

Amphenol SOCAPEX

USB Field™



www.amphenol-socapex.com

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OUR COMPANY



Proven excellence in interconnect solutions

- Since **1947**, Amphenol Socapex has prescribed, designed and manufactured reliable and innovative interconnection solutions for harsh environments, specializing in standard and customized electrical and fiber optic connectors, contacts, accessories and cabling solutions.
- Located in the **Mont Blanc region** of France and Pune in India, Amphenol Socapex serve customers in over 100 countries around the world.
- Amphenol Socapex is part of the leading supplier of interconnect systems **Amphenol**.



1400+
employees



175 M€
Net Sales 2024
75% Export - 25% France



Thyez, **France**
Pune, **India**



Our expertise has no boundaries

Integrated Production in France & India

- 24 000 m² manufacturing capacity on 2 sites
- Design and manufacturing centers in France and India
- State-of-the-art manufacturing technology

Our markets



Defense



**Commercial
Aerospace**



Space



Industry



TECHNOLOGIES & INNOVATION

Engineering Laboratory



Product testing and qualification expertise in many fields:

- Environmental, mechanical, electrical, chemical, climatic skills
- RF and fiber optics expertise

High-Speed Expertise



Strong expertise in high-speed signals

- 3D EM simulation software & EM models
- Time Domain and frequency domain

Materials Expertise



Focus on materials expertise and manufacturing techniques to produce faster, smaller and stronger products

- Advanced technology research and development: polymers, metals, platings, resins ...
- Cutting edge characterizations of interconnects: Radio Frequency, partial discharges ...
- 3D CAD mechanical software, simulation & analysis

Eco-responsibility



Sustainable environment approach, with pro-active management of regulations (REACH / RoHS / Conflict minerals...)

- New materials development, plating, and suitable processes
- Recycling and rational resources consumption

Our workshops



Our workshops located in France & India provide consistent quality adapted to your volume requirements.

Automation & Tooling : Tools for our different activities : molding, machining, assembly

Molding : Solid expertise in thermoplastic elastomer and thermoset molding

Machining : Manufacturing of cylindrical shells and rectangular shells

Screw Machining : Manufacturing of electrical contacts

Plating : Plating with cadmium, nickel, electroless nickel, silver, black zinc nickel, gold

Assembly : Connector and harness assembly (electrical & optical)

Our certifications

Product certifications : MIL-DTL38999, EN3645, EN3155, VG (VG95328, VG95319, VG96944, VG95218, VG96949)



Certified Management System



Certified Management System



Certified Management System



Certified Management System

Our memberships

Member of CMG (Connecting Manufacturing Group) Consortium



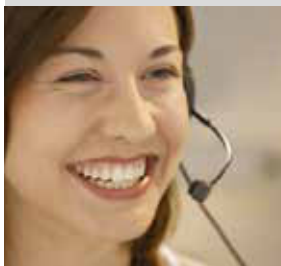
CUSTOMER EXPERIENCE

Service

► We have a strong reputation for helping customers solve their toughest challenges. This approach of serving your needs is ingrained in our company - from our sales team to our product development engineers.

A partner you can trust

Customer Proximity



Design Expertise



Quality Commitment



On Time Delivery Performance



Compliance management



Buy our solutions

You can access our solutions through our global network of sales offices or through our distributors.

Field Sales Team :

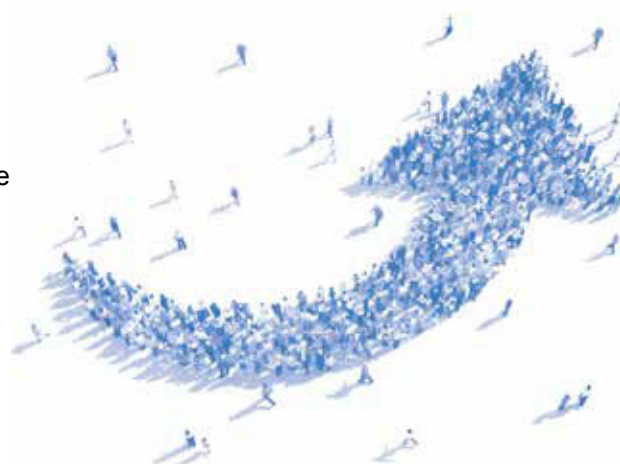
- 10 in France
- 15 in Europe
- 100+ in North America and rest of the world.
- 5 Business Development Managers supporting local sales force Europe, North America and the rest of the world

- Technical Advisement & Multilingual Customer Service :**
20 people

Worldwide Distribution Network :

Our range of circular connectors, contacts, fiber optic connectors, PCB connectors and accessories are available thru our extensive distribution network.

It includes qualified distributors (QPL approved) for assembling MIL-DTL-38999 & derivatives and PT/451 (VG95328) connectors.



Check our product inventory



Product Selectors & 3D Files



NEW

OUR HISTORY

1947 



- Socapex creation in Suresnes, France
- 1st radio connector

1956-57



- Manufacturing unit in Cluses (74), France
- Thomson-CSF becomes primary shareholder

Early 1960's



- 1st board level connectors: HE8
- 1st "licence Bendix" manufactured connectors
- SL Series

1973



- New factory in Thyez (74) France with 250 people, 13 000m²

1975



- Production of 38999 connectors

1986

Amphenol
Socapex

- Amphenol becomes primary shareholder

1995-96



- Expanded Beam connector CTOS launch
- Headquarters transferred to Thyez

2004



- RJ Field launch, "Award Electronica"

2005 



- New factory in Pune, India

2010's



- LuxBeam™ and HDAS launch

2014-2017



- New workshops :
- Cable Assembly & Contact Manufacturing workshop

2019



- Increased manufacturing capacity with 2nd building in Pune, India

2022



- Harness in the box solution launch

Today & tomorrow



- New technologies :
- Investment in automation & technical expertise



- Amphenol SOCAPEX joins the "Convention des Entreprises pour le Climat".
- Our goal: to accelerate our transition to a more sustainable operation.

