

CMA SERIE

**PUSH-PULL
OR BREAK-AWAY
CONNECTORS**

FROM 04 TO 22 CONTACTS



ERGONOMICS | STAINLESS STEEL | EMI RFI PROTECTION | MULTI-CONTACTS | WATERTIGHT



BERNIER

TECHNICAL DATA / CMA

■ CLIMATIC AND MECHANICAL CHARACTERISTICS

	CMA push-pull	CMA break-away (L)	CMA break-away (SC)
Unlocking system	Manual action on ring	Axial force ($30N \leq F \leq 70N$)	Axial force ($\leq 25N$)
Operating temperature Range	-55°C to +125°C		
Endurance (connect disconnect)	10 000 operations 5 000 operations (22 contacts)	2 000 operations	10 000 operations 5 000 operations (22 contacts)
Sealing performance	IP68 (Mated and unmated)		
Corrosion resistance Salt fog :	Stainless steel: 96 hours Navy stainless steel: 250 hours Navy bronze: 500 hours		
Vibration	55 Hz to 2 000 Hz, 10 g (6 hours)		
Fluids resistance	Oils and hydrocarbons		

The Push-Pull version and the Break-Away version mate with the same receptacle

■ ELECTRICAL CHARACTERISTICS

	04 contacts	06 contacts	10, 14 contacts	22 contacts*
Working voltage	100 V _{max}		60 V _{max}	
Current rating per contact	4 A _{max}	4 A _{max} (2 cts) 1,5 A _{max} (4 cts)	1,5 A _{max}	2 A _{max}
Gauge (AWG)	18	18 (2 cts) 22 (4 cts)	22	26
Contacts type	Solder buckets / For PCB			
Contacts resistance	≤ 10 mOhms			
Insulation resistance	>1000 MOhms under 500 V _{DC}			
Crosstalk	80 dB to 8 kHz			
Dielectric	500 V _{eff} to 50 Hz			
EMI RFI Protection	Yes			

* CMA 22 contacts compatible with 10G Ethernet. BERNIER CONNECT has performed high-speed 10G Ethernet protocol tests. Latest-generation USB4 and HDMI2.1 protocols can also be tested on request.

■ MATERIAL AND PLATING

	Material	Plating
Connector shell	Stainless steel Navy stainless steel Navy Bronze	Sandblasting or black chrome
Insulator	Thermosetting (04, 06, 10, 14 cts) / PBT (22 cts)	-
Contacts	Copper alloy	Gold over nickel
Ground ring	Beryllium copper	-
Backshell shell	Aluminum alloy	Black chrome or black anodizing



CONNECTORS

TYPE OF SHELL	Weight (Max)
Plug (CMA 5)	30 g
Extension (CMA 1)	20 g
Receptacle (CMA 2)	20 g
Receptacle (CMA 7)	18,5 g
Receptacle (CMA R7)	18,5 g
Dummy receptacle (CMA 6)	16 g
Panel through (CMA 3)	23 g
Panel plug (CMA 11)	46,5 g
Panel plug (CMA 17)	34 g
Panel plug (CMA 18)	34 g
Panel plug (CMA 19)	34 g

Stainless steel version.



ELBOW AND STRAIGHT BACKSHELLS

TYPE OF BACKSHELLS	Weight (Max)
Straight backshell with sleeve (CMA RA7-xx)	26 g
Straight backshell with knurling (CMA R18-xxx)	14 g
Straight backshell with knurling (CMA RA24-xx)	14 g
Straight backshell with knurling (CMA RA02-10)	10 g
Straight backshell with knurling (CMA RA17-76)	14 g
Straight backshell with double knurling (CMA RA19-95)	14 g
Straight backshell (CMA RAI-xx)	20 g
Elbow backshell with knurling (CMA RA81-xxx)	28 g
Elbow backshell at 105° (CMA RA8)	21 g
Elbow backshell at 90° (CMA RA82)	18 g
Short straight backshell with knurling (CMA RA09-95)	6 g

Aluminum version

CAPS

TYPE OF SHELL	TYPE OF CAPS	Weight (Max)
For plug (type 5)	Thermoplastic plug cap (CMA BA06)	4 g
	Metallic plug cap (CMA BA65)	13 g
For receptacle (type 6 et 7) and Panel through (type 3)	Elastomer receptacle cap (CMA BA86)	6 g
	Metallic receptacle cap (CMA BA100)	40 g
For extension (type 1)	Elastomer extension cap (CMA BA94)	6 g
	Metallic extension cap (CMA BA100)	40 g

Other types of caps - contact us

COMPATIBILITY / CMA

Attention: The mating connectors must have the same number of contacts and the same keyway.

Special case: a 10 contacts plug can mate with a 14 contact receptacle.



KEYWAYS / CMA



Receptacle

FRONT VIEW



Plug

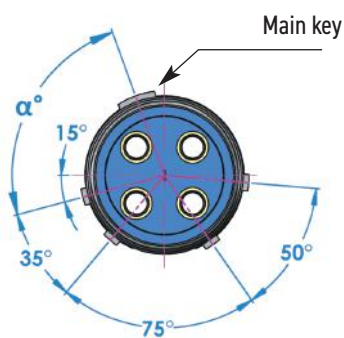
The keyways depend on the main key position. Positions of the 4 small keys, contacts and flats of the receptacle remain the same.

		Keyways						
		N	W	X	Y	Z	P *	T
Angle α	04 contacts	105°	95°	115°	85°	125°	—	**
	06 contacts	80°	70°	90°	60°	100°	—	**
	10-14 contacts	95°	85°	105°	75°	115°	138°	**
	22 contacts	80°	70°	90°	60°	100°	—	**

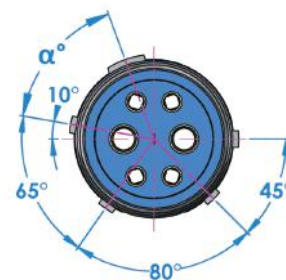
* Keyway P allows the possibility to make 'double keyways' plug ex: CMA 5NP14 mating a N keyway receptacle AND a P keyway receptacle

** Keyway T mates with all keyways—tooling.

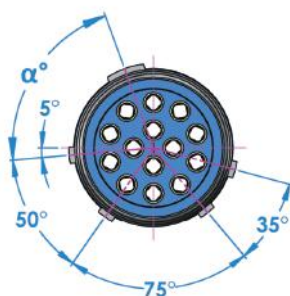
■ RECEPTACLE EXTENSION



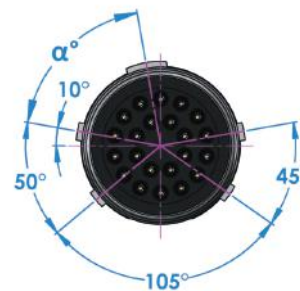
04 contacts



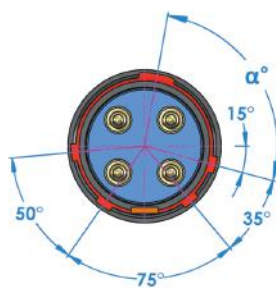
06 contacts



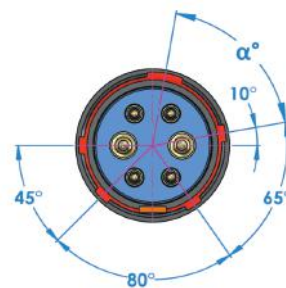
10 - 14 contacts



22 contacts

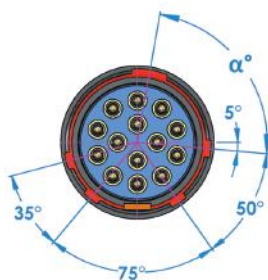


04 contacts

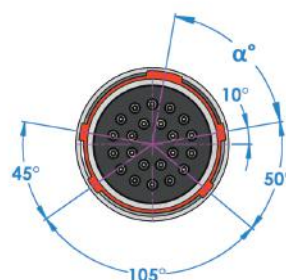


06 contacts

■ PLUG



10 - 14 contacts



22 contacts

■ ITEMS MOUNTED ON CABLE

Straight backshell
with sleeve



Straight backshell



Elbow backshell à 90°



Elbow part 90°
Option



Elbow part 105°
Option



Push-pull plug
Type 5



Break-away plug
Type 5 (L5 ou SC5)



Extension
Type 1



Panel through
Type 3



Thermo-plastic plug
cap



Metallic plug cap



Elastomer extension
cap



Metallic extension
cap



Assembly on cable
Straight backshell with sleeve version



A backshell (necessary for cable assembling) must be ordered
at the same time than a connector

