µCom-10Gb +

Harsh Environment 10Gb Ethernet Micro Connectors

µCom-Series is a new range of connectors designed to address the latest trends of the industry : **miniaturization** and **high speed**, with the highest resistance for use in the **harshest environments**.

µCom-10Gb + is the first product of this new range.

MAIN FEATURES

- 10Gb+ exceeds 10Gb/s Ethernet following IEEE 802.3an-2006 : **10GBase-T**
- Cat.6A connector according to TIA568C.2 and ISO/IEC11801 standard
- Environmental testing based on **MIL-DTL-38999 series III** military specifications (Thread version)
- Environmental testing based on **MIL-DTL-26482** military specifications (Push Pull version)
- Miniature : **15 mm(.59˝) max** external diameter
- Receptacle and in-line receptacle compatible with both thread and Push Pull plugs

FEATURES AND BENEFITS

- 4 pairs totally insulated throughout the connector
  ➲ minimum cross-talk between the four pairs
- Patent pending special interfacial shapes
  ➲ minimum perturbation at the interface of each pair
- Thread coupling mechanism
  ➲ 2000 mating cycles & high vibration resistance
- Machined Brass shells
  ➲ Plating available:
  Olive Drab Cadmium → not ROHS compliant
  Black Nickel, and unplated brass → ROHS compliant
  ➲ shell to shell continuity and 500h salt spray resistance
- Machined & gold plated Solder and Crimp contacts
  ➲ design & performance according to the innercontact of M39029/77-429#16 M39029/76-425#16 38999 contact
- Solder contact : max AWG24
- Crimp contact : AWG 24 to 26
- IP68 sealing mated and unmated for PCB receptacles
- 1500 Vrms Dielectric Withstanding voltage
- Temperature range : - 55°C / + 125°C

MARKETS & APPLICATIONS

- **DEFENSE :** C4ISR, Battlefield Communications, Shipboard, Ground Vehicles Vetronics.
- **AERONAUTICAL :** In Flight Entertainment, Avionics, Communication Systems.
- **RAIL MASS TRANSIT :** Passenger Information Systems, Communication Systems.