MARKETS AND APPLICATIONS



Military vehicles

Ground radios shelters
Ground vehicles
Battlefield
Communication systems



C5ISR

Threat detection system
Soldier wearable equipment
Rugged computer & digital radio
Satellite reception unit



Military Avionics & Airframe

Power unit
Aircraft
Radar
Display unit
Flight control system



Commercial Avionics & Airframe

Landing gear
Cockpit
Ground power supply
Engine Flowmeter



Missiles & UAVS

Air missiles and UAVS
Ground control station & launchers



Naval

Navigation guidance



Industrial

Automation
Transportation
Nuclear power station
Robotics



OTHER SOLUTIONS AND RELATED DOCUMENTATIONS

All our documentations are available in PDF format on our website : www.amphenol-socapex.com



Catalog RJ Field™
DOC-001041-ANG



Catalog Rugged Ethernet Switch and Media Converters
DOC-001034-ANG



Brochure μCom-10Gb+
DOC-000015-ANG



Brochure TV μCom-10Gb+
DOC-001014-ANG



Brochure RJF TV Reduced Flange
DOC-001013-ANG



Brochure USB3F TV Reduced Flange
DOC-001012-ANG



Brochure MDP FTV
DOC-001025-ANG



Brochure HDMI FTV
DOC-001036-ANG



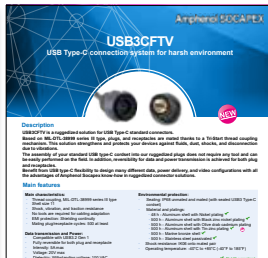
Brochure RJF 6A
DOC-001021-ANG



Brochure RJF TV6A
DOC-001020-ANG



Brochure μCom & TvμCom USB3.2 Gen1
DOC-001032-ANG



Brochure USB3CFTV
DOC-001051-ANG



Brochure USB3 FTV Amplifier / Extender
DOC-001054-ANG



Brochure USB3AP
DOC-001058-ANG



Brochure USB3CFTV Memory Keys



USB3 Type A - Type C - Adapter

CONCEPT OVERVIEW AND BENEFITS

5 TOP REASONS to use USBFIELD™

1 Military. Ruggedized. Connectors

Our concept is simple : use standard, well-know, military connectors as MIL-DTL-38999 series III and MIL-DTL-26482 series I to reinforce standard industrial connectors as RJ45 or USB.



2 No tool. No cabling. Easy mounting

Our USB solution enables you to use a standard USB cordset and mount itself without any cabling operation or tool.



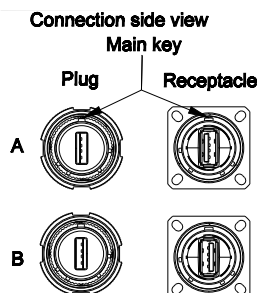
3 Electric continuity. Metallized inserts

Our solutions provide a total shiedling continuity per the metallisation of parts in the receptacle.



4 Two codings. Only one reference

Our connectors, plugs and receptacles, can be configured in four different codings with the same reference.



5 Modifiable. Repairable. Removal inserts

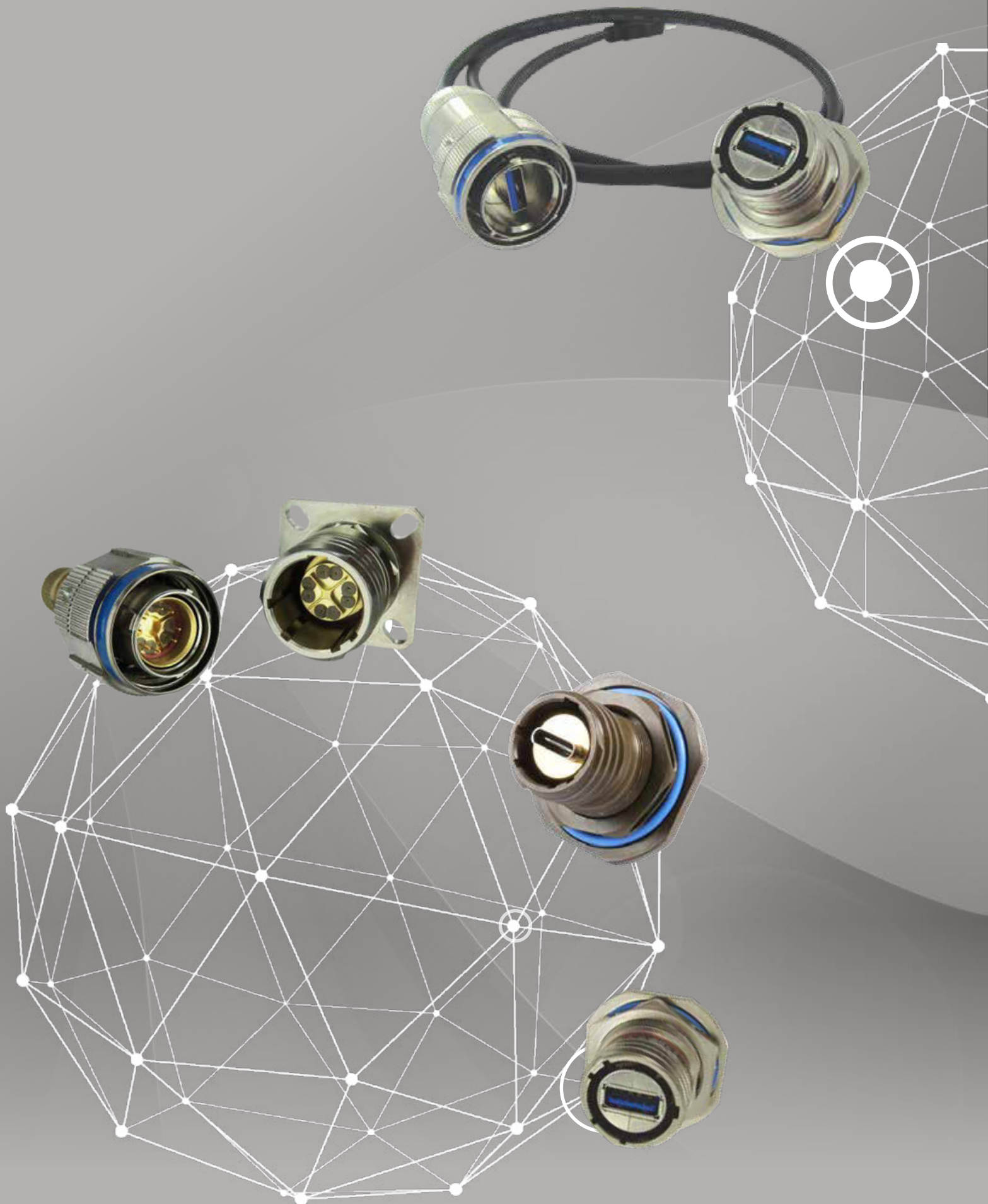
Our parts can be changed as simply as the assembly, using a dedicated tool or simply by hands. This allows to remove the cordset, change the coding option or repair the solution.