■ ITEMS MOUNTED ON PANEL

Elastomer receptacle cap



Push-pull metallic receptacle cap



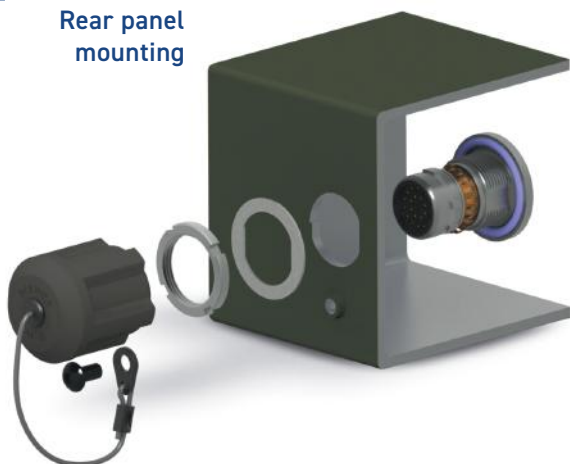
Thermo-plastic panel plug cap



Metallic panel plug cap



Rear panel mounting



Rear panel mounting

Receptacle
Type 7



Dummy
receptacle
Type 6



Panel
through
Type 3



Panel plug
without locking
Type 11



Break-away
panel plug
Type 19



Shutter
CMA B598N



Front panel mounting

Receptacle
Type R7



Push-pull
panel plug
Type 18



Break-away
panel plug
Type 18



* can accept backshell (See items mounted on cable)

PLUGS (TYPE 5) / CMA

PART NUMBERS: **CMA X XX 5 X XX XX XX**

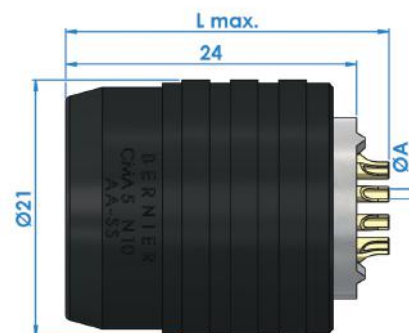
Description	Code
Series	CMA
Surface finish: 'Nothing mentioned' : Black Matte Grey Sandblasted Passivated	" " G
Locking: 'Nothing mentioned' : Push-pull version Break-away version with spring clip Break-away version without locking	L SC
Connector type: Plug	5
Keyways	N, W, X, Y, Z, P, T
Number of contacts	04, 06, 10, 14, 22
Contact: 'Nothing mentioned': solder cup For PCB	Y, YA
Material: 'Nothing mentioned' : stainless steel Marine stainless steel (250 hours salt fog) Marine bronze (500 h salt fog)	SM BM



■ PLUGS WITH SOLDER CUP CONTACTS

Push-Pull version | CMA 5 x xx

Part numbers	Number of contacts	AWG A	L max
CMA 5 x 04	04	AWG 18	27,2
CMA 5 x 06	06	AWG 18	27,2
	(2 contacts) (4 contacts)	AWG 22	27,2
CMA 5 x 10	10	AWG 22	27,2
CMA 5 x 14	14	AWG 22	29,2
CMA 5 x 22	22	AWG 26	25,7



Ex: CMA 5 N10

Break-away version | CMA xx 5 x xx

Part numbers	Number of contacts	AWG A	L max
CMA xx 5 x 04	04	AWG 18	27,2
CMA xx 5 x 06	06	AWG 18	27,2
	(2 contacts) (4 contacts)	AWG 22	27,2
CMA xx 5 x 10	10	AWG 22	27,2
CMA xx 5 x 14	14	AWG 22	29,2
CMA xx 5 x 22	22	AWG 26	25,7



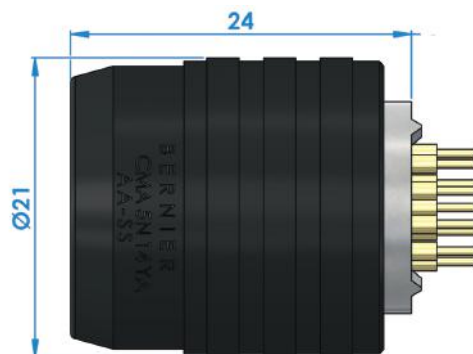
Ex: CMA L 5N14

■ PLUGS WITH CONTACTS FOR PCB

Push-Pull version | CMA 5 x xx xx xx

Part numbers	Types of contacts
CMA 5 x xx Y xx	Y (short version)
CMA 5 x xx YA xx	YA (long version)

Break-away plug with contact for PCB is possible – contact us



Ex : CMA 5N14YA

EXTENSIONS (TYPE 1) / CMA

PART NUMBERS : CMA X 1 X XX XX XX

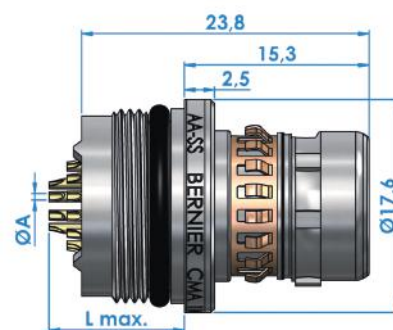
Description	Code
Series	CMA
Aspect: 'Nothing mentioned': sandblasted Black version	B
Connector type: Extension	1
Keyway	N, W, X, Y, Z, P, T
Number of contacts	04, 06, 10, 14, 22
integrated backshell: Nothing mentioned Backshell with knurling	SP
Material: 'Nothing mentioned' : stainless steel Marine stainless steel (250 hours salt fog) Marine bronze (500 h salt fog)	SM BM



■ EXTENSION WITH SOLDER CUP CONTACTS

CMA x 1 x xx xx

Part numbers	Number of contacts	AWG A	L max
CMA x 1 x 04 xx	04	AWG 18	11,4
CMA x 1 x 06 xx	06	AWG 18	11,4
	(2 contacts) (4 contacts)	AWG 22	11,4
CMA x 1 x 10 xx	10	AWG 22	11,4
CMA x 1 x 14 xx	14	AWG 22	13,4
CMA x 1 x 22 xx	22	AWG 26	11,4

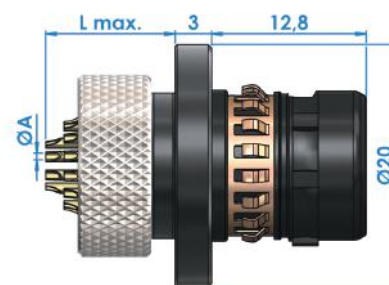


Ex: CMA 1N22

■ EXTENSION WITH SOLDER CUP CONTACTS AND INTEGRATED BACKSHELL

CMA x 1 x xx SP xx

Part numbers	Number of contacts	AWG A	L max
CMA x 1 x 04 SP xx	04	AWG 18	11,4
CMA x 1 x 06 SP xx	06	AWG 18	11,4
	(2 contacts) (4 contacts)	AWG 22	11,4
CMA x 1 x 10 SP xx	10	AWG 22	11,4
CMA x 1 x 14 SP xx	14	AWG 22	13,4
CMA x 1 x 22 SP xx	22	AWG 26	11,4

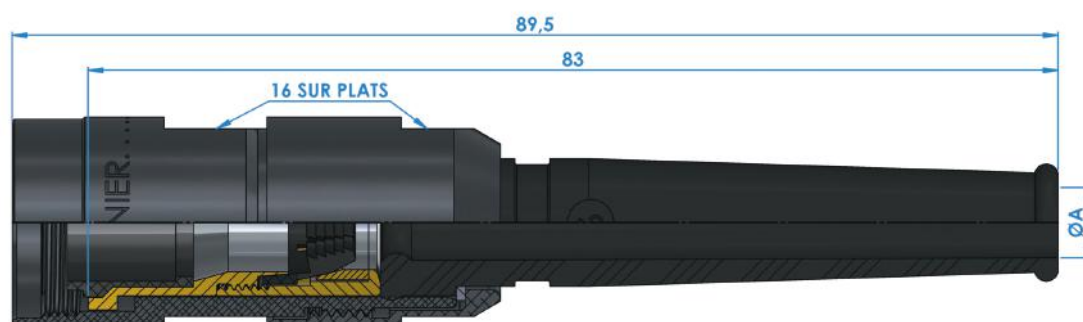


Ex: CMA B 1N22SP

BACKSHELLS / CMA

■ STRAIGHT BACKSHELL WITH SLEEVE

Cable clamp and sleeve included



CMA RA7-XX

CABLE CLAMP



45



55 / 60



70



80

RA7-xx

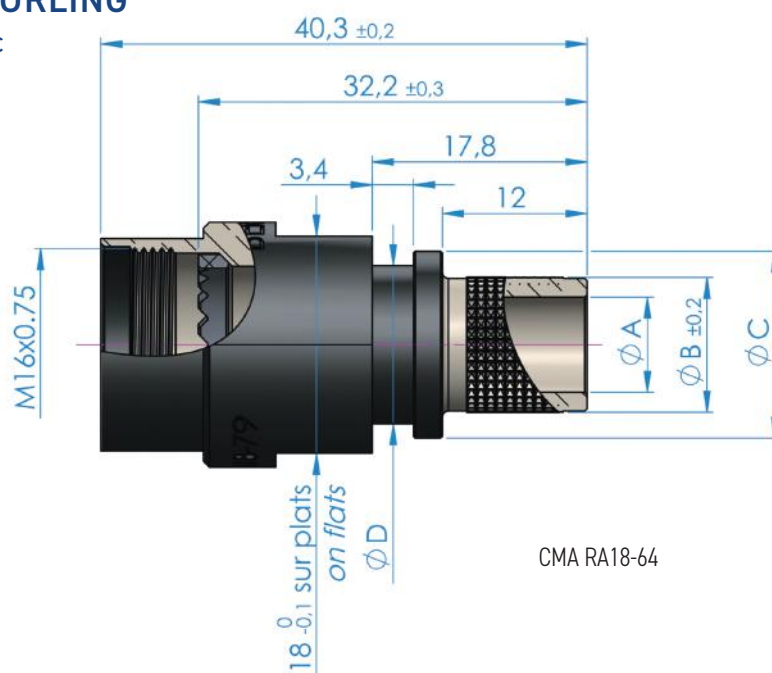
Part numbers	ØA mm
CMA RA7-45	4,5
CMA RA7-55	5,5
CMA RA7-60	6
CMA RA7-70	7
CMA RA7-80	8