TRANSMISSION DATA

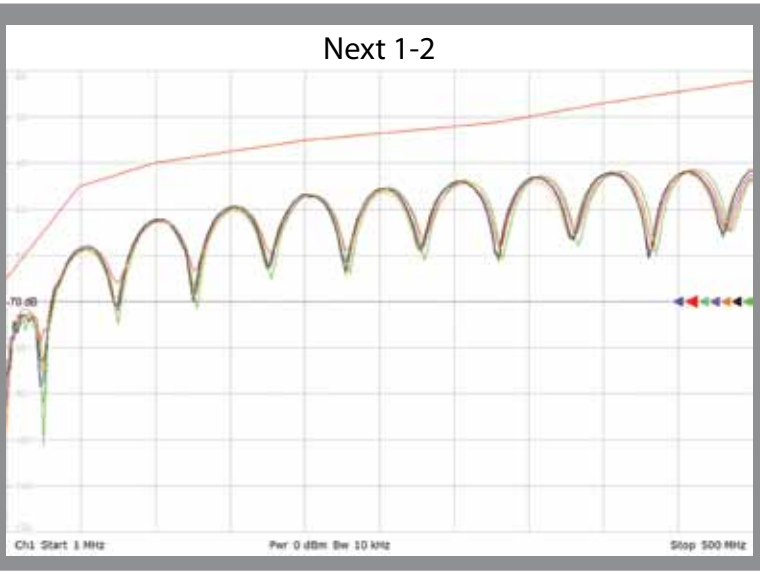
Exceeds 10Gb/s Ethernet requirement √

Insertion loss

Amphenol performance

IEEE 802.3an Standard requirement

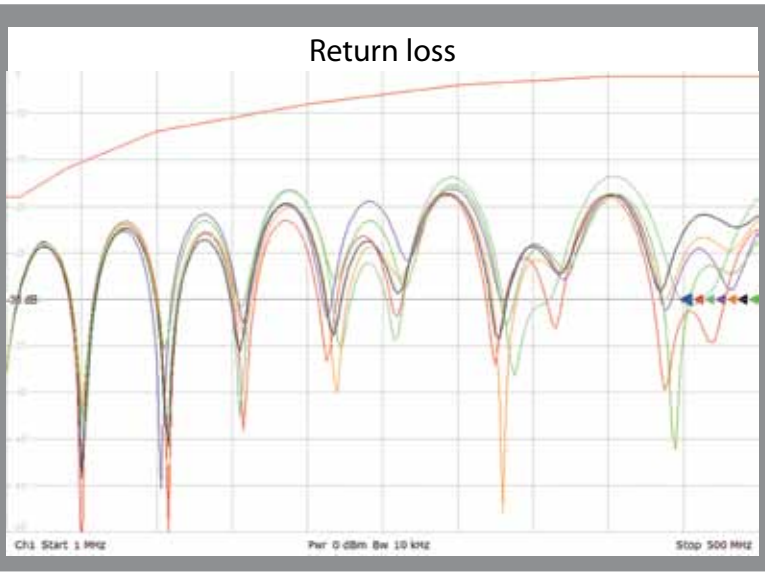
Next 1-2



IEEE 802.3an Standard requirement

Amphenol performance

Return loss



IEEE 802.3an Standard requirement

Amphenol performance

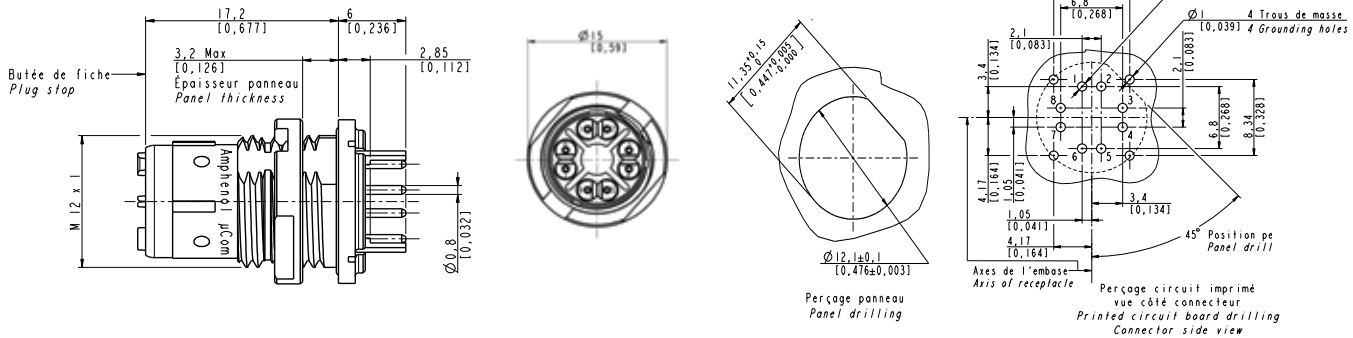
FEMALE RECEPTACLES

Female receptacle for printed circuit board

Compatible with both thread & push pull plugs

Part number: UCOM-10G+ R **P** x

x: see the 'How to order' below to complete your part number

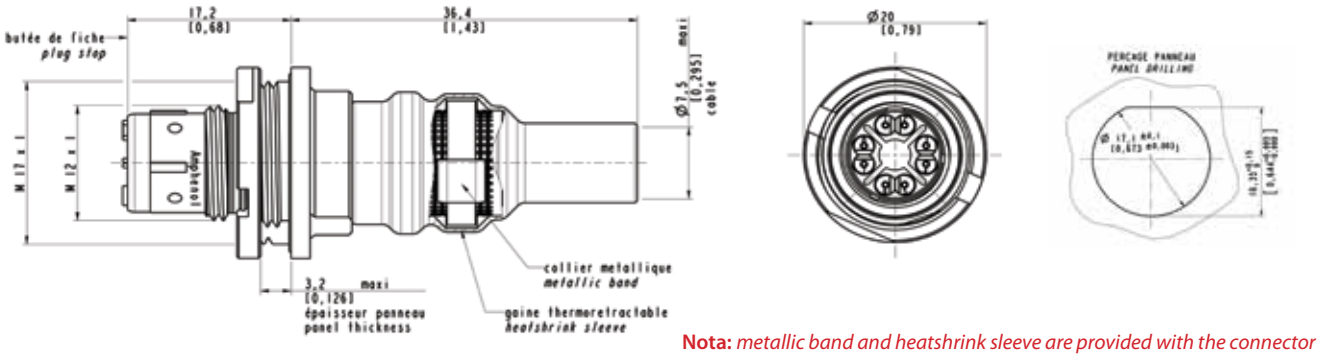


Panel mount female receptacle with metallic band backshell

Compatible with both thread & push pull plugs

Part number: UCOM-10G+ R x x

x: see the 'How to order' below to complete your part number



Nota: *metallic band and heatshrink sleeve are provided with the connector*

HOW TO ORDER Female receptacles

UCOM - 10G+	R	P	B

Shell
R: receptacle (push pull or thread)