USB STANDARDS AND APPROPRIATE SOLUTIONS

	USB2.0	USB3.2 Gen1	USB3.2 Gen2
Data Rate	480 Mb/s	5 Gb/s	10 Gb/s
Voltage	5 V	5 V	5V
Current	1,5A	1,5A	1,5A
Power	2,5 W	2,5 W	2,5 W
Number of contacts	2 power 2 signal	2 power 6 signal	2 power 6 signal
Max cable length per USB standard	4,80 m	3 m	1 m

USB3CFTV™	✓	✓	✓
USB3FTV™	✓	✓	
USBFTV™	✓		
USBBFTV	✓	✓	
µCom & TVµCom USB3.2	✓	✓	✓
Cable and cordset	✓	✓	
Adaptor and access point	✓	✓	
USB3CFTV™ memory key	✓	✓	
USB3FTV™ memory key	✓	✓	
ROK - Memory key	✓	✓	
USBFTV™ - USB3.2 amplifier	✓	✓	
USBFTV™ - USB2.0 amplifier	✓		



USB3.2



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USB3.2

USB2.0

Cables and
cordsetsAdapters and
access pointsRugged
electronics

Accessories

Assembly
instructions

How to order

USB3CFTV



Description

USB3CFTV is a ruggedized solution for USB Type-C standard connectors.

Based on MIL-DTL-38999 series III type, plugs, and receptacles are mated thanks to a Tri-Start thread coupling mechanism. This solution strengthens and protects your devices against fluids, dust, shocks, and disconnection due to vibrations.

The assembly of your standard USB type-C cordset into our ruggedized plugs does not require any tool and can be easily performed on the field. In addition, reversibility for data and power transmission is achieved for both plug and receptacles.

Benefit from USB type-C flexibility to design many different data, power delivery, and video configurations with all the advantages of Amphenol Socapex know-how in ruggedized connector solutions.

Main features

Main characteristics:

- Thread coupling, MIL-DTL-38999 series III type
- Shell size 11
- Shock, vibration, and traction resistance
- No tools are required for cabling adaptation
- EMI protection: Shielding continuity
- Mating plug/receptacle cycles: 500 at least

Data transmission and Power:

- Compatible with USB3.2 Gen 1
- Fully reversible for both plug and receptacle
- Intensity: 5A max
- Voltage: 20V max
- Dielectric: Withstanding voltage: 100 VAC
- Maximum length transmission: Up to 1 m (only for cordset versions). Amplifiers to come, please consult us.

Environmental protection:

- Sealing: IP68 unmated and mated (with sealed USB3 Type-C cordset)
- Material and platings:
 - 48 h - Aluminum shell with Nickel plating ✓
 - 500 h - Aluminum shell with Black zinc nickel plating ✓
 - 500 h - Aluminum shell with Olive drab cadmium plating
 - 500 h - Aluminum shell with Tin-zinc plating ✓ **NEW**
 - 500 h - Marine bronze shell ✓
 - 500 h - Stainless steel passivated ✓
- Shock resistance: IK06 onto mated pair
- Operating temperature: -40°C to +85°C (-40°F to 185°F)

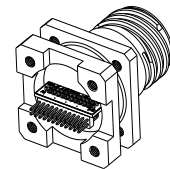
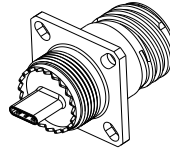
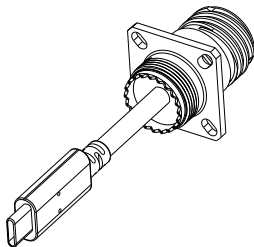
✓ : RoHS compliant

Back terminations

Cordset with USB Type-C male plug

USB3C male termination

USB Type-C with PCB: PC tails contacts

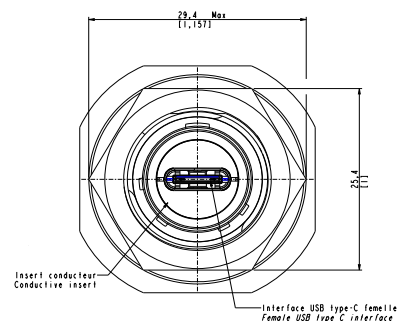
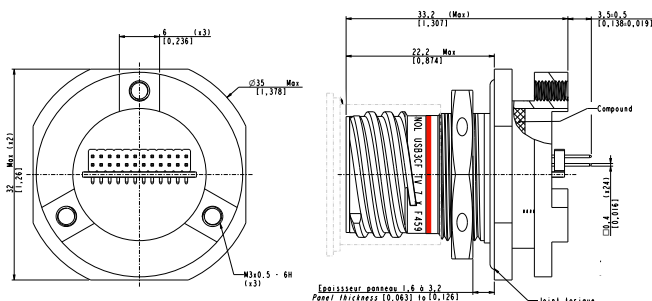