■ STRAIGHT BACKSHELL WITH KNURLING

Backshell for cable assembling with metallic collar and heat-shrink boot (not included)

RA18-xxx

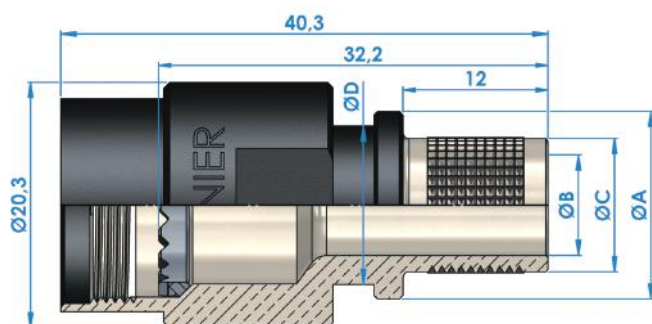
Part numbers	ØA mm	ØB mm	ØC mm	ØD mm
CMA RA18-52	5,2	8,5	13,5	11,5
CMA RA18-64	6,4	9,6	13,9	11,5
CMA RA18-79	7,9	11,2	15,5	13,1
CMA RA18-95	9,5	12,8	17,1	14,8
CMA RA18-111	11,1	14,3	18,7	16,3
CMA RA18-127	12,7	15,9	20,3	17,7



CMA RA18-64

■ STRAIGHT BACKSHELL WITH KNURLING

Backshell for overmolding or cable assembling with metallic collar and heat shrink boot (not included)



CMA RA24-83

RA24-xx

Part numbers	ØA	ØB	ØC	ØD
CMA RA24-52	15,5	5,2	8,3	13,1
CMA RA24-64	15,5	6,4	9,4	13,1
CMA RA24-79	15,5	7,9	11	13,1
CMA RA24-83	15,5	8,3	11	13,1

Diameters A and D don't change

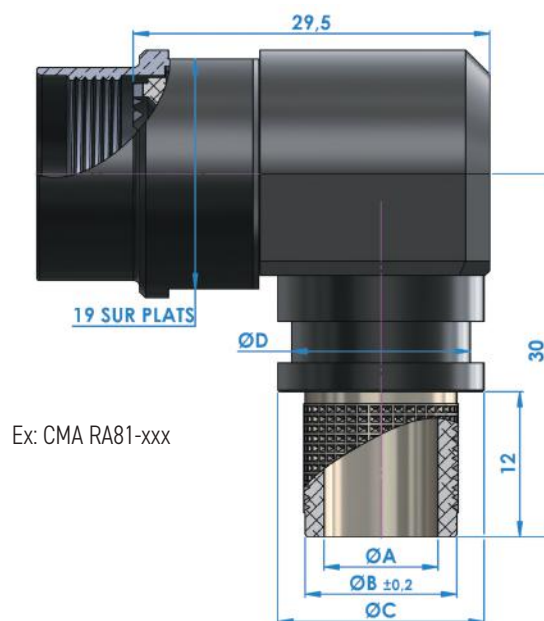
■ ELBOW BACKSHELLS 90° WITH KNURLING

Backshell for cable assembling with metallic collar and heat-shrink boot (not included)

RA81-xxx

Part numbers	ØA	ØB	ØC	ØD
CMA RA81-52	5,2	8,5	13,5	11,5
CMA RA81-64	6,4	9,6	13,9	11,5
CMA RA81-79	7,9	11,2	15,5	13,1
CMA RA81-95	9,5	12,8	17,1	14,8
CMA RA81-111	11,1	14,3	18,7	16,3
CMA RA81-127	12,7	15,9	20,3	17,7

20° angle orientation when tightening on connector



Ex: CMA RA81-xxx

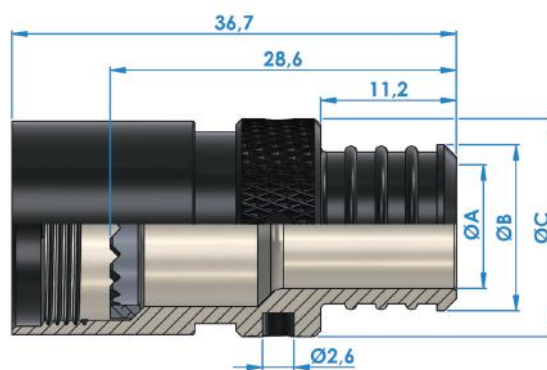
■ STRAIGHT BACKSHELL WITH KNURLING

Backshell for cable assembling with metallic collar and heat-shrink boot (not included)

RA02-10

Part numbers	ØA	ØB	ØC
CMA RA02-10	10	13,7	18

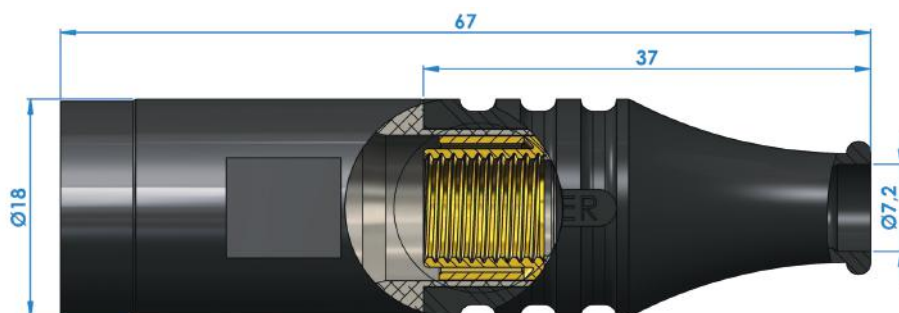
For Ø 06 & 08 Contact us



CMA RA02-10

■ UNREMOVABLE STRAIGHT BACKSHELL

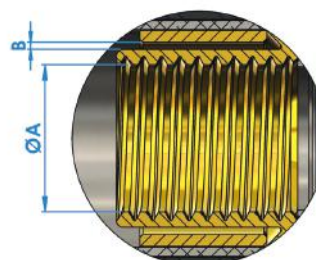
Backshell with a crimping operation during assembling to fit with accuracy to the cable (RH50 and B458 crimping tools sold separately)



CMA RAI-xx

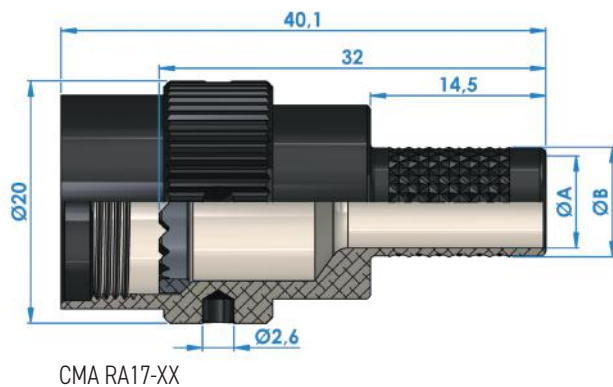
RAIxx

Part numbers	ØA	ØB	ØB
CMA RAI01	9,25	8.8	6.90
CMA RAI02	10,25	9.3	7.6
CMA RAI03	10,60	9.8	8.1



BACKSHELLS / CMA

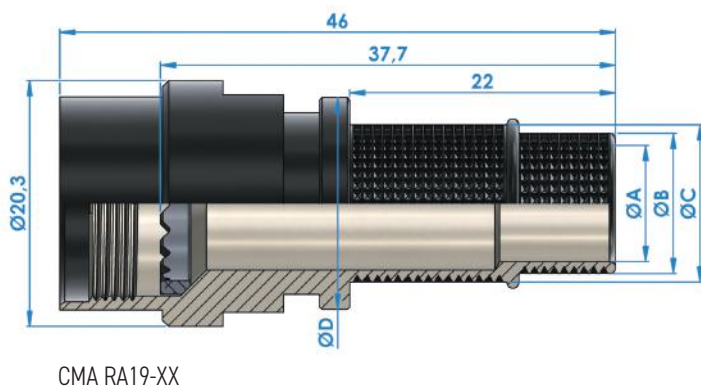
■ STRAIGHT BACKSHELL WITH KNURLING



RA17-76

Part numbers	ØA	ØB
CMA RA17-76	7,6	8,90

■ STRAIGHT BACKSHELL WITH DOUBLE KNURLING

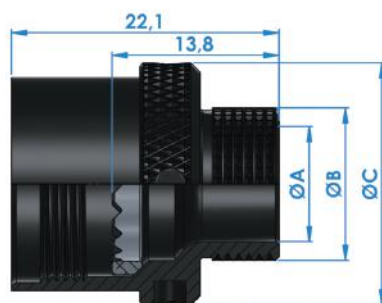


RA19-95

Part numbers	ØA	ØB	ØC	ØD
CMA RA19-95	9,5	11,6	13	17,5

■ SHORT BACKSHELL

Backshells for cable assembling with metallic collar and heat-shrink boot (not included)



