

μCom & TVμCom

10Gb Ethernet Connector



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. **TVμCom** combines μCom-10G+ speed with 38999 Series III size 11 shells robustness.

Main Features

DATA TRANSMISSION

- Exceeds 10Gb/s Ethernet following IEEE 802.3an-2006 : 10GBase-T
- Cat.6A connector according to TIA568C.2 and ISO/IEC11801 standard

MAIN CHARACTERISTICS

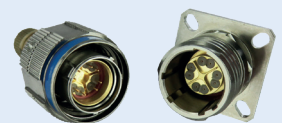
- 4 pairs totally insulated throughout the connector for minimum cross-talk between the four pairs
- Patented special interfacial shapes for minimum perturbation at the interface of each pair
- μCOM : Thread and push pull coupling mechanisms with 2000 mating cycles & high vibration resistance
- TVμCOM : 500 mating cycles
- Machined gold plated crimp and solder contacts design for performances according to the inercontact of M39029/77-429 #16 M39029/76-425#16 38999 contact
- Contacts are crimped with standard crimping tool M22520/2-01 + Amphenol μCom positioner
- Solder contact: max AWG24
- Crimp contact: AWG 24 to 28
- Temperature range: - 55°C / + 125°C
- IP68 sealing mated and unmated for PCB receptacles
- 1500 Vrms Dielectric Withstanding Voltage

μCom:

- Miniature : 15 mm (.59") max external diameter
- Receptacle and in-line receptacle compatible with both thread and push pull plugs
- 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.
- Machined brass shells
- Salt spray:
 - 500 h with Unplated brass shell ✓
 - 500 h with Olive Drab Cadmium plating ✓
 - 500 h with Black Nickel plating ✓

TVμCom:

- Based on MIL-DTL-38999 series III – Shell size 11
- Aluminium shells
- Salt spray:
 - 48 h with Nickel plating ✓
 - 500 h with Olive Drab Cadmium plating ✓
 - 500 h with Black Zinc Nickel plating ✓
 - 1000 h with Marine Bronze shell ✓
 - 500 h with Passivated Stainless steel shell ✓



Markets & Applications



C5ISR, Battlefield,
Ground Vehicles



Navy



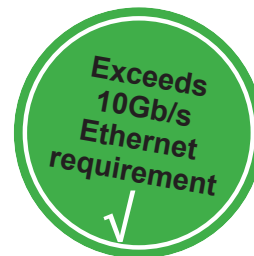
Commercial Aerospace



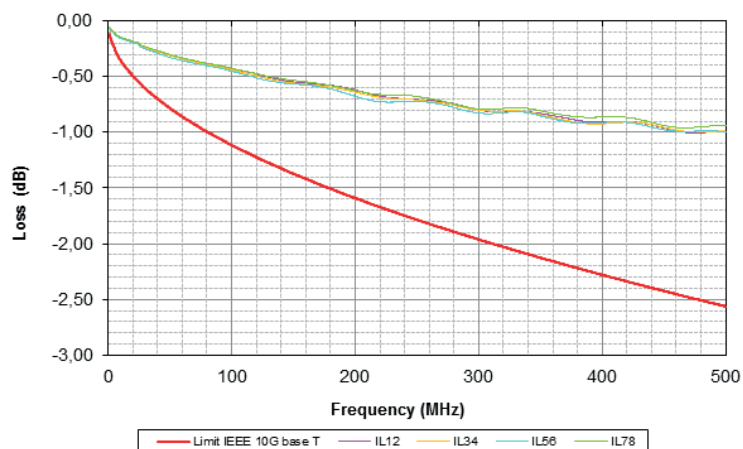
Railway

✓ : RoHS compliant

Transmission Data



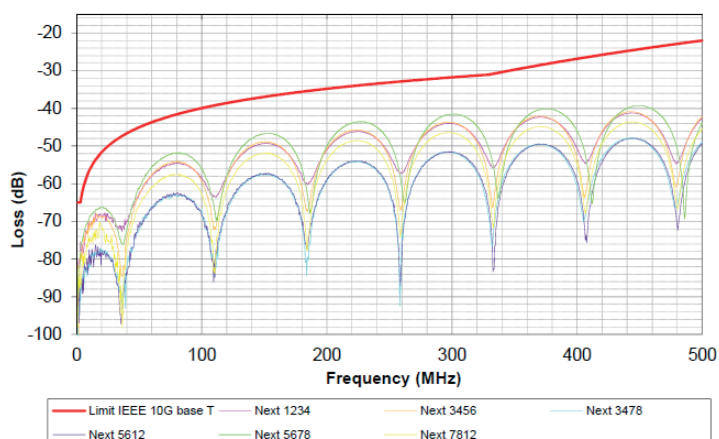
Insertion Loss (IL) :



← Amphenol performance

← IEEE 802.3an Standard requirement

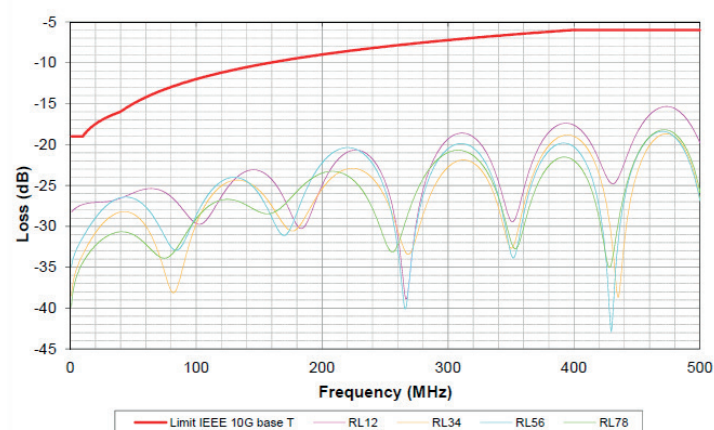
Near End crosstalk (NEXT) :



← IEEE 802.3an Standard requirement

← Amphenol performance

Return Loss (RL) :



← IEEE 802.3an Standard requirement

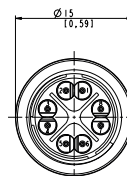
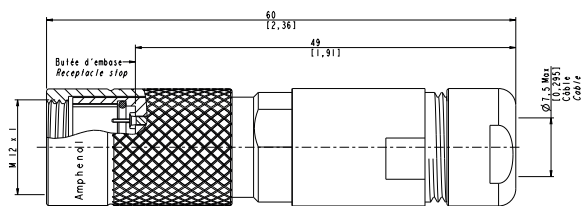
← Amphenol performance

Overall dimension

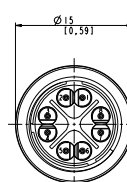
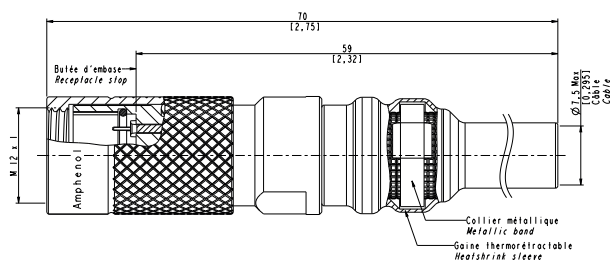


Plug - Thread version

Part number: **UCOM-10G+ P T X X G A**

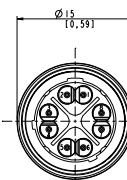
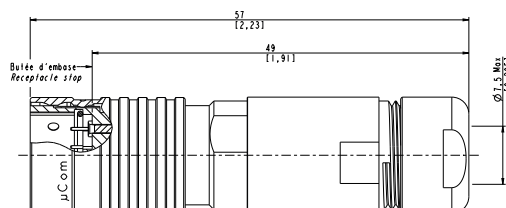


Part number: **UCOM-10G+ P T X X B**

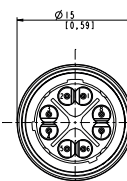
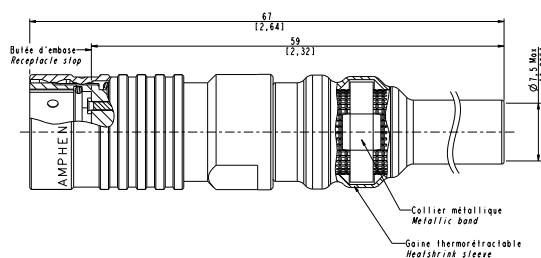