How to order : Please refer to page 115

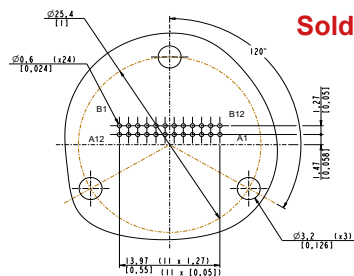
Overall dimension

Part number type: **USB3CFTV 7 X F459**

X: see the How to order to complete your part number

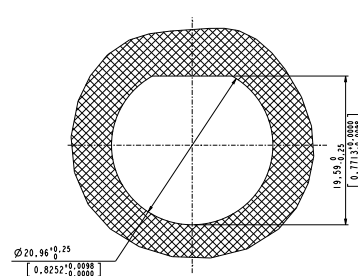


PCB layout

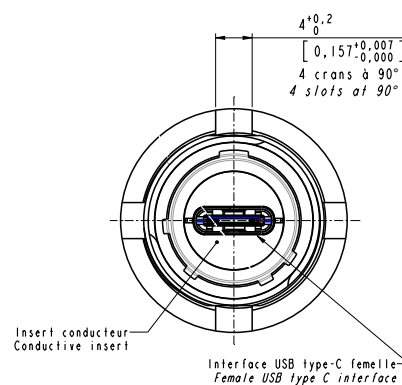
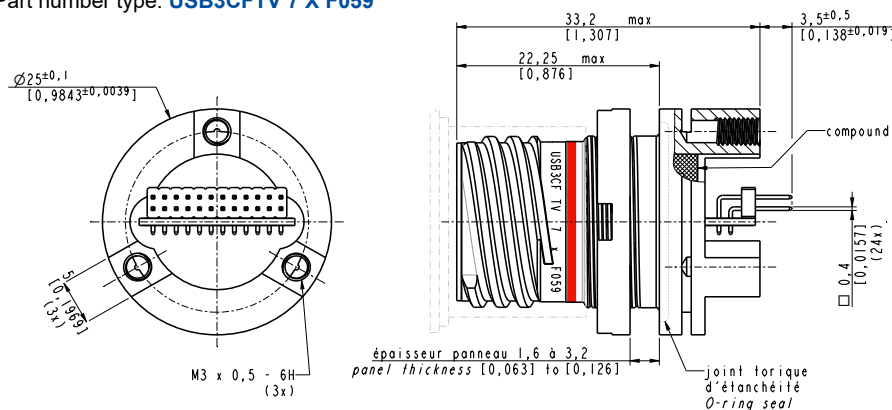


Solder view

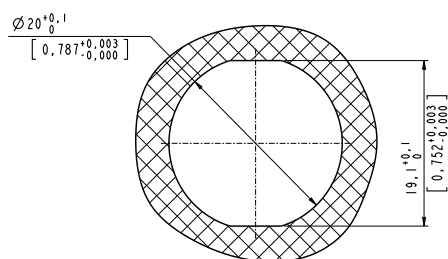
Panel Drilling

Part number type: **USB3CFTV 7 X F059**

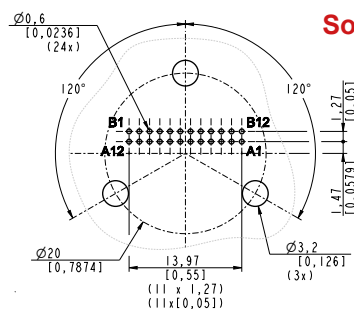
X: see the How to order to complete your part number



Panel rilling



PCB layout



Solder view

USB3CFTV

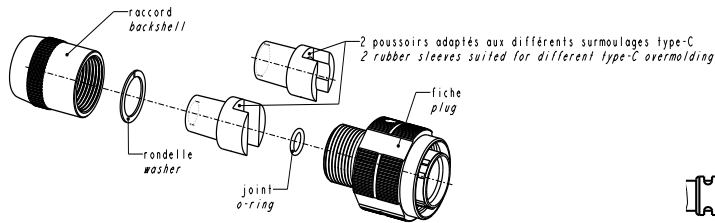
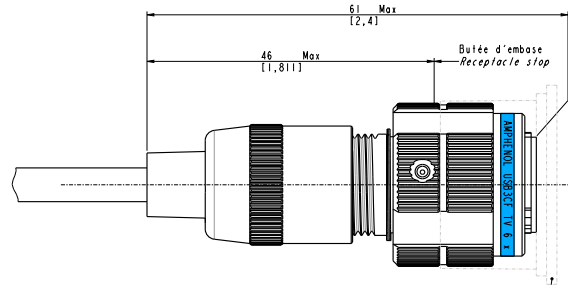
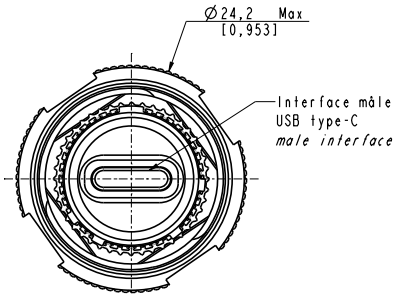


Overall dimension

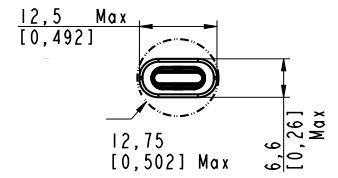
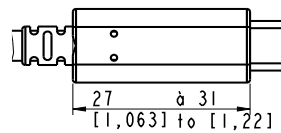
Plug - Plug without cordset – Shell type 6

Part number type: **USB3CFTV 6 X**

X: see the How to order to complete your part number



USB3 type-C plug recommended dimensions
(plug not included)

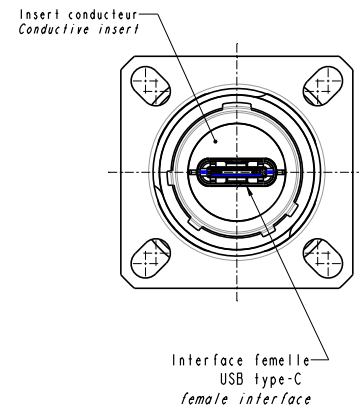
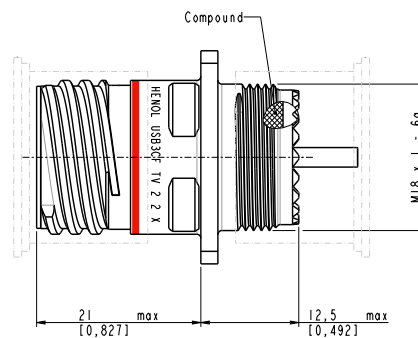
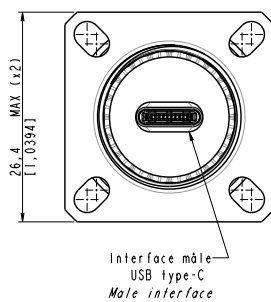


Note: USB3 Type-C cordset can be inserted in any direction.
Reversibility is managed on Receptacle side also.