RA09-95

Part numbers	ØA	ØB	ØC
CMA RA09-95	9,5	12,6	20

ELBOW PARTS / CMA

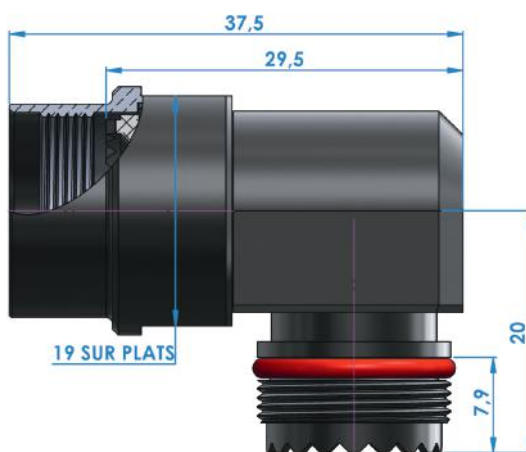
Orientation choice by angle of 20° set when tightening the backshell

■ ELBOW PART CMA RA8 WITH A 105° ANGLE



Ex: CMA RA8

■ ELBOW PART CMA RA82 WITH A 90° ANGLE

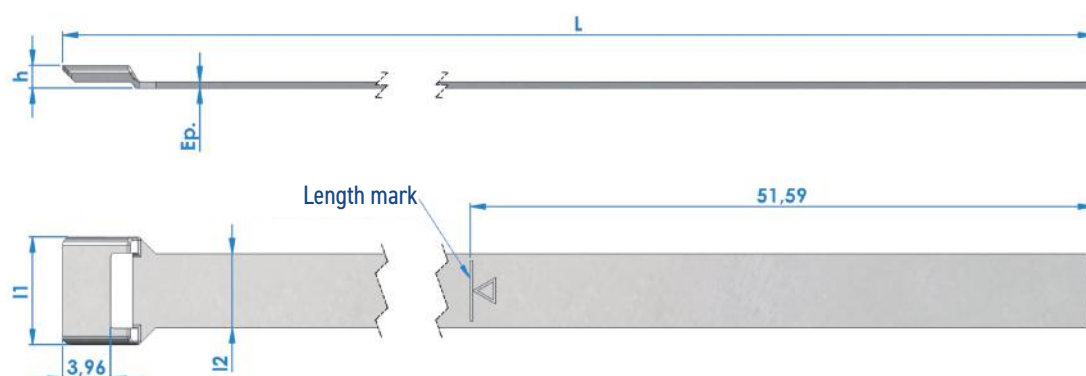


Ex: CMA RA82

BACKSHELLS ASSEMBLY PRINCIPLE / CMA

METALLIC CLAMP FOR BACKSHELLS

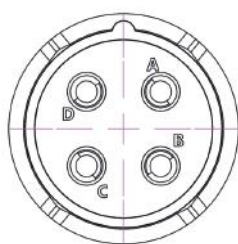
Description	Part numbers	L (mm)	h (mm)	l1(mm)	L2 (mm)	Ep. (mm)
Metallic clamp width 6.10 mm	B593	362,1	1,88	8,9	6,1	0,51
Metallic clamp width 3.17 mm	B452	206,4	1,35	5	3,1	0,4



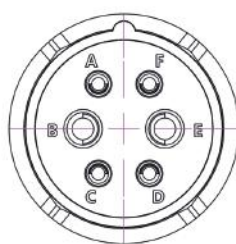
CABLING

Contacts position on plugs

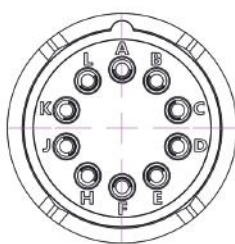
Welding side view



04 contacts



06 contacts



10 contacts



14 contacts



22 contacts

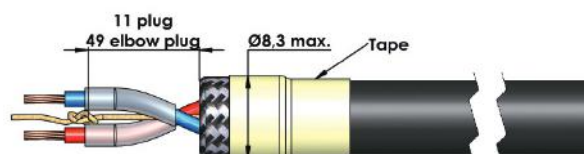
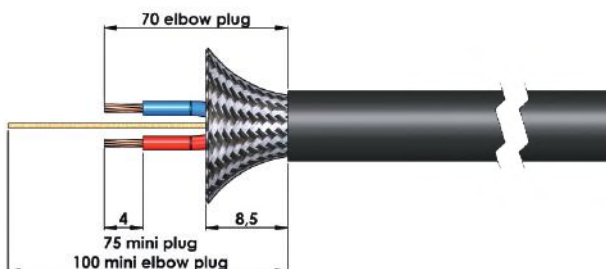
For types 1, 3 and 7: consider the reverse

■ CMA RA7-XX BACKSHELL ASSEMBLY

Slide items on the cable
as shown below



- | | |
|--------------------|------------------|
| 1. Locking backnut | 6. Bague conique |
| 2. Locking washer | 7. Cable clamp |
| 3. Sleeve | 8. Ground cone |
| 4. Backshell body | 9. Stop ring |
| 5. Cable clamp nut | 10. Plug |



- A.** Prepare the cable following Fig.A and Fig.B. The 'elbow plug' is the addition of an elbow part CMA RA8 between items 9 and 10.
- B.** To facilitate soldering operation, mate item 10 on counterpart tool BOUExxMENA01 (xx number of contacts).
- C.** Solder the wires (protection with heat-shrinkboots recommended).
- D.** Make a knot strongly tightened with the cable cord and introduce the knot in the slot of the plastic ring 9, cut extra nylon cord.
- E.** Bring the plastic ring 9 on the head of plug 10.
- F.** Slide the stop cable 8 on the plastic ring 9.
- G.** Spread the cable shield on the stop cable 8 and maintain it with the cable clamp 7.
- H.** Cut the extra cable shield.
- I.** Slide the tightening cone 6, then the cable clamp nut 5 (torque to be defined according to cable) and screw it on the stop cable 8.
- J.** Screw the backshell body 4 on the head of plug 10 mounted on the counterpart tool BOUExxMENA01.
- K.** Introduce the end of the sleeve 3 inside the backshell body 4. Put the locking washer in its place on the sleeve 3.
- L.** Screw the locking nut 1 on the backshell body 4 with a dynamometric key, tightening torque : 6N.m.

ATTENTION: these information are only for information, procedure may vary following the type of cable and the number of contacts.

■ CABLING OVERVIEW FOR CMA RA18-XXX AND CMA RA24-XXX BACKSHELLS



1

- Prepare cable and backshell items (metallic clamp and heat shrink boot not included in the backshell part number).
- Solder the cable wires on the connector contacts.



2

- Tighten (with the recommended torque) the backshell on the connector.
- Tighten the metallic clamp to fix the cable shield on the backshell knurled area.
- Cover with a heat shrink boot, a molded part or proceed an overmolding operation.

■ CABLING OVERVIEW OF CMA RA1XX BACKSHELLS



1

- Prepare cable and backshell items.
- Solder the cable wires on the connector contacts.

2

- Tighten (with the recommended torque) the backshell on the connector.
- Bring the assembly 'Ferrule-shield -cable' in position inside the backshell pulling on the cable.
- Proceed the crimping operation following the datasheet and the recommended tools.

3

- Bring the Orings and the elastomer sleeve in position.

■ CABLING OVERVIEW OF CMA RA81-XXX BACKSHELLS



1

- Prepare cable and backshell items
- Solder the cable wires on the connector contacts.



2

- Tighten (with the recommended torque) the backshell free ring on the connector giving the orientation wanted. (Orientation of the elbow by angle of 20°).
- Tighten the metallic clamp to fix the cable shield on the backshell knurled area.
- Cover with a heat shrink boot, a molded part or proceed an overmolding operation.