Plug - Push-pull version

Part number: **UCOM-10G+ P P X X G A**



Part number: **UCOM-10G+ P P X X B**

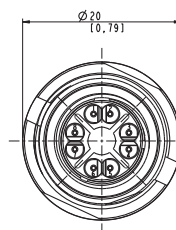
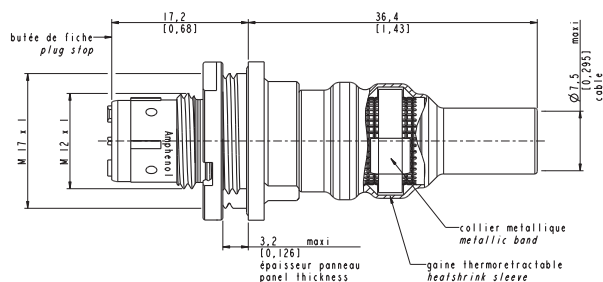


Overall dimension

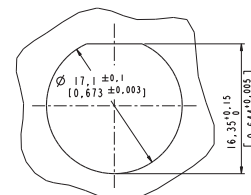


Receptacle - Panel mount version

Part number: **UCOM-10G+ R X X**

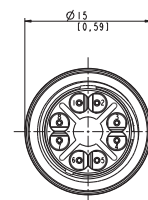
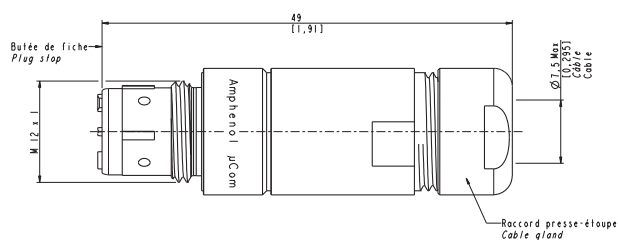


Panel drilling

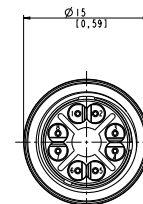
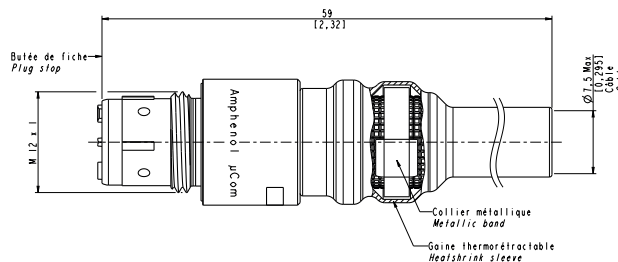


Receptacle - In line version

Part number: **UCOM-10G+ L S X G A**

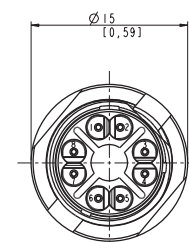
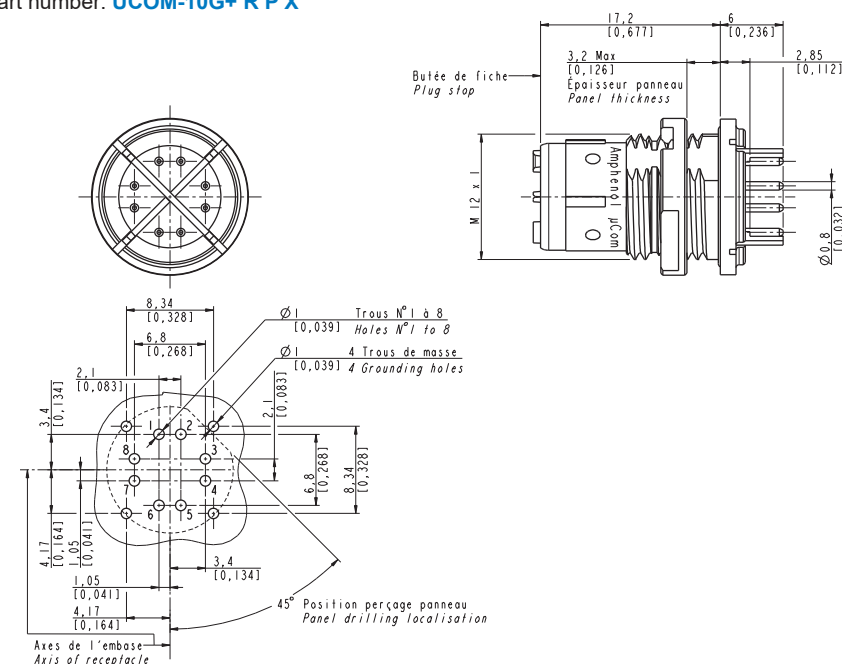