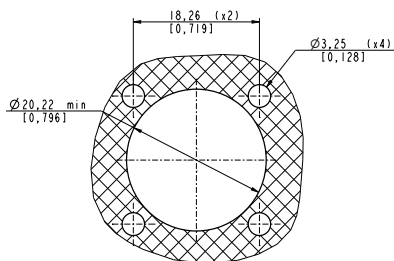
Receptacle - Square flange receptacle – Shell type 2 - 4 mounting holes - Male USB termination

Part number type: **USB3CFTV 2 2 X**

X: see the How to order to complete your part number



Panel Drilling



USB3CFTV

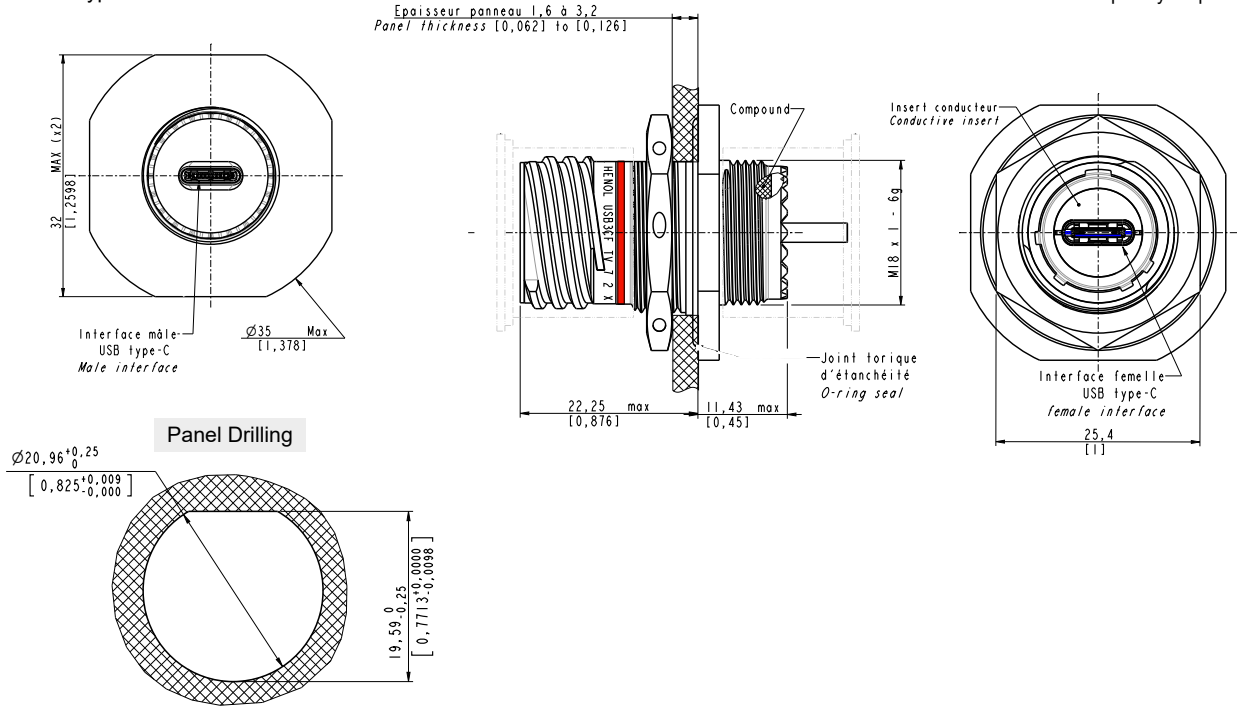


Overall dimension

Receptacle - Jam nut receptacle – Shell type 7 - Male USB termination - Hexagonal nut mounting

Part number type: **USBC3F TV 7 2 X**

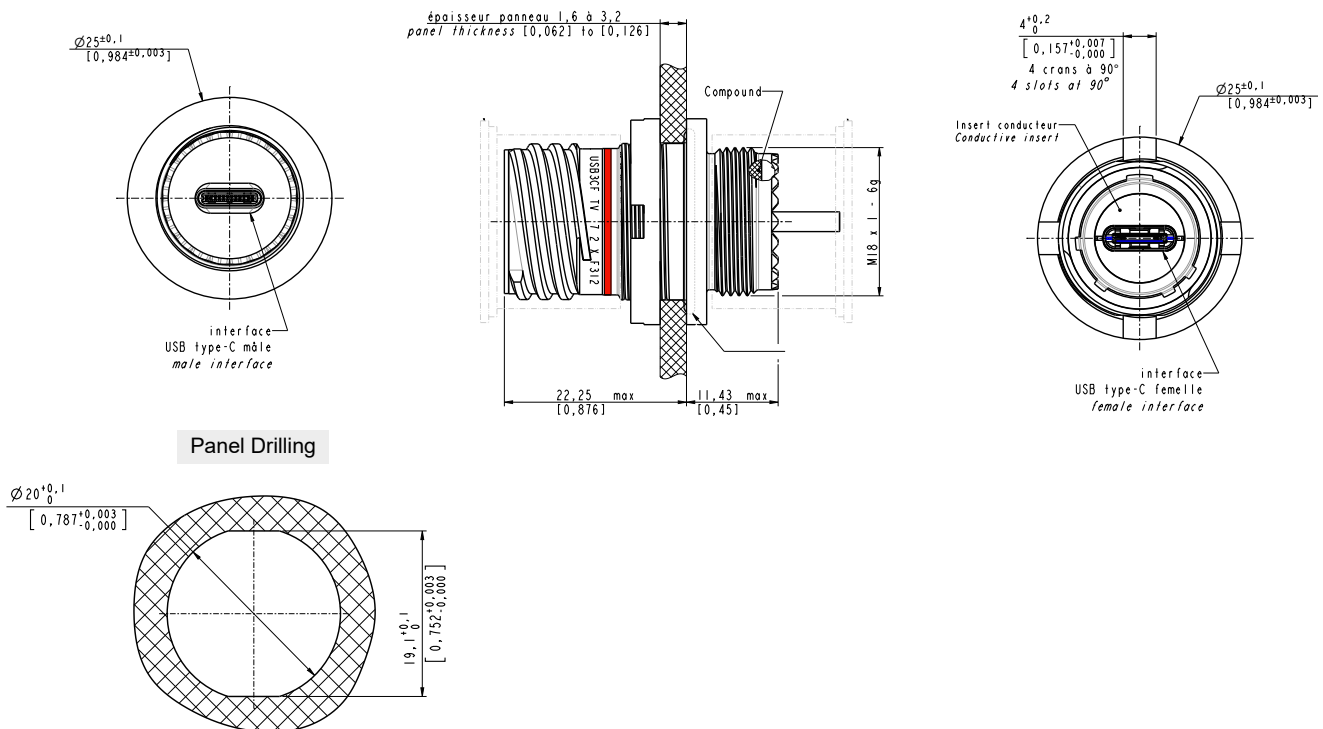
X: see the How to order to complete your part number