RECEPTACLES (TYPES 2, 6, 7, R7) / CMA

PART NUMBERS: **CMA X XX X XX XXXX XXXX XX XX XX**

Description	Code
Series	CMA

Aspect :

'Nothing mentioned': sandblasted
Black version

B

Connecteur type:

Receptacle
Receptacle front panel mounting
Dummy receptacle

2, 7

R7

6

Keyways

N, W, X, Y, Z, P, T

Number of contacts

04, 06, 10, 14, 22

Contact :

'Nothing mentioned': solder cup
For PCB Type 7, R7

Y1, Y1.2, Y1.3, Y2, Y3, Y4, Y4.1, Y4.2, Y8, Y8.1

Ground pin:

1 ground pin
4 ground pin

PM

PM4S

Panel oring:

'Nothing mentioned':
Fluorosilicon Oring
Fluorosilicon charged
with Ni/Graph Oring
Fluorosilicon charged
Silver/Al Oring

JC

JC1

Material:

'Nothing mentioned': stainless steel
Marine stainless steel (250 hours salt fog)
Marine bronze (500 h salt fog)

SM

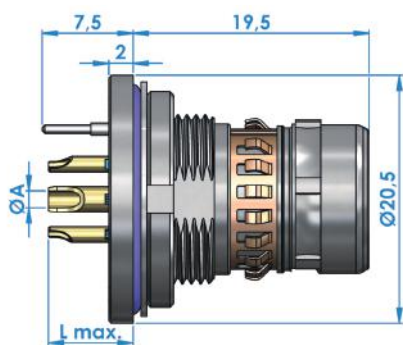
BM

KIT Oring - Nut- Washer:

Assembled on receptacle: no indication
Disassembled from receptacle

DA

RECEPTACLES WITH SOLDER CUP CONTACTS / REAR PANEL MOUNTING



Ex: CMA B 7N06PM JC

Receptacle (type 7) CMA x 7 x xx xxxx xxx xx

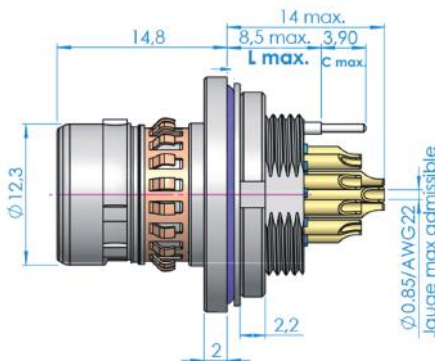
Part numbers	Number of contacts	AWG A	L max
CMA x 7 x 04 xxxx xxx xx	04	AWG 18	7,1
CMA x 7 x 06 xxxx xxx xx	06 (2 contacts) (4 contacts)	AWG 18 AWG 22	7,1 7,1
CMA x 7 x 10 xxxx xxx xx	10	AWG 22	7,1
CMA x 7 x 14 xxxx xxx xx	14	AWG 22	9,1
CMA x 7 x 22 xxxx xxx xx	22	AWG 26	7,1

■ RECEPTACLES WITH SOLDER CUP CONTACTS / FRONT PANEL MOUNTING

Receptacle (type R7) CMA x R7 x xx xxxx xxx xx

Part numbers	Number of contacts	L max	C max
CMA R7N04PM	04	8,2	4
CMA R7N06	06	8,2	4
CMA R7N06PM	06	8,2	4
CMA R7N06PM JC	06	8,2	4
CMA R7Z10	10	12	—
CMA R7N14	14	14	—
CMA R7N14 JC	14	14	—
CMA R7N14PM	14	14	4
CMA R7Z14	14	14	—
CMA R7N22	22	—	—
CMA R7W22	22	—	—
CMA R7N-USBC PCB1	USB	8	—

For other configurations and keyways contact us.

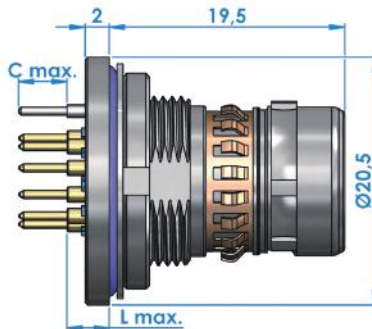


Ex : CMA R7N14

■ RECEPTACLE WITH CONTACTS FOR PCB / REAR PANEL MOUNTING

Receptacle (type 7) CMA x 7 x xx xxxx xxxx xxx xx

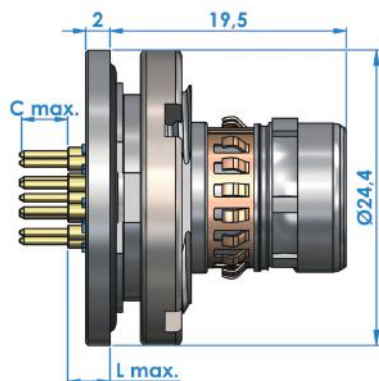
Part numbers	Types of contacts	L max	C max
CMA x 7 x xx Y1 xxxx xxx xx	Y1	3,5	4
CMA x 7 x xx Y1.2 xxxx xxx xx	Y1.2	3,5	2,6
CMA x 7 x xx Y1.3 xxxx xxx xx	Y1.3	3,5	1,5
CMA x 7 x xx Y2 xxxx xxx xx	Y2	9,5	4
CMA x 7 x xx Y3 xxxx xxx xx	Y3	12,5	4
CMA x 7 x xx Y4 xxxx xxx xx	Y4	3,2	2
CMA x 7 x xx Y4.1 xxxx xxx xx	Y4.1	3,2	1,2
CMA x 7 x xx Y4.2 xxxx xxx xx	Y4.2	3,2	1,6
CMA x 7 x xx Y8 xxxx xxx xx	Y8	5,5	4
CMA x 7 x xx Y8.1 xxxx xxx xx	Y8.1	5,5	2,6



Ex : CMA 7N10Y1PM

RECEPTACLES (TYPES 2, 6, 7, R7) / CMA

■ RECEPTACLE FITTING THE MIL-C-55116 RECEPTACLE PANEL CUT



Ex: CMA 7N55116

Receptacle (type 7) CMA x 7 x xx xx xxxx xxx xx

Part numbers	Types of contacts	L max	C max
CMA x 7 x xx Y1 xxxx xxx xx	Y1	3,5	4
CMA x 7 x xx Y1.2 xxxx xxx xx	Y1.2	3,5	2,6
CMA x 7 x xx Y1.3 xxxx xxx xx	Y1.3	3,5	1,5
CMA x 7 x xx Y2 xxxx xxx xx	Y2	9,5	4
CMA x 7 x xx Y3 xxxx xxx xx	Y3	12,5	4
CMA x 7 x xx Y4 xxxx xxx xx	Y4	3,2	2
CMA x 7 x xx Y4.1 xxxx xxx xx	Y4.1	3,2	1,2
CMA x 7 x xx Y4.2 xxxx xxx xx	Y4.2	3,2	1,6
CMA x 7 x xx Y8 xxxx xxx xx	Y8	5,5	4
CMA x 7 x xx Y8.1 xxxx xxx xx	Y8.1	5,5	2,6

■ RECEPTACLE FITTING THE SPECIAL PANEL CUT WITH 4 GROUND PINS - SERIE



Ex : CMA B 2N22Y1PM4

Receptacle (type 2) CMA x 2 x xx xx PM4 xxx xx

Part numbers	Types of contacts	L max	C max
CMA x 2 x xx Y1 PM4 xxx xx	Y1	3,5	4
CMA x 2 x xx Y2 PM4 xxx xx	Y2	9,5	4

■ RECEPTACLE WITH CONTACTS FOR PCB / FRONT PANEL MOUNTING

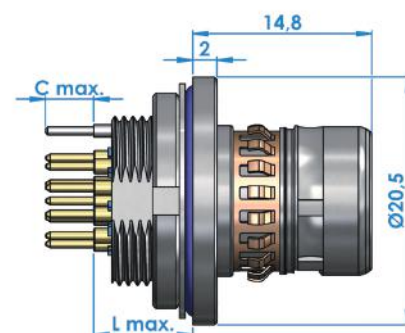
(can't be dismounted from the outside of the equipment)

Receptacle (type 7) CMA x R7 x xx xxxx xxxx xxx xx

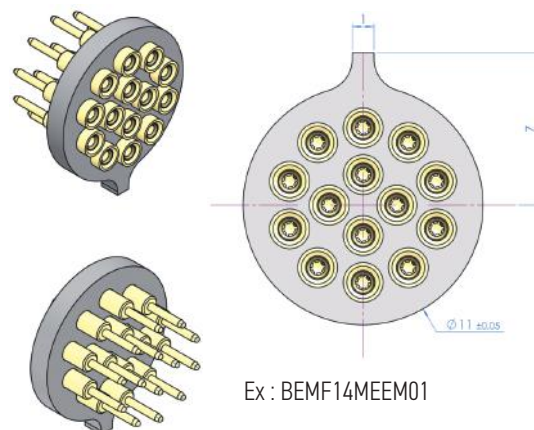
Part numbers	Number of contacts	Types of contacts	L max	C max
CMA R7Z10Y1	10	Y1	8,3	4
CMA R7Z10Y1.2	10	Y1.2	8,3	2,6
CMA R7Z10Y1.2PM	10	Y1.2	8,3	2,6
CMA R7N14Y1.2	14	Y1.2	8,3	2,6
CMA R7N14Y1.2PM	14	Y1.2	8,3	2,6