Contacts termination
P: PCB
S: solder
C: crimp

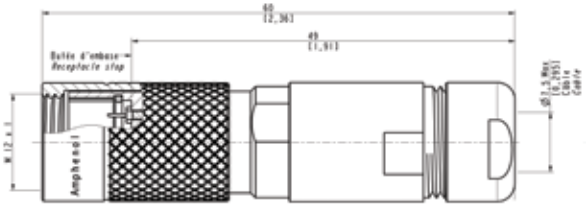
Shell plating
B: black nickel
G: olive drab cadmium
U: unplated brass

NOTA:
- **U**COM for order designation
- **µ**Com for marking on connectors

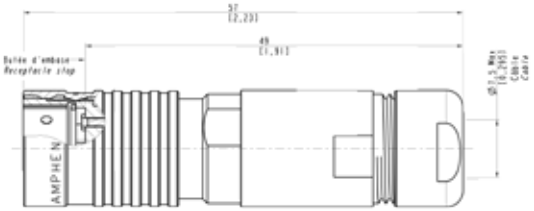
MALE PLUGS

Plug with cable gland backshell

Part number: UCOM-10G+ P T x x **G** x
x: see the 'How to order' below to complete your part number

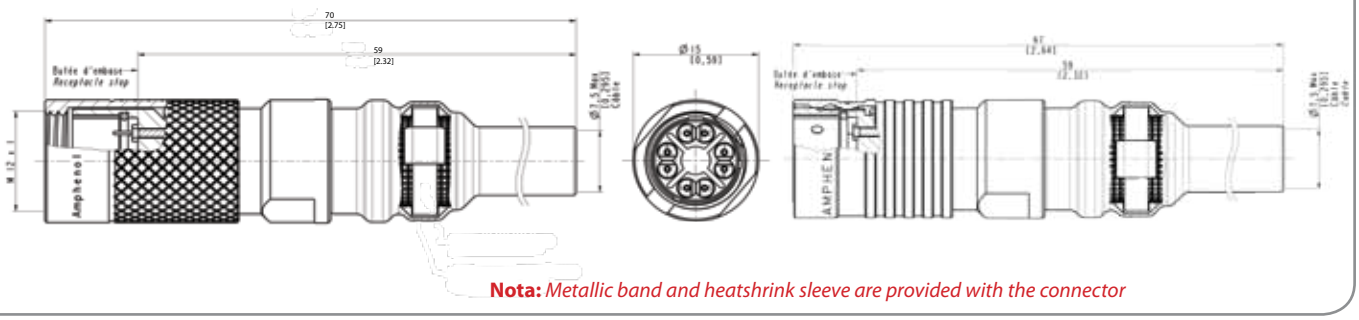


Part number: UCOM-10G+ P P x x **G** x
x: see the 'How to order' below to complete your part number



Plug with metallic band backshell

Part number: UCOM-10G+ P T x x **B**
x: see the 'How to order' below to complete your part number



Part number: UCOM-10G+ P P x x **B**
x: see the 'How to order' below to complete your part number

Nota: *Metallic band and heatshrink sleeve are provided with the connector*

HOW TO ORDER Male plugs

UCOM - 10G+	P	T	C	B	G	A

Shell
P: plug

Mating *(for plugs only)*
T: thread
P: push-pull

Contacts termination
C: crimp
S: solder

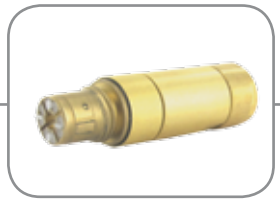
Shell plating
B: black nickel
G: olive drab cadmium
U: unplated brass

Backshell type
G: gland
B: band

Cable diameter ***(for gland backshell only)***
A: for cable diam 7.5mm
B: to be defined