Part number: **UCOM-10G+ L S X B**

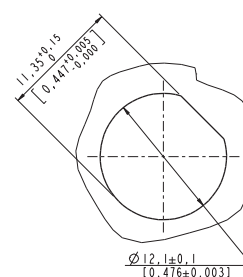


Receptacle - PCB version

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



Panel drilling

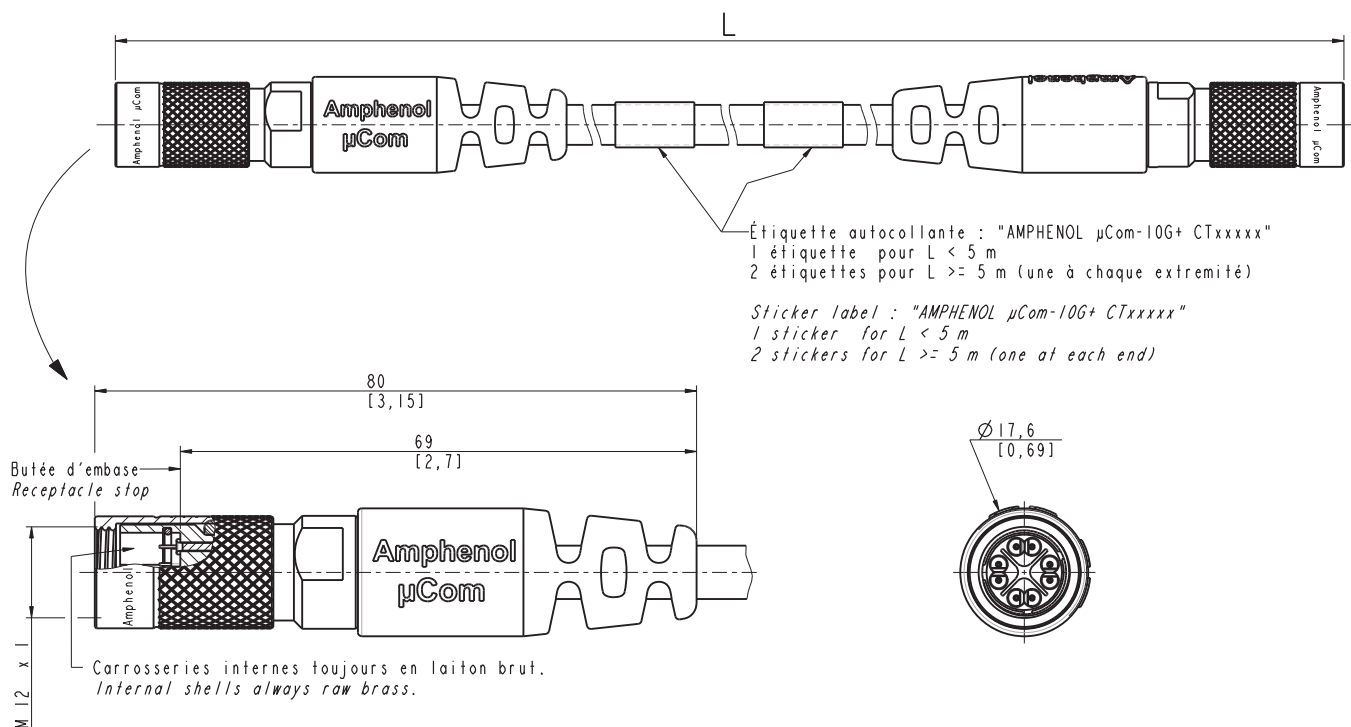


Overall dimension

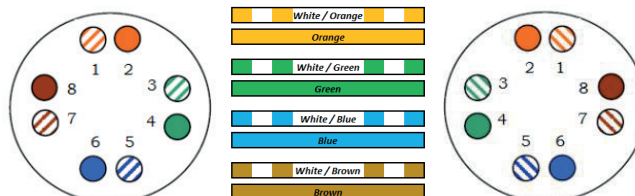


Cordset - Tread plug to thread plug

Part number: **UCOM-10G+ C T X X XXX**



Wiring configuration

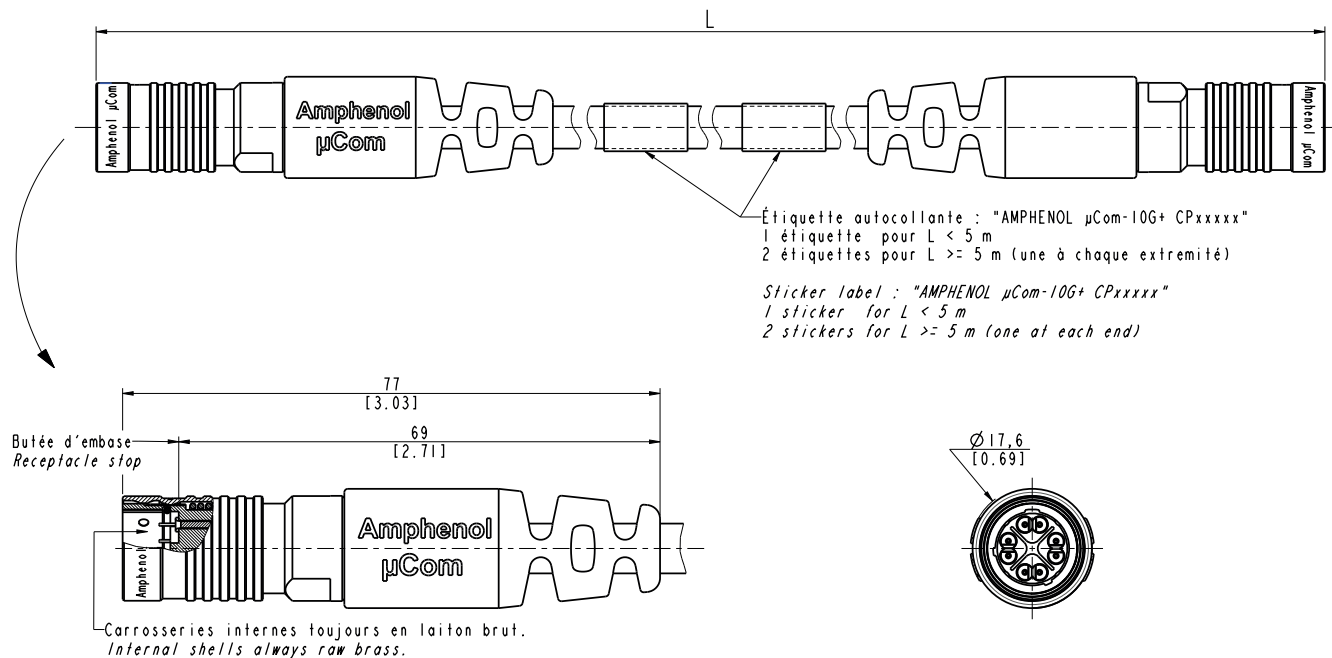


Overall dimension

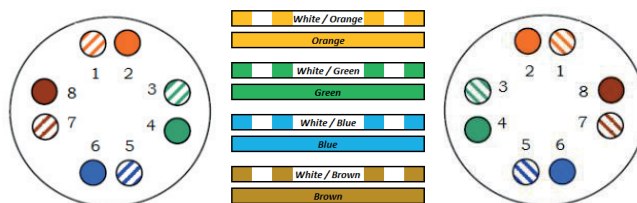