For other configurations and PCB keyways, please refer to the reference table below:

Part numbers	Types of contacts	L max	C max
CMA x R7 x xx Y1 xxxx xxx xx	Y1	3,5	4
CMA x R7 x xx Y1.2 xxxx xxx xx	Y1.2	3,5	2,6
CMA x R7 x xx Y1.3 xxxx xxx xx	Y1.3	3,5	1,5
CMA x R7 x xx Y2 xxxx xxx xx	Y2	9,5	4
CMA x R7 x xx Y3 xxxx xxx xx	Y3	12,5	4
CMA x R7 x xx Y4 xxxx xxx xx	Y4	3,2	2
CMA x R7 x xx Y4.1 xxxx xxx xx	Y4.1	3,2	1,2
CMA x R7 x xx Y4.2 xxxx xxx xx	Y4.2	3,2	1,6
CMA x R7 x xx Y8 xxxx xxx xx	Y8	5,5	4
CMA x R7 x xx Y8.1 xxxx xxx xx	Y8.1	5,5	2,6



Ex: CMA R7N14



■ INTERFACE FOR PCB CMA 14 CONTACTS

for receptacle R7

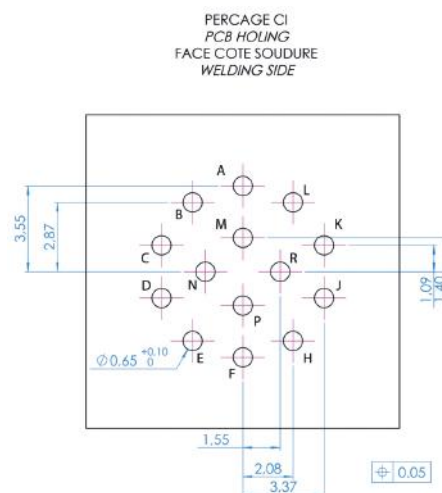
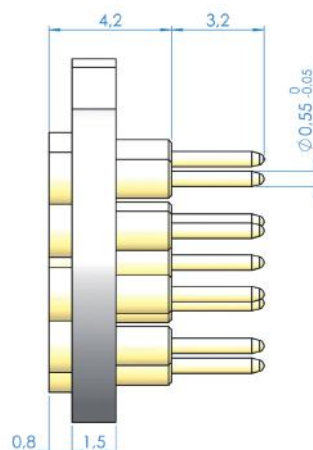
BEMF14MEEM01

MATERIALS AND FINISH:

- Platinum : epoxy.
- Contacts : Copper alloy with gold over nickel plating.

CLIMATIC AND MECHANICAL CHARACTERISTICS:

- Temperature range: -55°C +85°C.
- Weight: 2g max



■ DUMMY RECEPTACLE

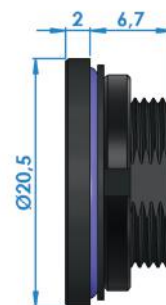
Receptacle (type 6) for plug fixing, for all plugs

CMA 6



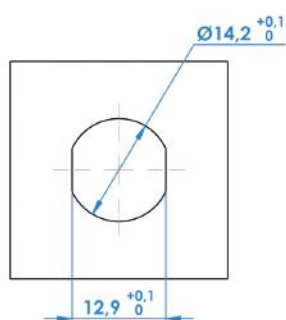
■ WATERTIGHT SHUTTER for CMA Type 7 panel cut

CMA B598N

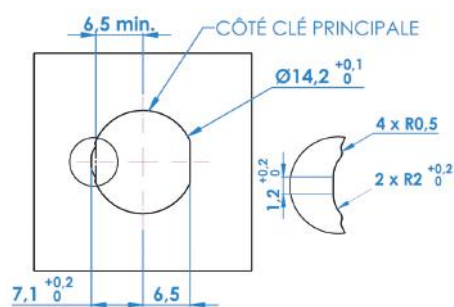


PANEL CUTS / CMA

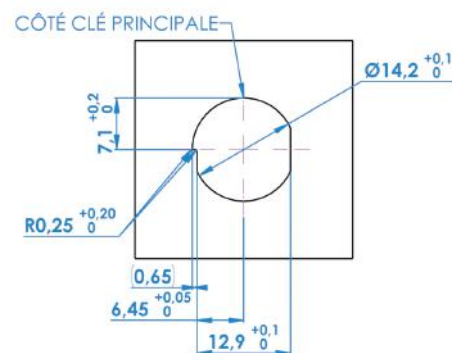
■ PANEL CUTS FOR TYPES 3, 7 AND R7



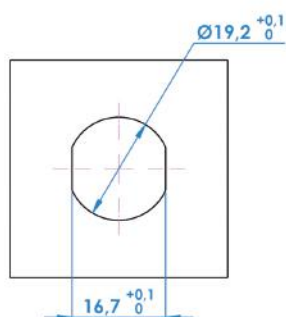
For Type 3 and a receptacle
alone 04, 06, 10, 14 contacts



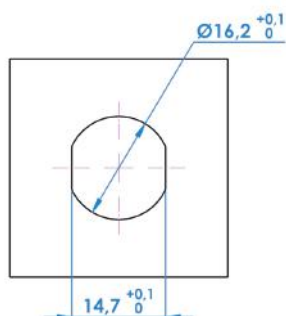
For several CMA receptacles
mounted on 1 PCB



For 22 contacts receptacle



■ SPECIAL RECEPTACLE PANEL CUT FITTING MILC-5516



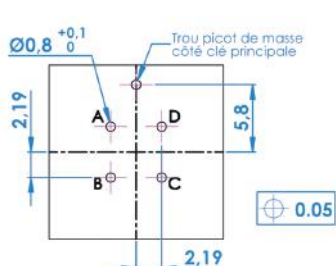
■ SPECIAL RECEPTACLE TYPE 2 PANEL CUT

Front view side — Maximum panel thickness for CMA receptacles : 3.5mm

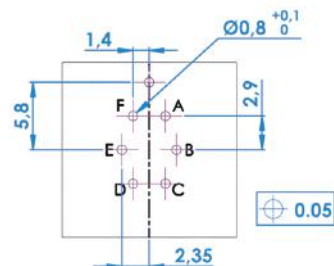
PCB HOLING / CMA

PCB HOLING

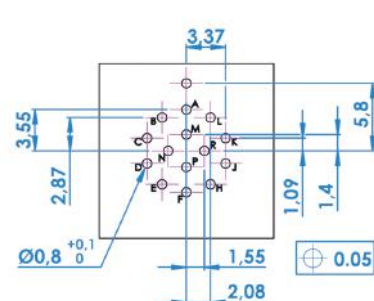
Welding side, through pins



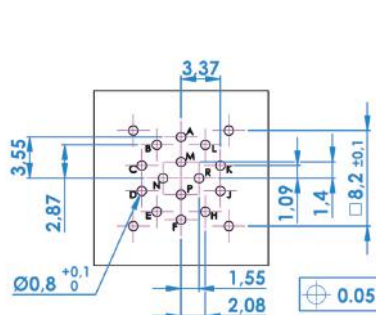
04 contacts / 1 Ground Pin



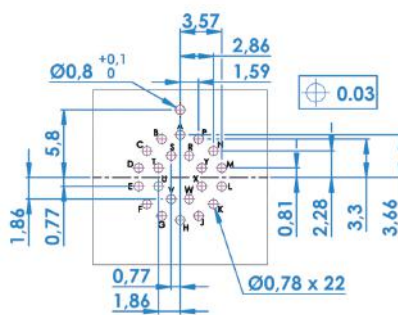
06 contacts / 1 Ground Pin



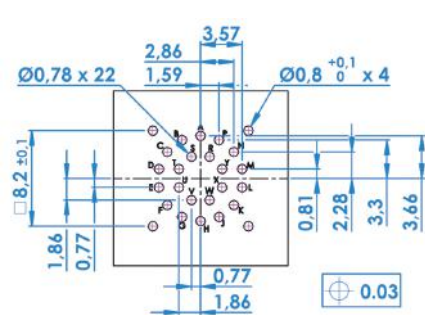
10 et 14 contacts / 1 Ground Pin



10 et 14 contacts
4 Ground pins PM4S



22 contacts / 1 PM



22 contacts
4 Ground pins PM4S

KIT ORING-WASHER-NUT FOR RECEPTACLE TYPE 7 ET R7

Description	Part numbers
Kit Oring-Washer-Nut (standard)	BEN000ME000
Kit Oring-Circular washer-Nut	BEN000ME001
Kit conductive Oring-Washer-Nut (JC fluorosilicon charged Nickel-Graphite)	BEN000ME002
Kit conductive Oring-Washer-Nut (JC1 fluorosilicon charged Silver-Aluminum)	BEN000ME003