NOTA:
- **U**COM for order designation
- **µ**Com for marking on connectors

FEMALE IN-LINE RECEPTACLES

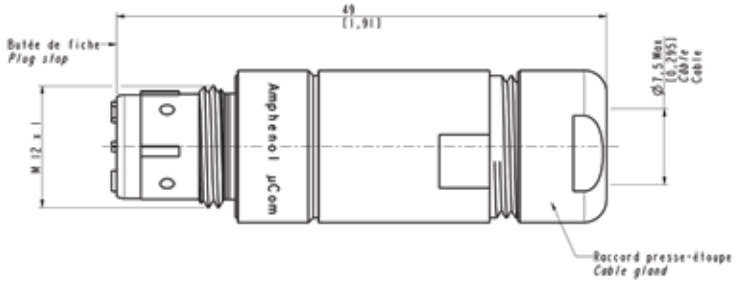


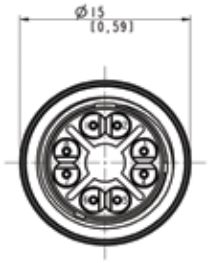
Female in-line receptacle with cable gland backshell

Compatible with both thread & push pull plugs

Part number: UCOM-10G+ L x x **G** x

x: see the 'How to order' below to complete your part number



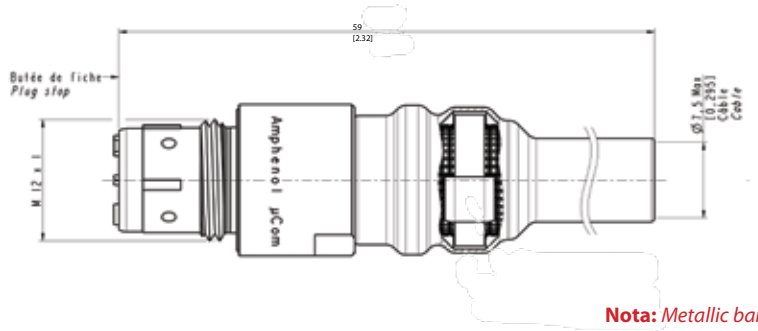


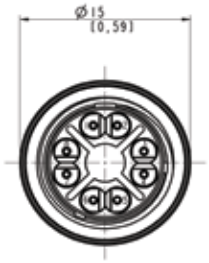
Female in-line receptacle with metallic band backshell

Compatible with both thread & push pull plugs

Part number: UCOM-10G+ L x x **B**

x: see the 'How to order' below to complete your part number





Nota: *Metallic band and heatshrink sleeve are provided with the connector*

HOW TO ORDER Female in-line receptacles

UCOM - 10G+	L	S	B	G	A
Shell **L:** in line receptacle (push pull or thread)					
Contacts termination **C:** crimp **S:** solder					
Shell plating **B:** black nickel **G:** olive drab cadmium **U:** unplated brass					
Backshell type **G:** gland **B:** band					
Cable diameter *(for gland backshell only)* **A:** for cable diam 7.5mm **B:** to be defined					

NOTA:

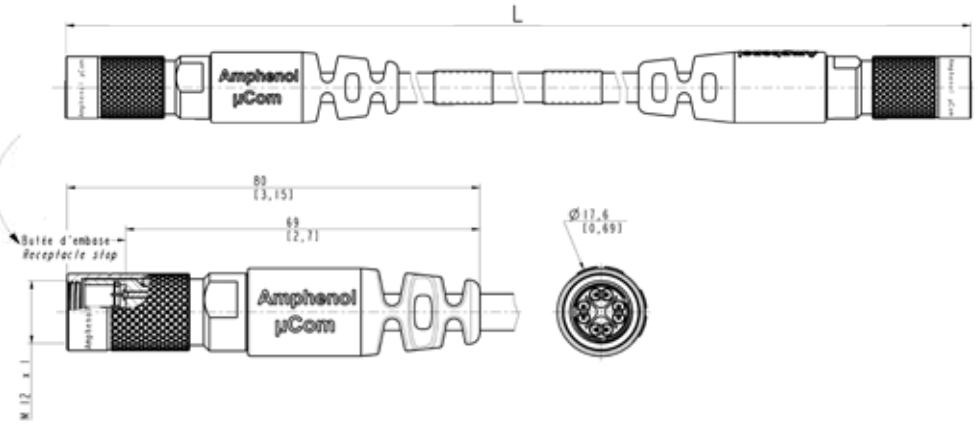
- **U**COM for order designation
- **µ**Com for marking on connectors