Receptacle - Reduced flange receptacle F312 – Jam nut shell type 7 - USB male termination - Castle nut mounting

Part number type: **USBC3FTV 7 2 X F312**

X: see the How to order to complete your part number



USB3CFTV

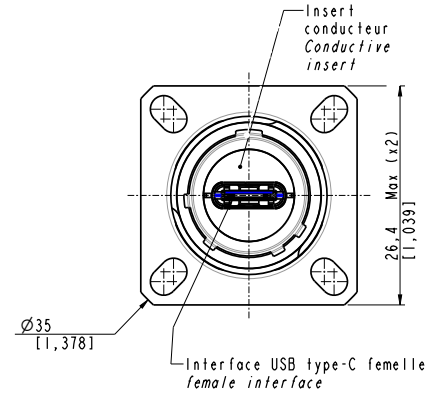
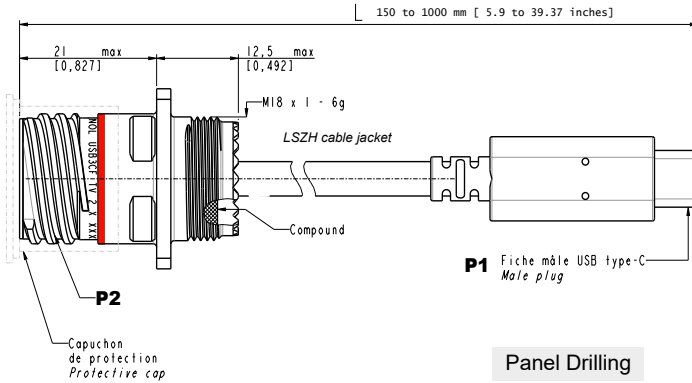


Overall dimension

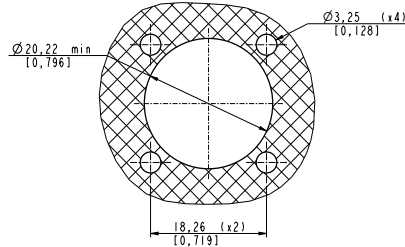
Receptacle - Square flange receptacle – Shell type 2 - 4 mounting holes - Cordset with USB male plug

Part number type: **USB3CFTV 2 X XXX**

X: see the How to order to complete your part number



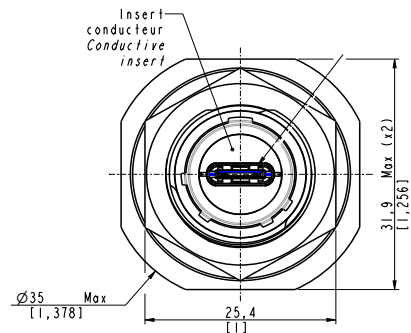
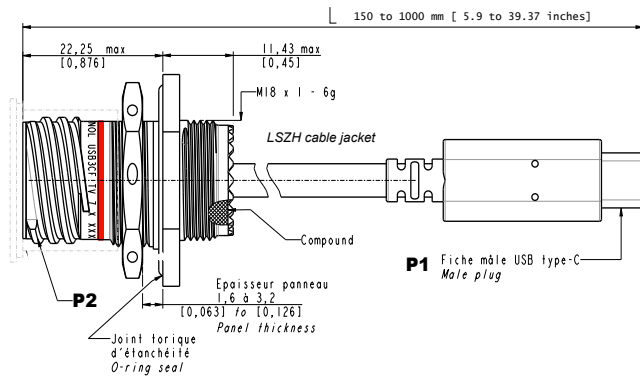
Panel Drilling



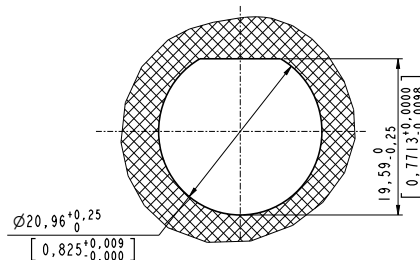
Jam nut receptacle – Shell type 7 - Cordset with USBC male plug - Hexagonal nut mounting