BEN000ME000



BEN000ME001



BEN000ME002

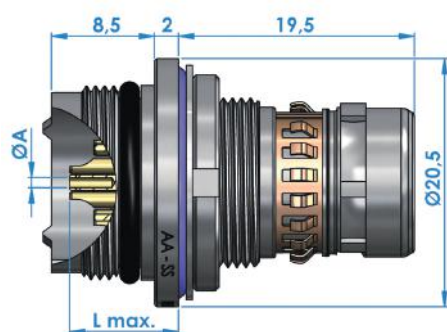


BEN000ME003

PANEL THROUGH (TYPE 3) / CMA

PART NUMBERS: **CMA X 3 X XX XX**

Description	Code
Series	CMA
Aspect : 'Nothing mentioned': sandblasted Black version	B
Connector type: Panel through	3
Keyways	N, W, X, Y, Z, P, T
Number of contacts	04, 06, 10, 14, 22
Material: 'Nothing mentioned' : stainless steel Marine stainless steel (250 hours salt fog) Marine bronze (500 h salt fog)	SM BM



Ex: CMA 3N14

■ PANEL THROUGH (TYPE 3) WITH SOLDER CUP CONTACTS

CMA x 3 x xx xx		
Part numbers	Number of contacts	ØA
CMA x 3 x 04 xx	04	AWG 18
CMA x 3 x 06 xx	06 (2 contacts) (4 contacts)	AWG 18 AWG 22
CMA x 3 x 10 xx	10	AWG 22
CMA x 3 x 14 xx	14	AWG 22
CMA x 3 x 22 xx	22	AWG 26

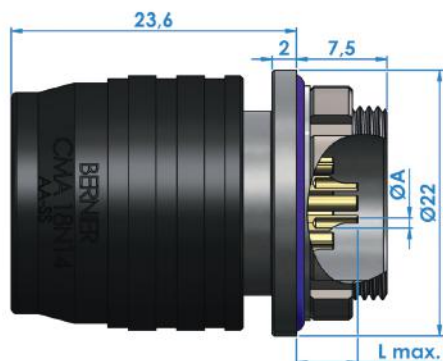
PANEL PLUGS (TYPES 11, 17, 18, 19) / CMA

PART NUMBERS: **CMA X XX XX X XX XX XXXX XX**

Description	Code
Series	CMA
Aspect: 'Nothing mentioned': sandblasted Black version	B
Locking: Nothing mentioned: push-pull version Break-away version with spring clip Break-away version without locking	L SC
Connector type: Panel plug	11, 17, 18, 19
Keyways	N, W, X, Y, Z, P, T
Number of contacts	04, 06, 10, 14, 22
Contact: 'Nothing mentioned': solder cup For PCB Type 7, R7	Y, YA, Y5
Ground pin: 1 ground pin 4 ground pin	PM PM4S
Material: 'Nothing mentioned' : stainless steel Marine stainless steel (250 hours salt fog) Marine bronze (500 h salt fog)	SM BM



■ PANEL PLUGS WITH SOLDER CUP CONTACTS



Ex: CMA 18N14

Push-Pull version | (Type 18)

CMA x 18 x xx xxxx xx

Part numbers	Number of contacts	ØA	L max
CMA x 18 x 04 xxxx xx	04	AWG 18	4,7
CMA x 18 x 06 xxxx xx	06 (2 contacts) (4 contacts)	AWG 18 AWG 22	4,7 4,7
CMA x 18 x 10 xxxx xx	10	AWG 22	4,7
CMA x 18 x 14 xxxx xx	14	AWG 22	4,7
CMA x 18 x 22 xxxx xx	22	AWG 26	7,1



Ex: CMA B L 11N04

Break-away version «L» with spring clip | (Type 11)

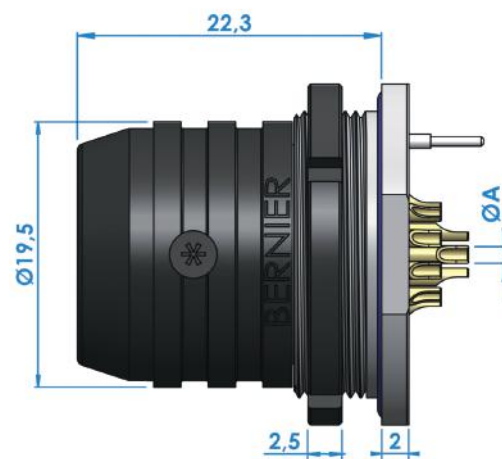
CMA x L 11 x xx xxxx xx

Part numbers	Number of contacts	ØA	L max
CMA x L 11 x 04 xxxx xx	04	AWG 18	4,9
CMA x L 11 x 06 xxxx xx	06 (2 contacts) (4 contacts)	AWG 18 AWG 22	4,9 4,9
CMA x L 11 x 10 xxxx xx	10	AWG 22	4,9
CMA x L 11 x 14 xxxx xx	14	AWG 22	6,9
CMA x L 11 x 22 xxxx xx	22	AWG 26	4



Break-away version «L» with spring clip | (Type 17)
CMA x L 17 x xx xxxx xx

Part numbers	Number of contacts	ØA	L max
CMA x L 17 x 14 xxxx xx	14	AWG 22	4,7



Break-away version «L» with spring clip | (Type 18)
CMA x L 18 x xx xxxx xx

Part numbers	Number of contacts	ØA	L max
CMA x L 18 x 04 xxxx xx	04	AWG 18	4,7
CMA x L 18 x 06 xxxx xx	06 (2 contacts)	AWG 18	4,7
	(4 contacts)	AWG 22	4,7
CMA x L 18 x 14 xxxx xx	14	AWG 22	4,7



■ PANEL PLUGS WITH SOLDER CUP CONTACTS



Ex: CMA B L 19N14

Break-away version «L» with spring clip | (Type 19)

CMA x L 19 x xx xxxx xx

Part numbers	Number of contacts	ØA	L max
CMA x L 19 x 04 xxxx xx	04	AWG 18	5
CMA x L 19 x 06 xxxx xx	06 (2 contacts) (4 contacts)	AWG 18 AWG 22	5 5
CMA x L 19 x 10 xxxx xx	10	AWG 22	5
CMA x L 19 x 14 xxxx xx	14	AWG 22	7
CMA x L 19 x 22 xxxx xx	22	AWG 26	3,9



Ex: CMA B SC18N06

Break-away version «SC» without locking | (Type 18)

CMA x SC 18 x xx xxxx xx

Part numbers	Number of contacts	ØA	L max
CMA x SC 18 x 04 xxxx xx	04	AWG 18	8,9
CMA x SC 18 x 06 xxxx xx	06 (2 contacts) (4 contacts)	AWG 18 AWG 22	8,9 8,9
CMA x SC 18 x 10 xxxx xx	10	AWG 22	8,9
CMA x SC 18 x 14 xxxx xx	14	AWG 22	11
CMA x SC 18 x 22 xxxx xx	22	AWG 26	7,9



■ PANEL PLUG WITH CONTACTS FOR PCB

Push-Pull version | (Type 18) CMA 18 x xx

Please contact us

Break-away version «L» with spring clip | (Type 17) CMA x L 17 x xx xx xxxx xx

Part numbers	Types de contacts	L max	C max
CMA x L 17 x xx Y xxxx xx	Y	1,7	1,2
CMA x L 17 x xx YA xxxx xx	YA	3,7	3,2



Ex: CMA B L 17Y14YAPM

Break-away version «L» with spring clip | (Type 18) CMA x L 18 x xx xx xxxx xx

Part numbers	Types de contacts	L max	C max
CMA x L 18 x xx Y xxxx xx	Y	6,2	1,2
CMA x L 18 x xx YA xxxx xx	YA	8,2	3,2



Ex: CMA B L 18N14YA



CMA 11N14Y5

■ PANEL PLUG WITH CONTACTS FOR PCB

Break-away version «SC» without locking | (Type 11)
CMA x SC 11 x xx Y5 xxxx xx

Part numbers

CMA x SC 11 x xx Y5 xxxx xx

Types de
contacts

YA



Break-away version «SC» without locking | (Type 18)
CMA x SC 18 x xx xx xxxx xx

Contact us

Break-away version «L» with spring clip | (Type 19)
CMA x L 19 x xx xx xxxx xx

Contact us

■ PLUGS CAPS FOR CMA TYPE 5 AND L5

Cap for CMA plug 5 or L5 with clamp. It is designed with system of locking and mates on all males connectors of the BERNIER CMA line for version N,W, X, Y, Z, T and P.

Reference of standard : STEI GAM-T2-75500 and 501.

	Thermo-plastic		Metallic Black
With...	Cord	Microcable	Microcable
Ferule*	CMA BA06-130 ST CMA BA06-300 ST	CMA BA06MC-200ST	CMA BA65MC-200ST
Plastic clamp	CMA BA06 CMA BA06-150 CMA BA06-250	CMA BA06MC CMA BA06MC-150	CMA BA65MCT

* Ferule is delivered separately to crimp it during cable assembling with the best fixing length.