CORDSETS

µCom plug - µCom plug cordset

Part number:
UCOM-10G+ **C** x x x xxx

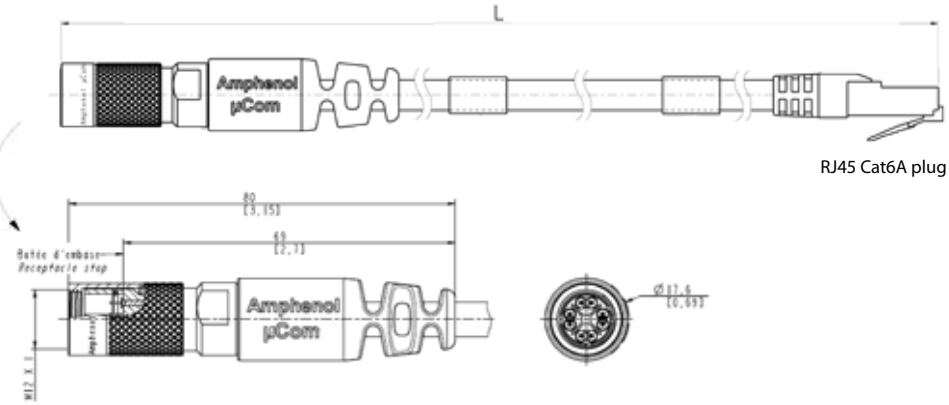
x: see the 'How to order' on the next page to complete your part number



µCom plug - RJ45 Cat6A plug cordset

Part number:
UCOM-10G+ **D** x x x xxx

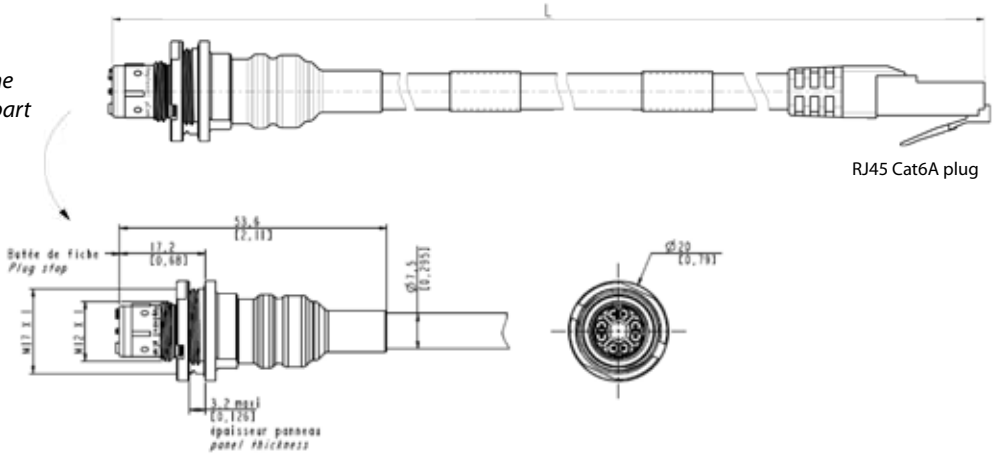
x: see the 'How to order' on the next page to complete your part number



µCom panel mount receptacle - RJ45 Cat6A plug

Part number:
UCOM-10G+ **E** x x xxx

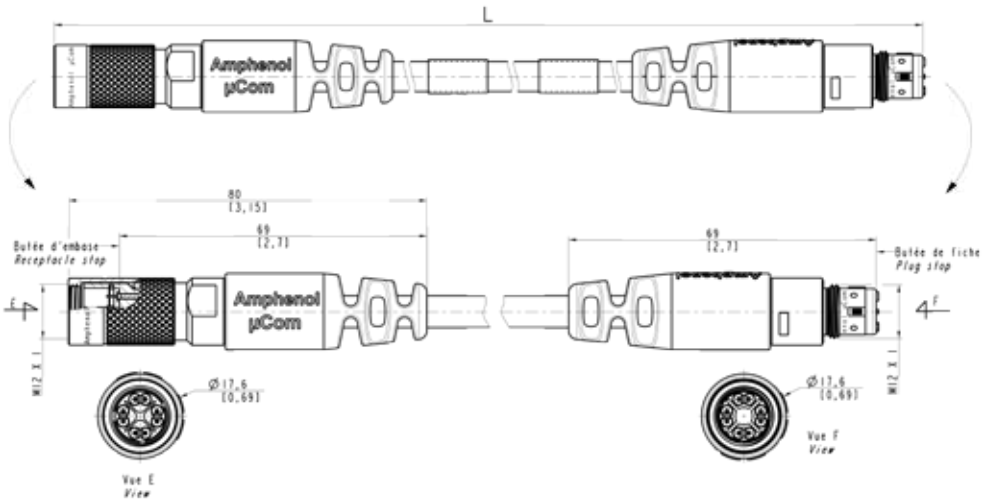
x: see the 'How to order' on the next page to complete your part number