Part number type: **USB3CFTV 7 X XXX**

X: see the How to order to complete your part number



Panel Drilling



USB3CFTV

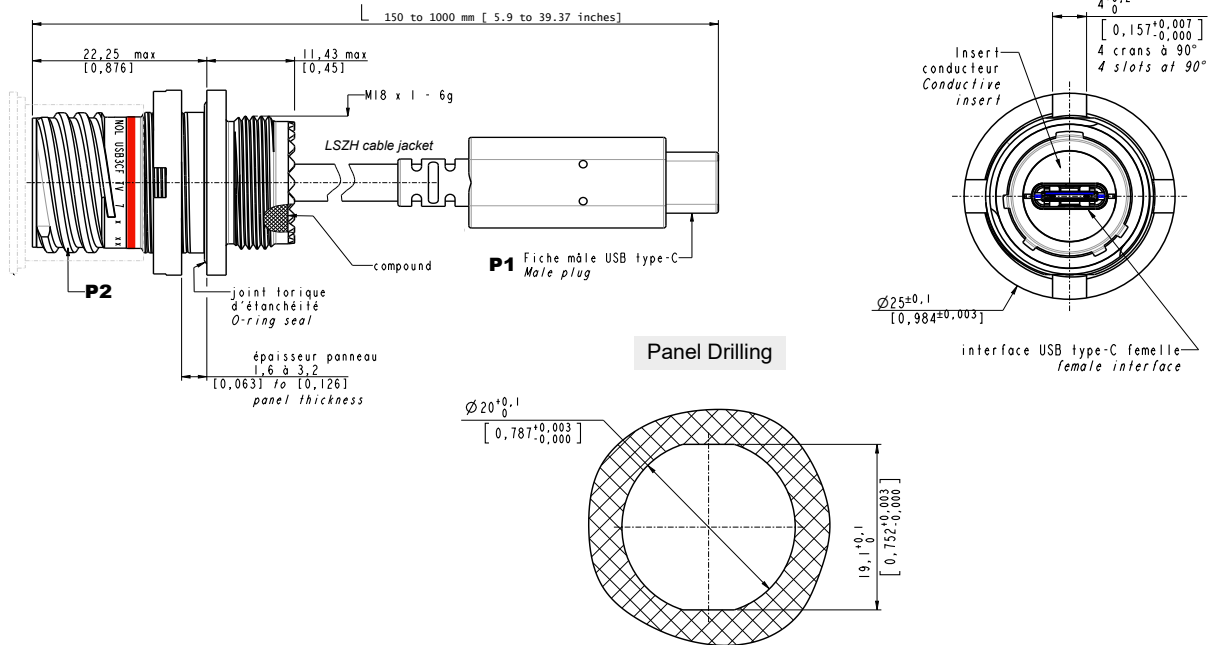


Overall dimension

Receptacle - Reduced flange receptacle F312 – Jam nut shell type 7 - Cordset with USB male plug - Hexagonal nut mounting

Part number type: **USB3CFTV 7 X XXX F312**

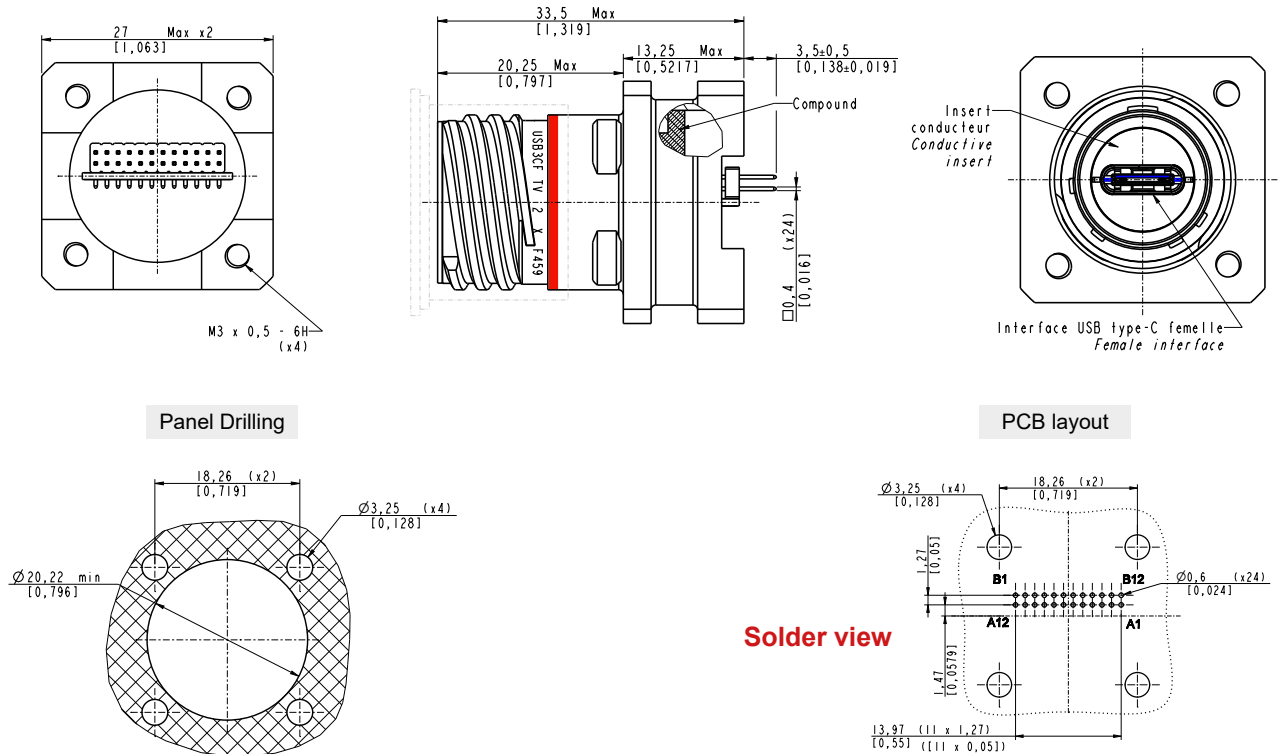
X: see the How to order to complete your part number



Stand-off Square flange receptacle F459 – 4 mounting holes - Shell type 2 with double flange for PCB mounting

Part number type: **USB3CFTV 2 X F459**

X: see the How to order to complete your part number



Solder view

USB3FTV™



Description

USB3FTV™ is a complete ruggedized solution around USB3.2 Gen1 Type-A standard using a Tri Start Thread coupling mechanism (MIL-DTL-38999 series III type) to connect the plug and receptacle.