Cordset - Push-pull plug to push-pull plug

Part number: **UCOM-10G+ C P X X XXX**



Wiring configuration

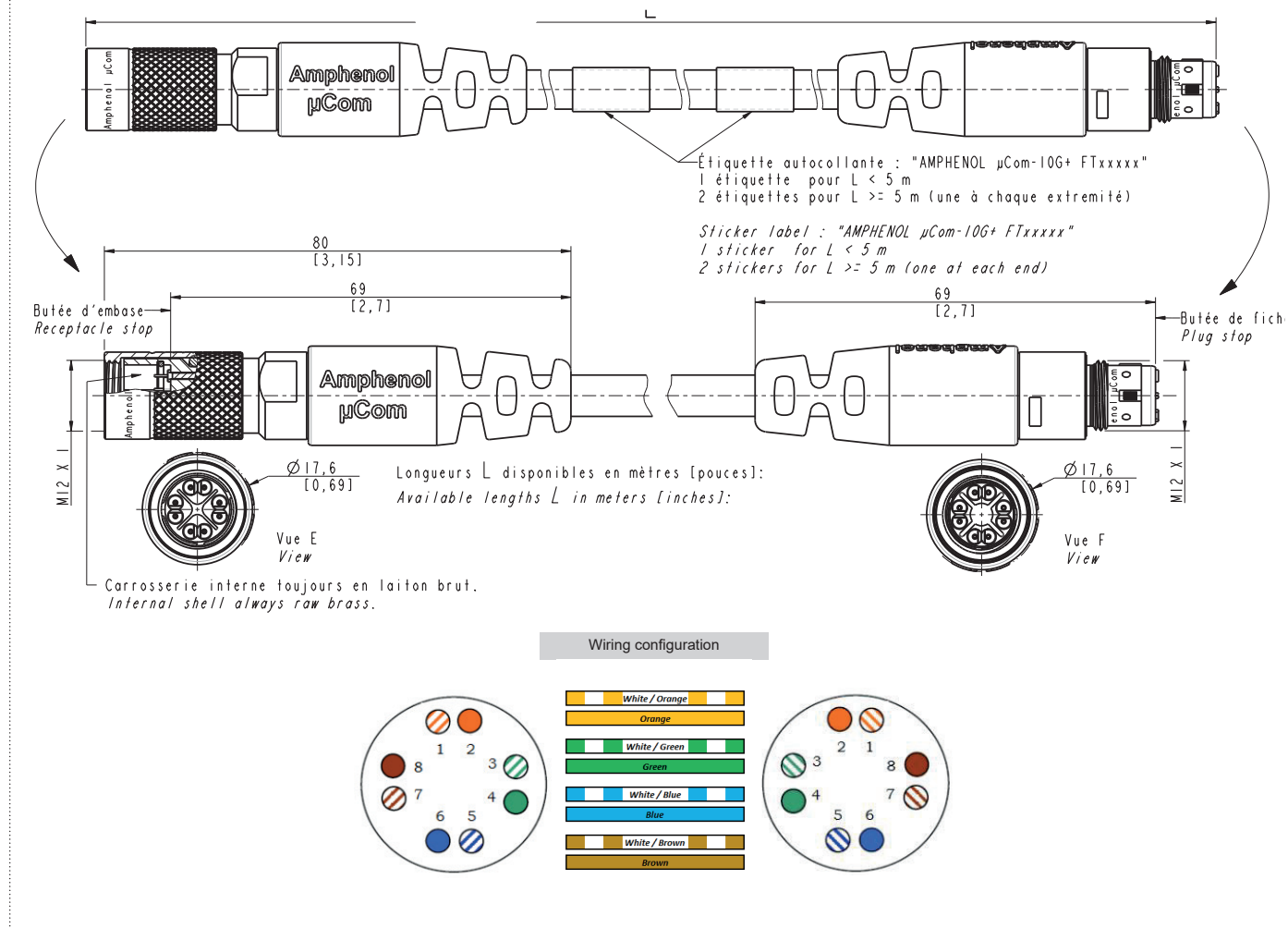


Overall dimension



Cordset - Tread plug to in line receptacle

Part number: **UCOM-10G+ F T X X XXX**

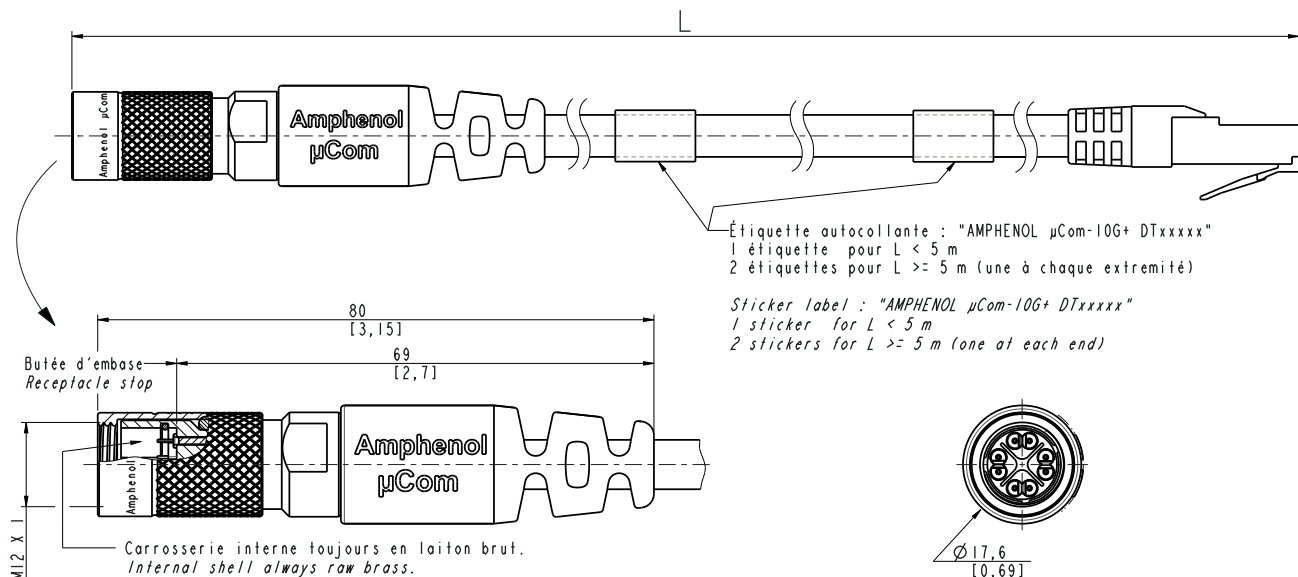


Overall dimension

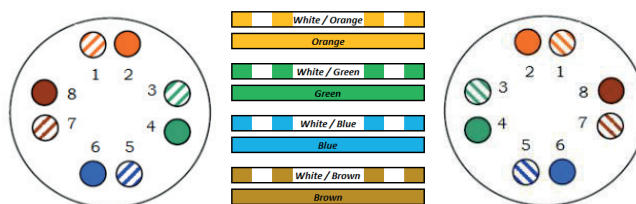


Cordset - Thread plug to RJ45 plug

Part number: **UCOM-10G+ D T X X XX**



Wiring configuration

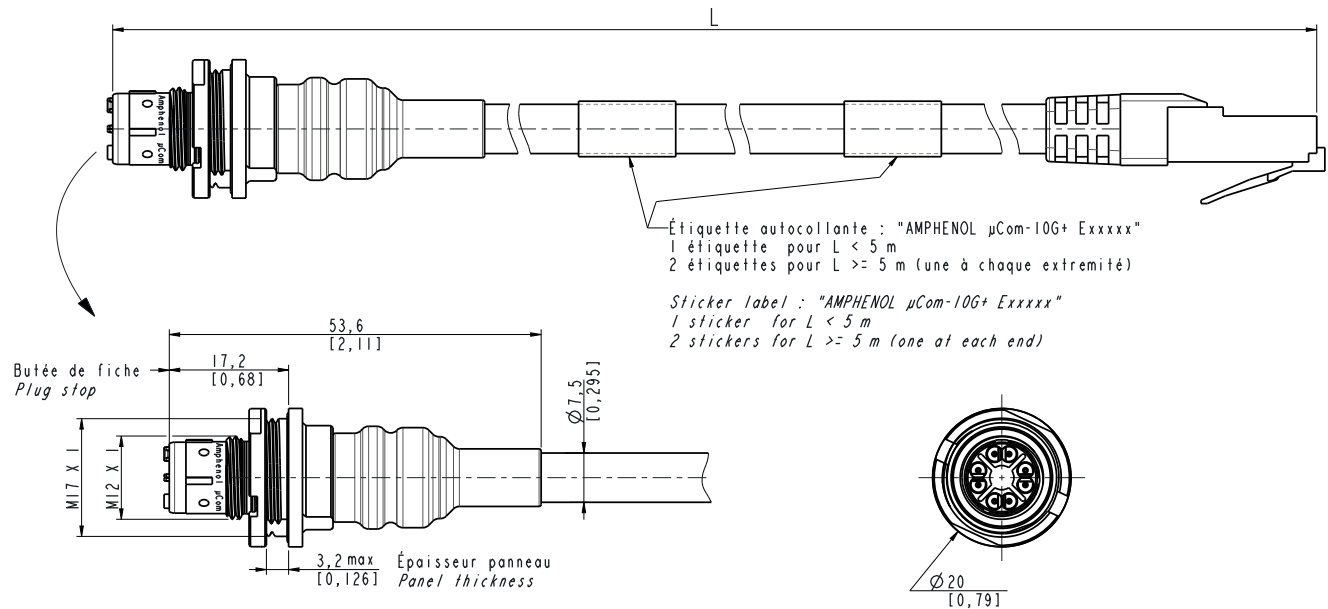


Overall dimension