µCom plug - µCom inline receptacle

Part number:
UCOM-10G+ **F** x x x xxx

x: see the 'How to order' below to complete your part number



Type of cable used: **CAT 7 HFFR** - According to EN 50288-4-2

- Stranded bare copper wire (26 AWG)
- 4 screened twisted pairs: 2 wires twisted to a pair, Alulaminate foil overlapped
- Shield braiding of tinned copper wires, about 80% coverage
- Strain member of Kevlar
- Jacket in black Polyurethane (PUR), glossy finish, acc to DIN VDE 0282
- External diameter 7.0 +/-0.3 mm
- UV & Hydrolysis resistant, Halogen free, RoHS compliant
- Max Pull force: 800 N, Weight : about 54 kg/km
- Temperature : - 40°C / + 85°C
- Min. bending radius allowed: repeated 8 x Ø, single 4 x Ø

HOW TO ORDER Cordsets

UCOM - 10G+	C	T	C	B	0 1 5

Shell
C: µCom plug - **µCom** plug cordset
D: µCom plug - **RJ45 Cat6A** plug cordset
E: µCom panel mount receptacle - **RJ45 Cat6A** plug cordset
F: µCom plug - **µCom** inline receptacle cordset
Open versions:
G: µCom plug - no connector at the end
H: µCom panel mount receptacle - no connector at the end
J: µCom inline receptacle - no connector at the end

Mating *(for plugs only)*
T: thread

Contacts termination
C: crimp
S: solder

Shell plating
B: black nickel
G: olive drab cadmium
U: unplated brass

Total length - *For other lengths, please consult us.*
002: 20 cm [7.87]
005: 50 cm [19.68]
010: 1.0 m [39.37]
015: 1.5 m [59.05]
020: 2.0 m [78.74]
050: 5.0 m [196.85]
100: 10.0 m [393.70]

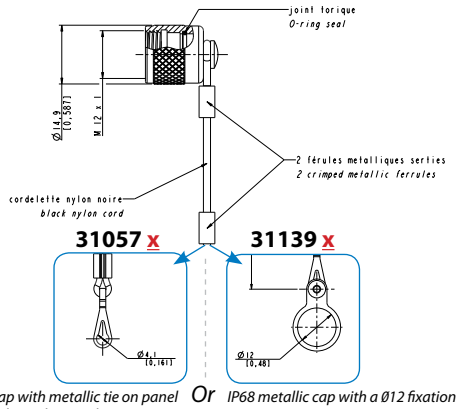
NOTA:
- **U**COM for order designation
- **µ**Com for marking on connectors

ACCESSORIES

CAPS for receptacles

IP68 metallic cap

x to be replaced by
B *for Black nickel plating*
G *for Olive drab cadmium plating*
U *for Unplated brass*



IP68 metallic cap with metallic tie on panel
Nota: plan a hole on the panel
Or
IP68 metallic cap with a Ø12 fixation ring

IP68 neoprene cap - Part number: **31091**
Nota: plan a type M3 hole on the panel

CAPS for plugs

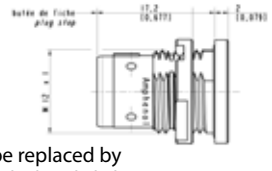
Cap in neoprene
Part number: **31092**

CAPS for in line receptacles

Cap in neoprene
Part number: **31093**

Dummy female receptacle

Part number: **31131 x**



x to be replaced by
B *for Black nickel plating*
G *for Olive drab cadmium plating*
U *for Unplated brass*

TOOLS

- Nut clamping tool for receptacle
  Part number: **31055**
  Only for RPx receptacles

- Insertion tool for crimp contacts
  Part number: **31056**

- Contact positioner for M22520/2-01 crimping tool
  Part number: **31095**

Other tools:

- Brazing tool for receptacle & in-line receptacle
  Part number: **31132**
- Brazing tool for plug
  Part number: **31133**

Nota: *the assembling instructions are available upon demand (ref. N00-040190-00).*

The information contained in this document should be used **as a guideline only**.
We reserve the right to **modify our products** in any way we deem necessary.
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Edited by **AMPHENOL SOCAPEX** - April 2015

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