END OF THE ASSEMBLY

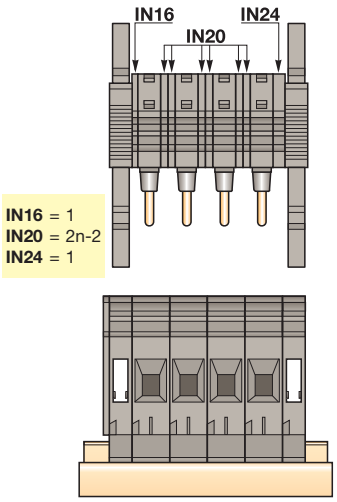


Assembly spacing 10 mm

with 1 key element DM 6
NOT MOUNTED AT THE END OF THE ASSEMBLY

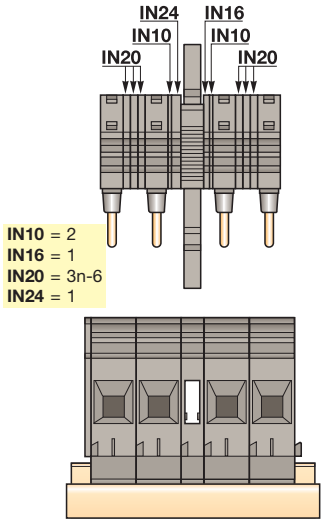


with 2 key elements DM 6
1 AT EACH END OF THE ASSEMBLY

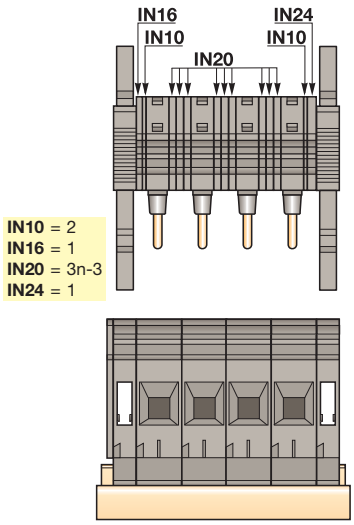


Assembly spacing 12 mm

with 1 key element DM 6
NOT MOUNTED AT THE END OF THE ASSEMBLY

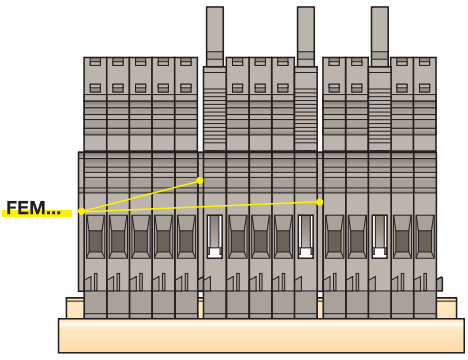


with 2 key elements DM 6
1 AT EACH END OF THE ASSEMBLY



IMPORTANT NOTE

When two or several connectors are located side by side, it is necessary to separate, with an end section, the groups of terminal blocks linked with each socket of connectors, so that nothing interferes with removal of one of the connectors.



HOW TO ORDER AN ASSEMBLED CONNECTOR

Company name .....

.....

Person to contact .....

Quantity ordered .....

Order or quote number .....

.....

Telephone .....

Delivery requested .....

A complete connector is composed of a connector unit and a socket.
Check below

☐ **Connector unit only without wire-clamp without cover**

☐ **Connector unit with wire-clamp without cover**

Wire size .....mm²

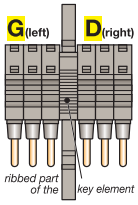
Length of wire .....m.....

for one dimension only,
if several wire sizes required see below

☐ **Connector unit without wire-clamp with cover**

☐ Wire-clamp on the right

☐ Wire-clamp on the left



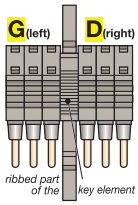
☐ **Connector unit with wire-clamp with cover**

☐ Wire-clamp on the right

☐ Wire-clamp on the left

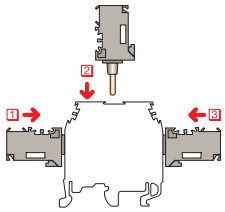
Wire size .....mm²

Length of wire .....m.....



☐ **Socket** Spacing ☐ 6 mm ☐ 8 mm ☐ 10 mm ☐ 12 mm

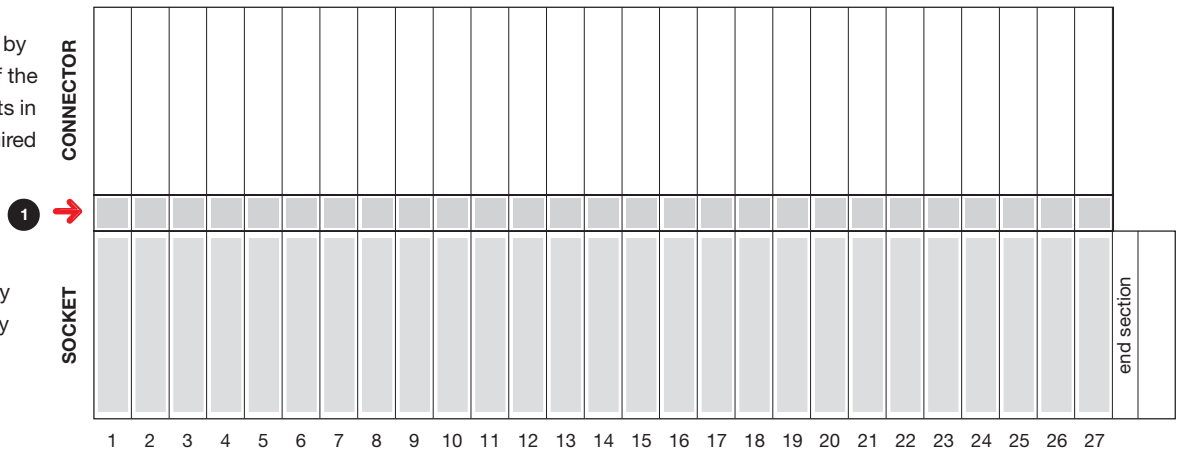
Mounting of the connector on the terminal block ☐ **2** ☐ **1** and **3**



Mounting of the elements

Complete the grid by the part numbers of the connection elements in function of the required wire size

Part to be filled by ABB Entrelec only



FROM **2** TO **14** TERMINALS, **1** OR **2** KEY DEVICES ARE REQUIRED

ABOVE **14**, **2** KEY DEVICES ARE REQUIRED

1 **function required :**

S Standard connection
P Ground point (6 mm spacing only)
D Key device