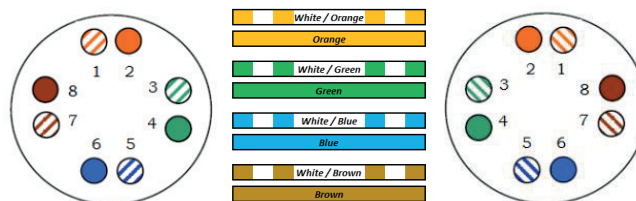


Cordset - Panel mount receptacle to RJ45 plug

Part number: **UCOM-10G+ E X X XXX**



Wiring configuration

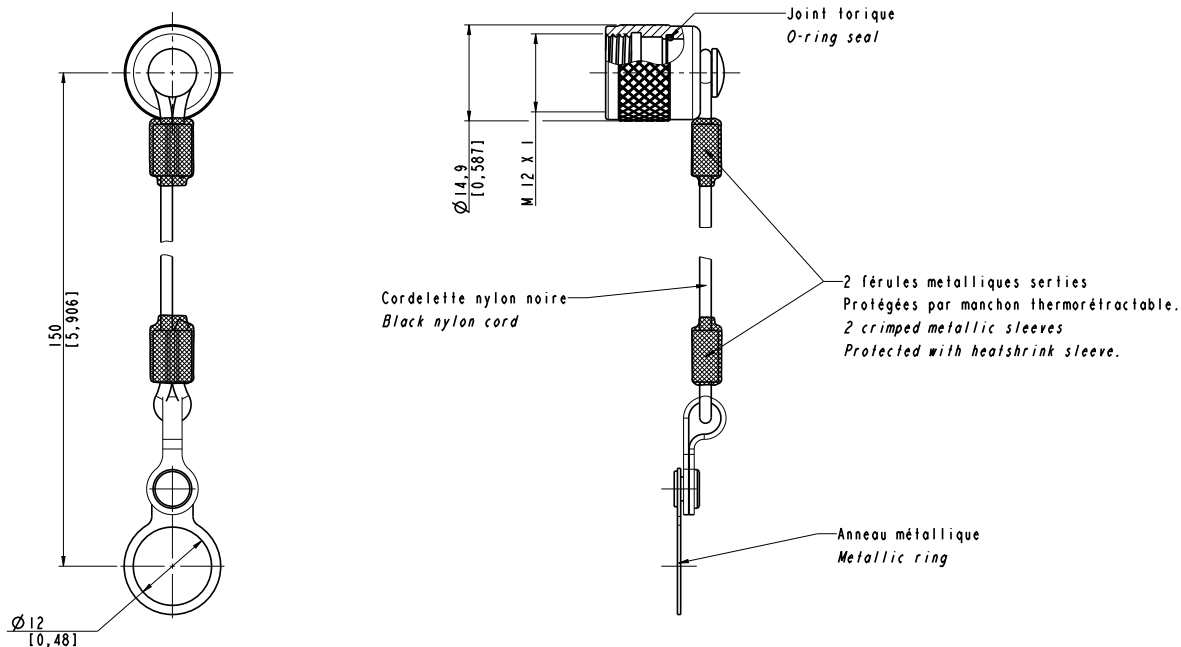


Overall dimension

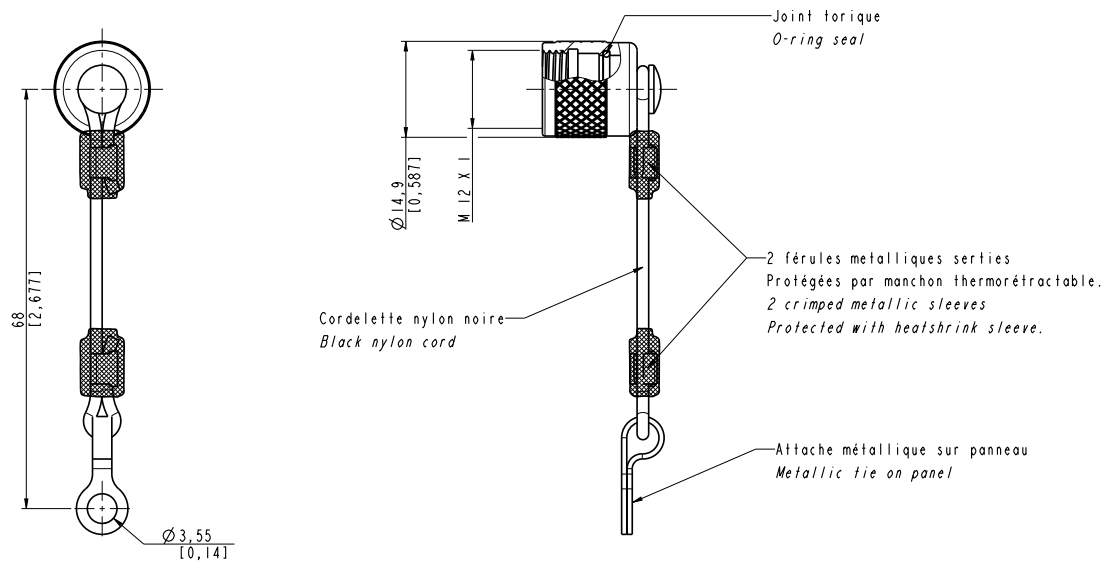


Metallic protective cap - Receptacle

Part number: **31139 X**



Part number: **31037 X**

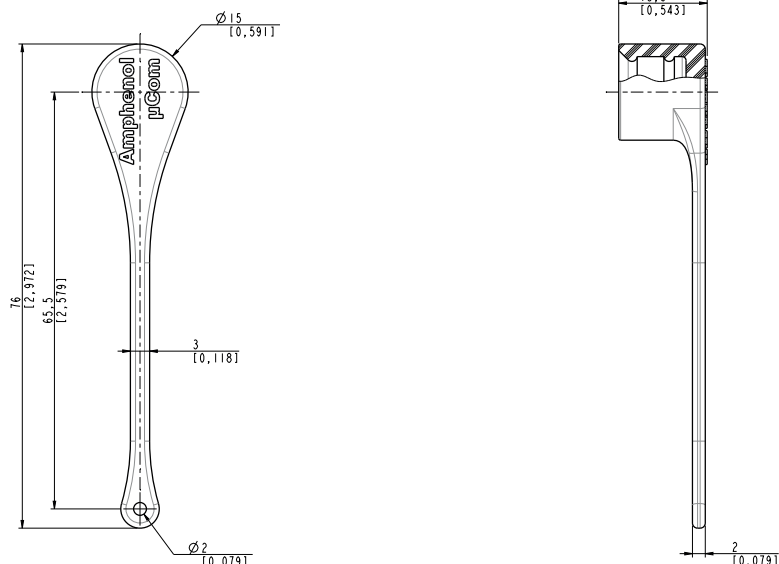


Overall dimension



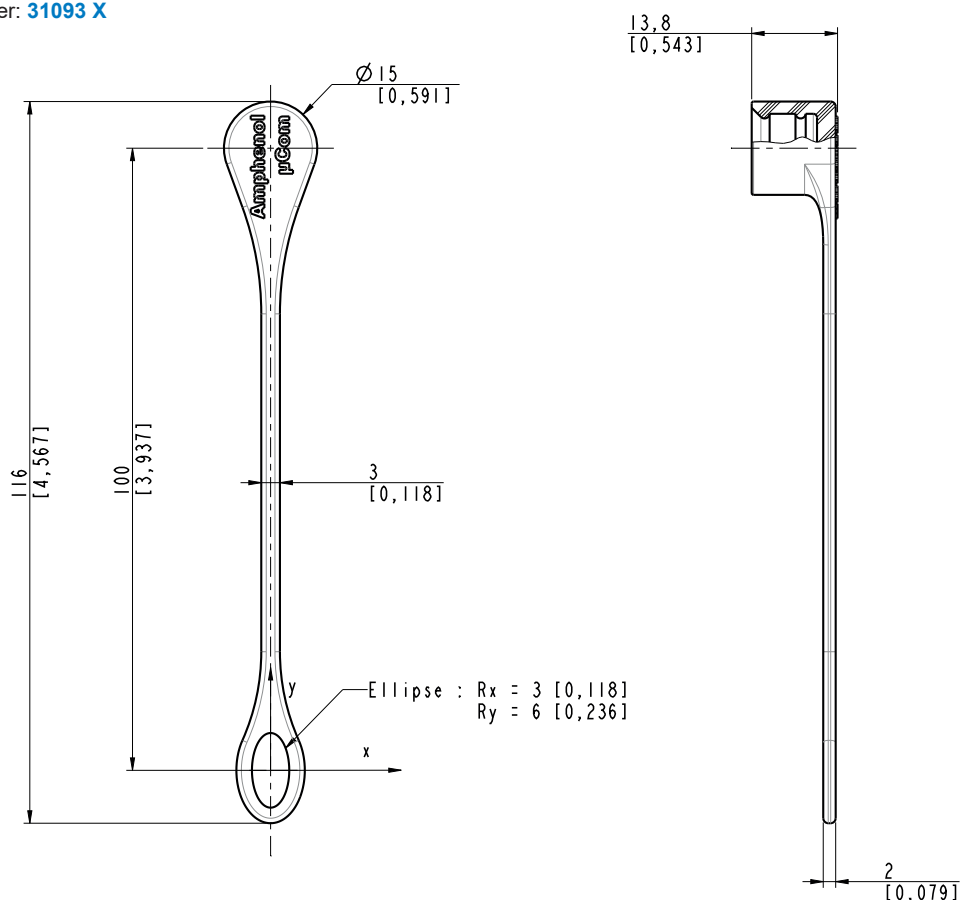
Neoprene protective cap - for receptacle