MATERIALS AND FINISH

Shell	Thermo-plastic or Metallic
Cord	Black thermoplastic
Microcable	Stainless steel with black jacket
Ferule	Aluminum alloy with black plating
Clamp	Thermoplastic

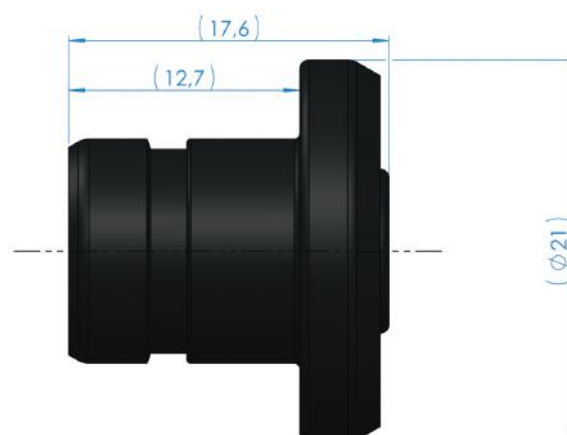
CLIMATIC AND MECHANICAL SPECIFICATIONS

Temperature range	-40°C +105°C or -55°C +125°C (ref. CMA06MC et CMA06MC-150)
Traction force	Cord: > 50N Microcable: > 120N
Watertightness	IP68
Clamp diameter	1,6 mm > Ø > 18 mm

Stock cap

CMA BASFIL

Protective cap for CMA plug



■ CAPS FOR RECEPTACLES (TYPES 6 ET 7) AND PANEL THROUGH (TYPE 3)

	Elastomer		Metallic*
With...	Cord	Microcable	Microcable
Metallic ring	CMA BA86 CMA BA86-35 CMA BA86-45	CMA BA86-35MC CMA BA86-50MC	CMA BA100x10.14MCEM CMA BA100x22MCEM
Crimped eyelet for M3 screw	CMA BA98	CMA BA98MC-75	Contact us
90° crimped eyelet for M3 screw	Contact us	CMA BA98MC-50CSM490	Contact us
Eyelet for MP3 screw	Contact us	Contact us	CMA BA100Z22MCM3
Specific eyelet attached to 3 caps	CMA BA84	CMA BA84MC	Contact us

MATIÈRE ET FINITION

Shell	Elastomer or Metallic Stainless steel blasted and passivated.
Cord	Black thermoplastic
Microcable	Stainless steel with black jacket
Ferule	Aluminum alloy with black plating
Eyelet	Stainless steel with black plating.
Crimped eyelet	Copper alloy with black plating

CLIMATIC AND MECHANICAL SPECIFICATIONS

Temperature range	-55°C +125°C or -40°C +85°C (ref. CMA BA98MC-75)
Traction force	> 120N
Watertightness	IP68

* CMA push-pull receptacle plugs with panel attachment lug. They mate with BERNIER CMA family types 7, 3 and 6 of the same keyway and the same number of contacts of the connector it covers.

For R7 type receptacles, the plug to be considered is the extender plug with a panel fixation.

Stock cap

CMA BA20

Protective cap for CMA receptacle
and extension



■ EXTENSION CAPS

	Elastomer cap		Push-pull metallic cap*
With...	Cord	Microcable	Microcable
Without fastener	CMA BA94-300	-	-
Ferule**	CMA BA94-300ST	CMA BA94MC-200ST	CMA BA100N10.14MC-200ST
Plastic clamp	CMA BA11	-	-
Thermoplastic clamp	-	CMA BA11 MC	-
Eyelet			CMA BA100N10.14MC-75CSM4 (M4 screw) CMA BA100N10.14MC-75CSM3 (M3 screw)
Metallic ring			CMA BA100N10.14MCEM

* Metallic cap part number contains the keyway and the number of contacts (xxx) of the connector it covers.

** Ferule is delivered separatly to crimp it during cable assembling with the best fixing length.

■ TERMINATIONS

Some eyelet can be fitted with 2 or 3 caps



MODULES / CMA

■ CONNECTORS WITH ELECTRONIC FUNCTIONS INTEGRATED



User authentication module
Crypto / Shunt



Wireless module
Bluetooth antenna

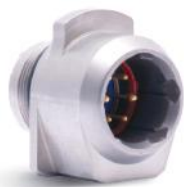
Memory key
Several memory sizes available



Adaptator
CMA to Industrial connector
(RJ45, USBs, HDMI, etc)



■ SPECIAL CONNECTORS



Plug with special shapes
for rackable system
CMA 14N06



Panel plug
with removable insulator
Module DDI



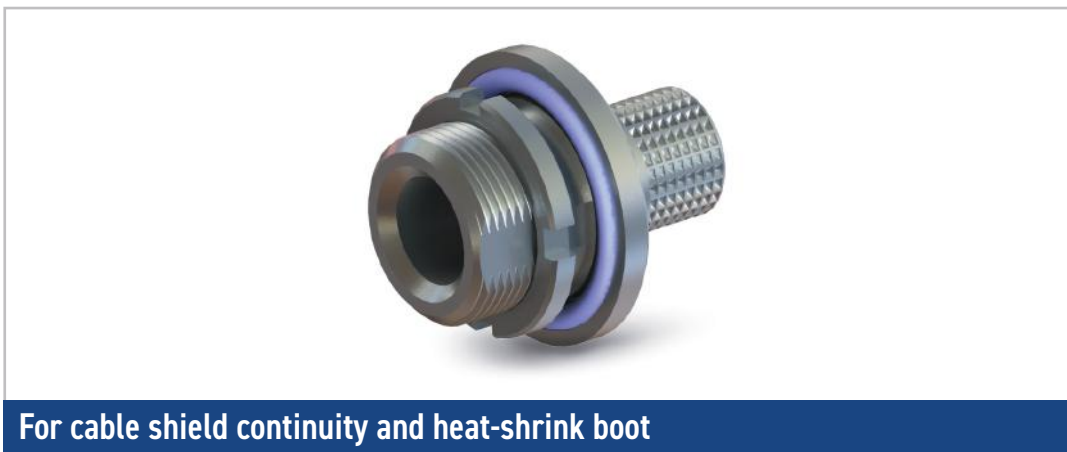
105° Elbow adaptor with
point to point cabling
Plug CMA
CMA Extension

■ PANEL THROUGHS

B456



B459



■ DEVELOPMENT OF PRODUCTS IN THE CMA ENVIRONMENT

B598



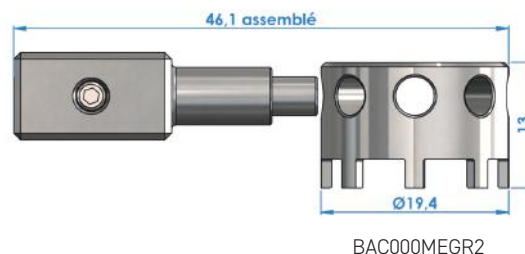
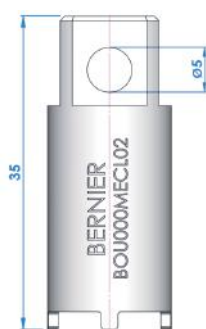
Toughness and reliable high speed data transfer
in **small dimensions!**



TOOLS

■ TIGHTENING TOOLS

Tightening tools for:		Part numbers
CMA	for receptacles type 7	B703
CMA	for receptacle type 2	97003
CMA	for panel plugs types 11, 17 and 19	90006
CMA	for panel plugs type 18	BAC000MEGR2
CMASD	for receptacle type 3, 7 et R7	BOU000MECL02
CMALD	for receptacle type 7	10063



■ TIGHTENING TORQUE

Connector material	Torque For receptacle types 3, 7 and R7	Torque for backshells
Stainless steel	9 N.m	6 N.m
Navy bronze	11 N.m	6,1 N.m
Navy stainless steel	9 N.m	6 N.m

TOOLS

■ MECHANICAL COUNTER PART

Description	Part numbers
Antirotation plug to tighten the backshell on extension with xx contacts	BOUExxMENA01 (xx: number of contacts)
Antirotation receptacle to tighten the backshell on plug with xx contacts	BOUFxxMENA01 (xx: number of contacts)



BOUE14MENA01



BOUF14MENA01

■ ELECTRICAL COUNTER PART

Description	Part numbers
Panel plug to test all keyways receptacle and extension	CMA 12TxxYA (xx: number of contacts)
Receptacle to test all keyways plug	CMA 7TxxY1 (xx: number of contacts)



CMA12T14YA



CMA 7T14Y1

Available with solder cup contacts

TOOLS

■ TOOLS FOR CAP INSTALLATION

Description	Part numbers
Tool to crimp the ferule on microcable	BOU000MESE01
Tool to crimp the ferule on the nylon cord	B705



BOU000MESE01



B705

TOOLS

■ TOOLS FOR THE BACKSHELL TIGHTENING

Description	Part numbers
Tool to crimp the metallic clamp width 6.10mm	BOU000MESE02
Tool to crimp the metallic clamp width 3.17mm	BOU000MESE03
Crimping jaws for CMA RAI-XX backshell	B458
Pneumatic tool for the crimping jaws B458	RH50
Tightening tool for CMA RA02-XX backshell	B704



BOU000MESE02



B458



RH50



B704



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