Part number: **31091 X**



Neoprene protective cap - for in line receptacle

Part number: **31093 X**

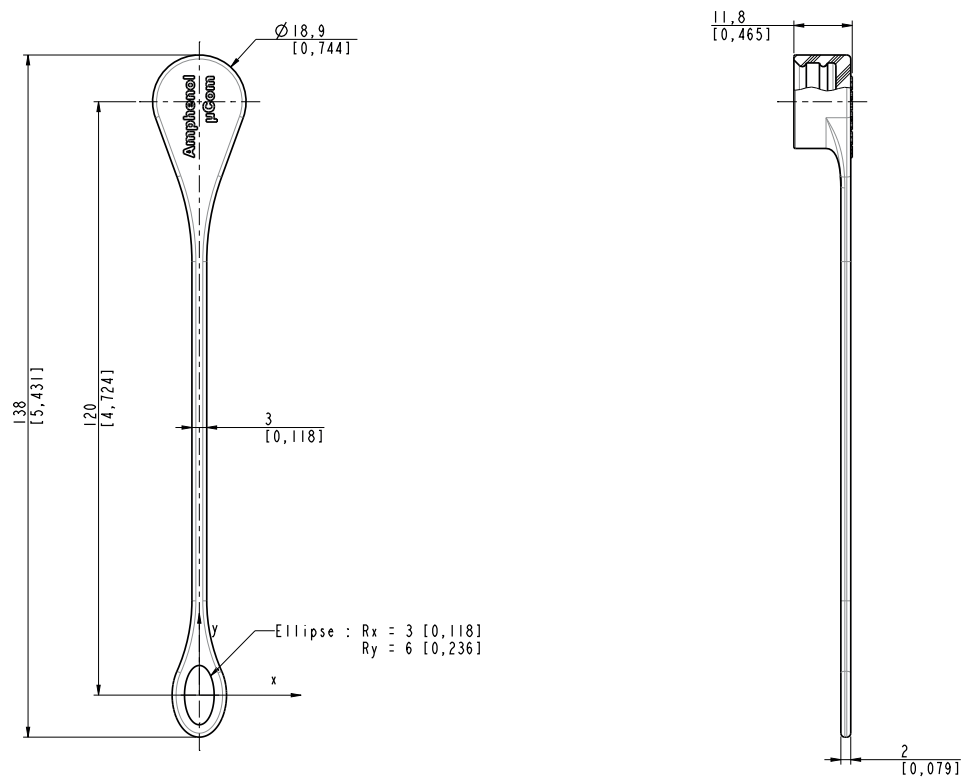


Overall dimension



Neoprene protective cap - for plug

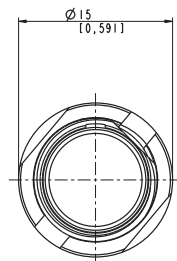
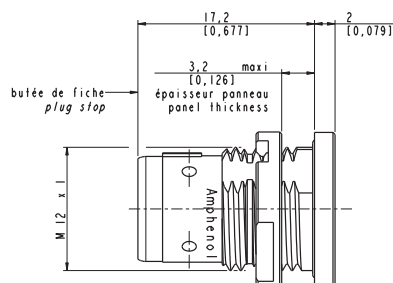
Part number: **31092 X**



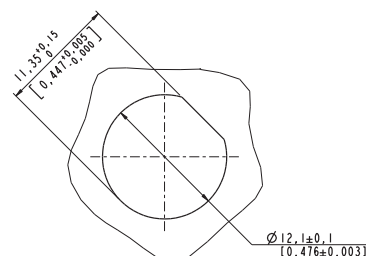
Overall dimension

Dummy receptacle

Part number: **31131 X**



Panel drilling



Contacts

Part number: **31073**

Crimp Pin (10pcs)



Part number: **31074**

Crimp Socket (10pcs)



Tools

Part number: **31055**

Nut clamping tool for PCB
receptacle only



Part number: **31056**

Insertion tool for crimp contacts

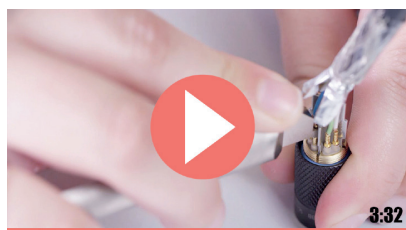


Part number: **31095**

Contact positioner for
M22520/2-01 crimping tool



Assembly Crimp Version



Scan
& discover !



Assembly Solder Version



Scan
& discover !

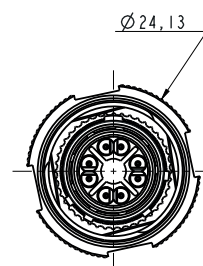
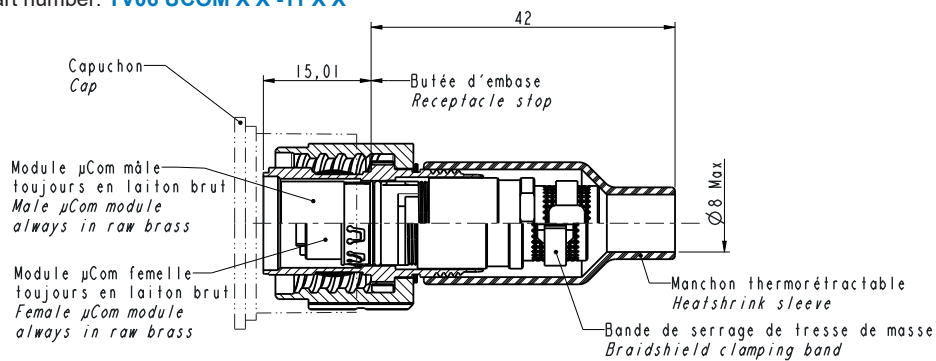


Overall dimension

Plug



Part number: **TV06 UCOM X X -11 X X**

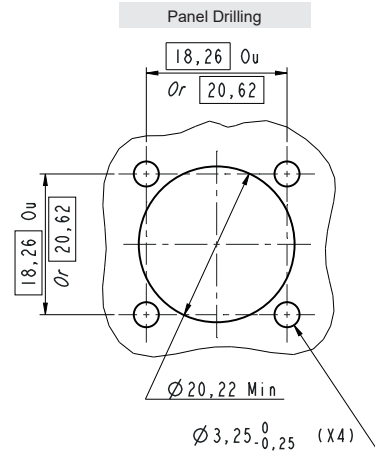
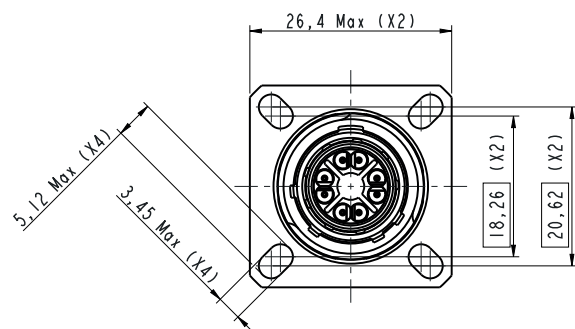
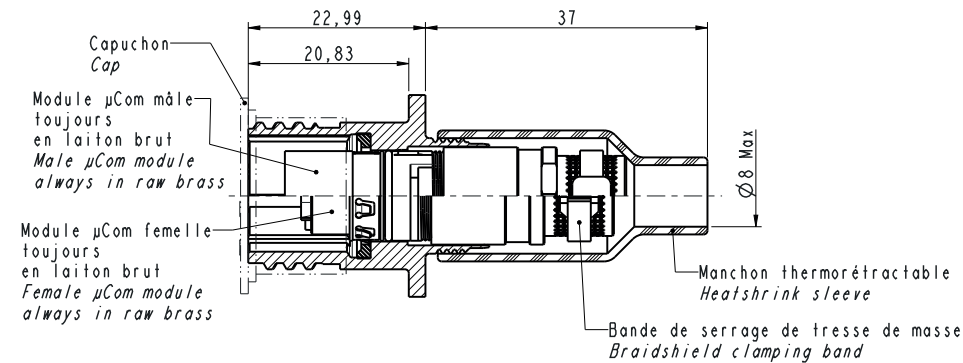


Overall dimension

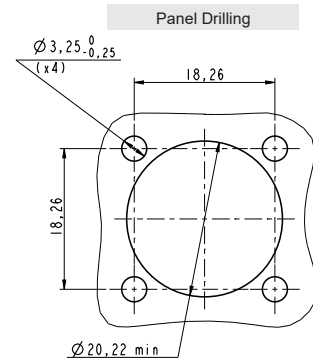
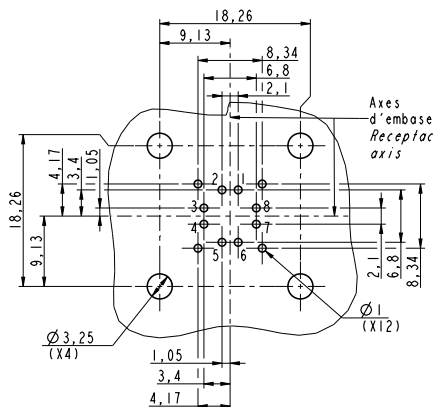
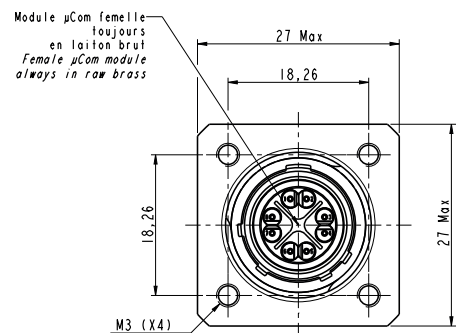
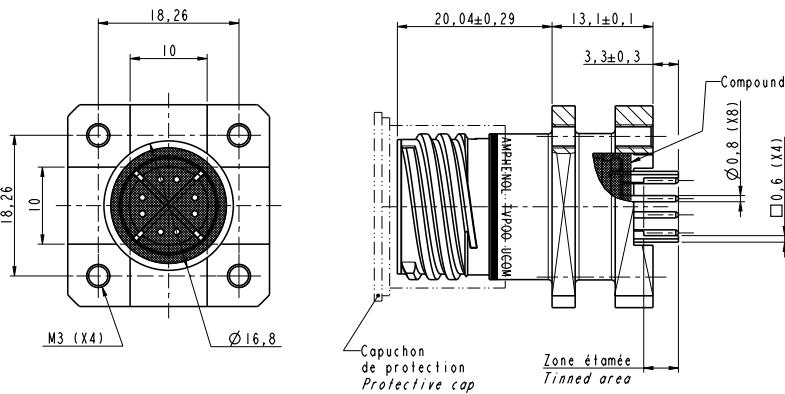


Receptacle - Square flange receptacle

Part number: **TVP00 UCOM X X -11 X X**



Part number: **TVP00 UCOM CI X X -11 X X F459**



Receptacle - Jam nut receptacle

Technical cross-section diagram of a cable assembly. The diagram shows a central cable core surrounded by various protective layers and components. Key dimensions and labels are as follows:

- Dimensions:**
 - 22,12 (mm)
 - 38 (mm)
 - Épaisseur panneau 1,6 - 3,2 (mm) / Panel thickness
 - Ø 8 Max (mm)
- Labels (French and English):**
 - Capuchon / Cap
 - Com mâle en laiton brut / In module raw brass
 - Com femelle en laiton brut / In module raw brass
 - Manchon thermorétractable / Heatshrink sleeve
 - Bande de serrage de tresse de masse / Braidshield clamping band

Module μ Com femelle-
toujours
en laiton brut
*Female μ Com module
always in raw brass*

Panel Drilling

$$\varnothing 20,96^{+0,25}_0$$

Capuchon-
de protection
Protective cap

Technical drawing of a composite panel assembly. The drawing shows a cross-section of the assembly with various components and dimensions. The dimensions are as follows:

- Top left dimension: $22,14 \pm 0,29$
- Top middle dimension: $11 \pm 0,1$
- Top right dimension: $3,3 \pm 0,3$
- Left side dimension: $1,6 - 3,2$
- Left side text: *Epaisseur panneau* and *Panel thickness*
- Left side text: *Joint torique* and *O'ring seal*
- Left side text: *Zone étamée* and *Lined area*
- Right side text: *Compound*
- Right side dimension: $\varnothing 0,8$ (X8)
- Right side dimension: $0,6$ (X4)

Module μ Com femelle-
toujours
en laiton brut
*Female μ Com module
always in raw brass*

Panel Drilling

$$\varnothing 20,96^{+0,25}_0$$

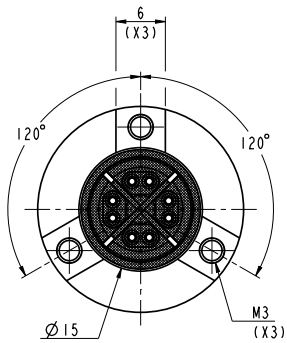
Position—
perçage panneau
Panel drilling
position

Overall dimension

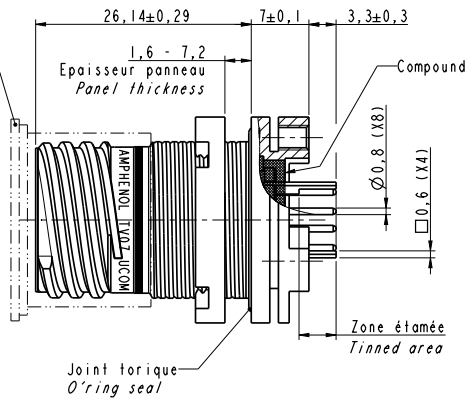
Receptacle - Reduced flange jam nut receptacle



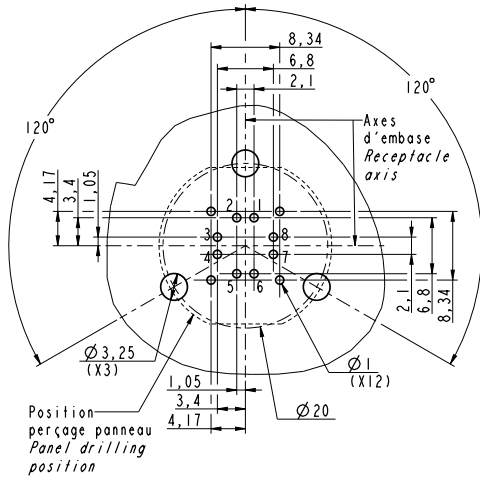
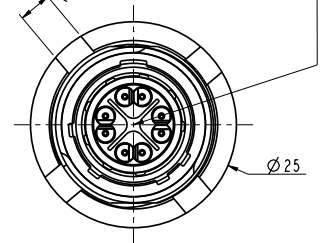
Part number: **TVP00 UCOM X X -11 X X**



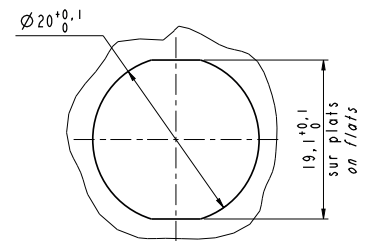
Capuchon de protection
Protective cap



Module μ Com femelle
toujours
en laiton brut
Female μ Com module
always in raw brass

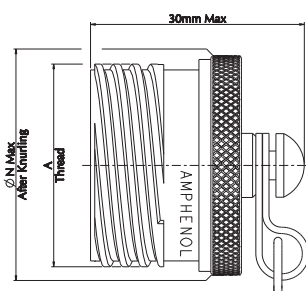
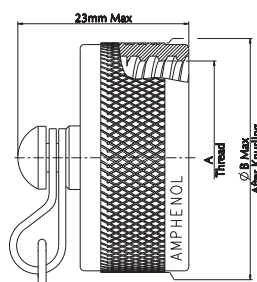


Panel Drilling

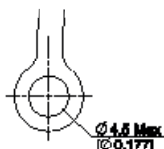


Overall dimension

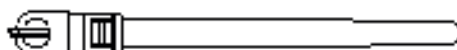
Protective caps

Part number: **BEF X X 11**Part number: **BEC X X 11 XXXX**
BER X X 11 XXXX

Small ring for square flange receptacle



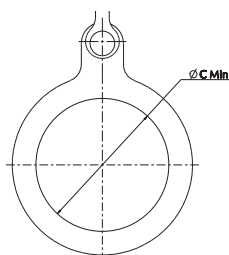
Tie wrap for plug cap



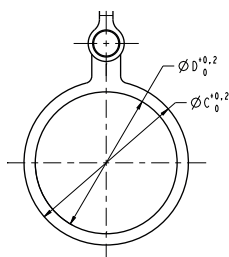
Metallic chain



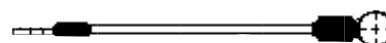
Large ring for jam nut receptacle



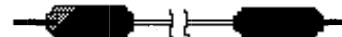
Ring for reduced flange jam nut receptacle



Stainless steel rope



Nylon rope



A thread 0.1P-0.3L-TS Class 2A (External) Class 2B (Internal) (inch)	ØB Max (After Knurling)	ØC Min	ØN Max	Ø B +0,5 0	Ø C +0,2 0	Ø D +0,2 0
.7500	22,60	21,97	20,50	22,60	25,5	20,5

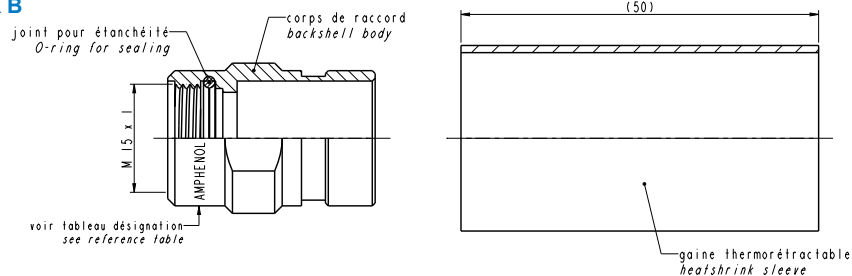
Cap type	Metallic chain length (mm)	Nylon cord length (mm)	Stainless steel rope length (mm)
BEF X X 11 XXXX BER X X 11 XXXX BEF X X 11		127 (+13,-7)	
		160±5	



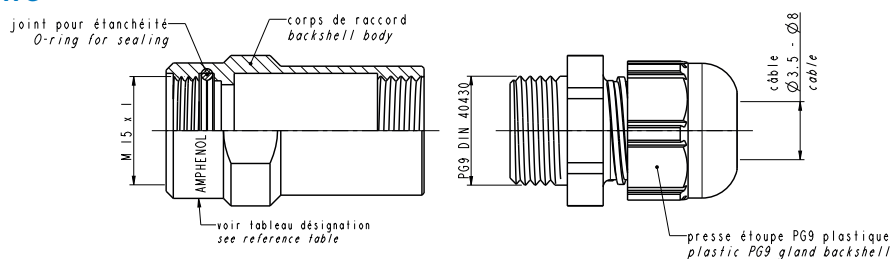
Overall dimension

Special backshell

Part number: **TVUCOM X B**



Part number: **TVUCOM X G**

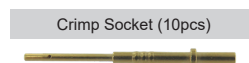


Contacts

Part number: **31073**



Part number: **31074**



Tools

Part number: **31055**

Nut clamping tool for PCB receptacle only



Part number: **31056**

Insertion tool for crimp contacts



Part number: **31095**

Contact positioner for M22520/2-01 crimping tool



Assembly Crimp Version



Scan & discover !



Assembly Solder Version



Scan & discover !



Connectors



1.	2.	3.	4.	5.
Series	Shell type	Contact termination	Shells material & finish	Backshell type (avoid for plug and PCB receptacle)
UCOM - 10G+	PT	C	B	GA

1. Series
UCOM - 10G+ UCOM - 10G+

2. Shell type
PT Plug Tread mating
PP Push-pull mating
R Receptacle
L In line receptacle

3. Contact termination
C Crimp
S Solder
P PCB (only for receptacle)

4. Shell material and finish
B Black nickel ✓
G Brass shell Olive drab cadmium
U Unplated ✓

5. Backshell type (avoid for PCB receptacle)
GA Gland for cable diameter of 7,5mm max
B Band

Examples :

Part number	Description
UCOM-10G+PTCBGA	UCOM thread mating plug, crimp contacts, black nickel finish over brass shell, gland backshell for cable diameter of 7,5mm max
UCOM-RPG	UCOM PCB receptacle, olive drab cadmium finish over brass shell
UCOM-RSUB	UCOM receptacle, solder contacts, unplated brass shell, band backshell

✓ : RoHS compliant

Cordsets



1. 2. 3. 4. 5. 6.

Series	Cordset type	Mating (for plug only)	Contact termination	Shell material and finish	Lenght
UCOM - 10G+	C	T	C	B	002

1. Series

UCOM - 10G+	UCOM - 10G+
-------------	-------------

2. Cordset type

	First end	Second end
C	Plug	Plug
D	Plug	RJ45 Cat6A plug
E	Panel mount receptacle	RJ45 Cat6A plug
F	Plug	In line receptacle
G	Plug	
H	Panel mount receptacle	Open end
J	In line receptacle	

3. Mating (for plug only)

T	Tread mating
P	Push-pull mating

4. Contact termination

C	Crimp
S	Solder

5. Shell material and finish

B		Black nickel ✓
G	Brass shell	Olive drab cadmium
U		Unplated ✓

6. Lenght

002	0.2 m
005	0.5 m
010	1.00 m
015	1.50 m
020	2 m
050	5.00 m
100	10.00 m

Examples :

Part number	Description
UCOM-10G+CTCB002	UCOM cordset, thread mating plug to thread mating plug, black nickel plating over brass shell, lenght of 0,20m.
UCOM-FPCG050	UCOM cordset, push pull plug to in line receptacle, olive drab cadmium plating over brass shell, lenght of 5,00m.
UCOM-HSU100	UCOM cordset, solder in line receptacle to open end, unplated brass shell, lenght of 10,00m.

✓ : RoHS compliant

Protective cap and accessories



1.

2.

Series	Shells material & finish (avoir for neoprene cap)
UCOM - 10G+	B

1. Series		
31139	Metallic protective cap for receptacle	
31037		
31091	Neoprene protective cap	For receptacle
31093		For in line receptacle
31092		For plug
31131	Dummy receptacle	

2. Shell material and finish (avoir for neoprene cap)		
B	Brass shell	Black nickel ✓
G		Olive drab cadmium
U		Unplated ✓

Examples :

Part number	Description
31139B	Black nickel metallic protective cap for receptacle
31093	Neoprene protective cap for in line receptacle
31131U	Unplated dummy receptacle

Part number: **31074**

✓ : RoHS compliant

TV µCom-10Gb+ - How to order

Connectors



1.	2.	3.	4.	5.	6.	7.
Shell type	Contacts termination	Shell material & finish	Shell size	Type of contact	Coding	Deviation (Female µCom module only)
TV06UCOM	C	F	11	P		

1. Series	
TV06UCOM	Plug
TVP00UCOM	Square flange receptacle
TV07UCOM	Jam nut receptacle

2. Contact termination	
C	Crimp
S	Solder
CI	PCB Contacts (for receptacle only)

3. Shell material and finish		
F		Nickel plating ✓
W	Aluminum shell	Olive drab cadmium plating
ZN		Black zinc nickel plating ✓
B	Marine bronze shell ✓	

4. Shell size	
11	Mandatory

5. Type of contact	
P	Male µCom module
S	Female µCom module

6. Coding	
	N coding
A	A coding
B	B coding
C	C coding
D	D coding
E	E coding

7. Deviation (Female µCom module only)	
	No deviation
F459	Stand off
F059	Stand off Reduced Flange (for jam nut receptacle only)

Examples :

Part number	Description
TV06UCOMCF11P	TVµCom plug, crimp contacts, nickel plating, pin contact
TVP00UCOMCI2N11SF459	TVµCom square flange receptacle, PCB version, black zinc nickel plating, female contact and stand-off deviation
TV07UCOMSB11S	TVµCom jam nut receptacle, solder contacts, marine bronze shell, female contact

✓: RoHS compliant



Special backshell

1.

2.

3.

Series	Shell material and finish	Backshell type
TVUCOM	F	B

1. Protective cap type

TVUCOM	Backshell for TVμCom
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3. Backshell type

B	Backshell with banding platform
G	Backshell with gland

2. Shell material and finish

F	Nickel plating ✓
W	Aluminum shell
ZN	Black zinc nickel plating ✓

Examples :

Part number	Description
TVUCOMFB	TVμCom backshell for banding platform and nickel plating
TVUCOMWB	TVμCom backshell for banding platform and olive drab cadmium plating
TVUCOMZNG	TVμCom backshell with gland and black zinc nickel plating

✓ : RoHS compliant

TV µCom-10Gb+ - How to order

Standard metallic cap



1.	2.	3.	4.	5.	6.
Protective cap type	Wire type	Connector type	Shell material and finish	Shell size	Deviation
BF		TV	F	11	

1. Protective cap type	
BF	Protective cap for plug
BEC	Protective cap for square flange receptacle
BER	Protective cap for jam nut receptacle
2. Wire type	
	Metallic chain
N	Nylon cord
R	Jacketed stainless steel rope
RO	Jacketed stainless steel rope with washer end (only for plug)
3. Connector type	
TV	TV shell

4. Shell material and finish		
F		Nickel plating ✓
W	Aluminum shell	Olive drab cadmium plating
ZN		Black zinc nickel plating ✓
B	Marine bronze shell ✓	
5. Shell size		
11	Shell size 11	
6. Deviation		
	No deviation	
F057	Protective cap for Reduced flange jam nut receptacle	

Examples :

Part number	Description
BFTVF11	Plug protective cap, metallic chain and nickel plating
BECNTVZN11	Square flange receptacle protective cap, nylon cord and black zinc nickel plating
BERTVB11F057	Reduced flange jam nut receptacle protective cap, metallic chain and marine bronze shell

✓ : RoHS compliant



NOTES

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NOTES