This solution allows you to insert a standard USB3.2 Gen1 cordset into a metallic plug which will protect it from shocks, dust and fluids. The assembly of this ruggedized plug doesn't require any tools and can be assembled easily in the field. Perfectly adapted to the USB3.2 Gen1 standard, you have two coding possibilities to facilitate coupling when you have several receptacles on a panel.

The corresponding USB3FTV™ receptacle dedicated to be mounted on your panel enables you to reinforce and protect your system against leakage, shocks, vibrations and much more. This receptacle part is delivered with a defined coding when ordered but can be conveniently changed with our dedicated USBF ODE tool.

You have also the possibility to order a complete solution with the included USB3.2 Gen1 cable, on the plug or the receptacle side.

Main features

MAIN CHARACTERISTICS

- Tri Start Thread coupling mechanism (MIL-DTL-38999 series III type) with anti-decoupling device - Shell size 15
- 2 mechanical coding / polarization possibilities (receptacle insert rotation)
- Sealed against fluids and dusts (IP68)
- Shock, vibration and traction resistant
- No cabling operation in field and no tools required
- Improved EMI protection
- USB3FTV plug retention in the receptacle: 100 N in the axis
- Mating cycles: 500 minimum

DATA TRANSMISSION

- USB-A
- USB specification 3.2 Gen1
- Data rate: up to 5Gb/s for high speed USB

ENVIRONMENTAL PROTECTION

- Sealing (when mated): IP68 (temporary immersion)
- Salt spray: - 48 h with nickel plating ✓
- 500 h with Black zinc nickel ✓
- 500 h with Olive drab cadmium
- 500 h with Tin-zinc plating ✓ **NEW**
- 1000 h with Marine bronze shell ✓
- Fire retardant / low smoke: UL94 V0 and EN45545
- Vibrations: 10 - 500 Hz, 10 g, 3 axes: no discontinuity > 1micro s
- Shocks: IK06: weight of 250 g drop from 40 cm [15.75 in] onto connectors (mated pair)
- Humidity: 21 days, 43°C, 98% humidity
- Temperature range: - 40°C / +85°C

APPLICATIONS

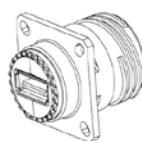
- Battlefield communication systems
- C5ISR
- Data acquisition and transmission in harsh environment
- Navy
- Rail Mass Transit
- Industrial process control
- Robotics
- CNC machines
- Oil & Gas

✓ : RoHS compliant

How to order : Please refer to page 116

Back terminations

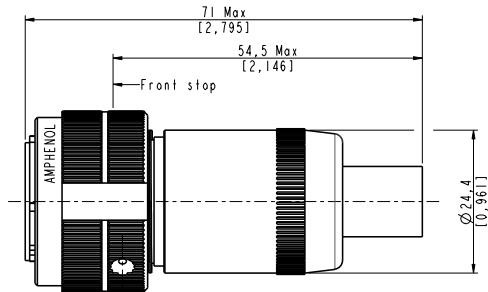
Type 1:
female USB-A



USB3FTV™

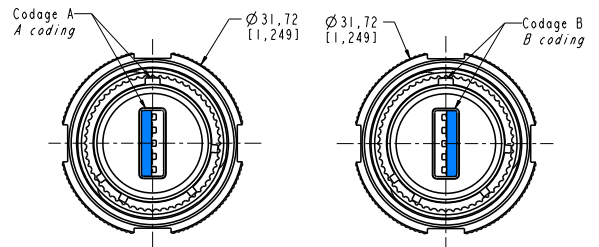
Overall dimension

Plug - Shell type 6

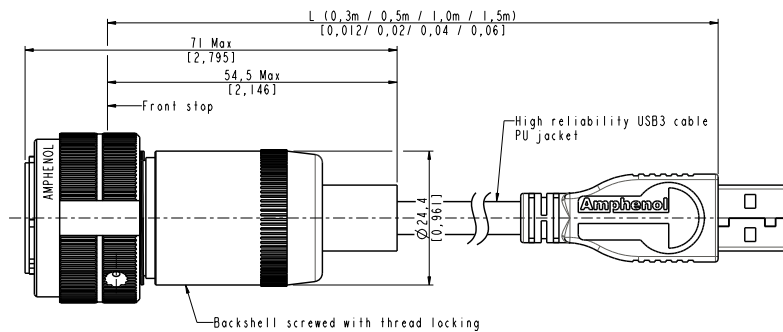
Part number type: **USB3FTV 6 X**

Coding A

Coding B

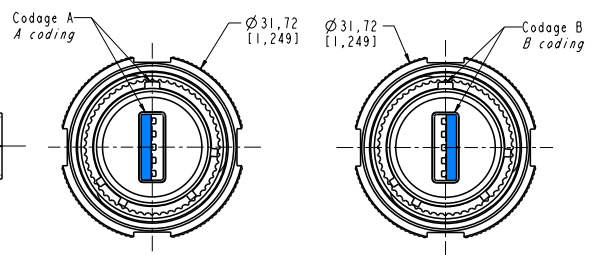


Plug - Shell type 6 - USB-A cordset

Part number type: **USB3FTV 6 X XX X CROS****USB3FTV 6 X XX X STR**

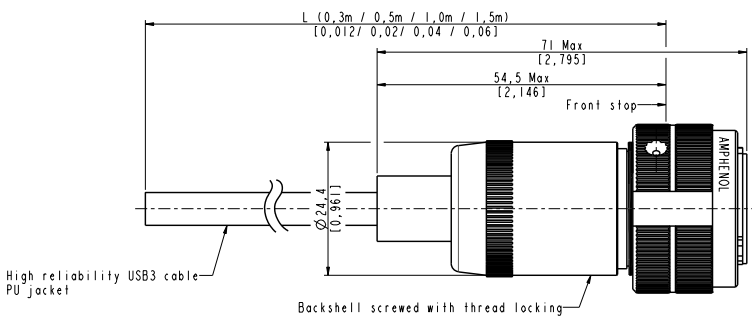
Coding A

Coding B

**Important note:**

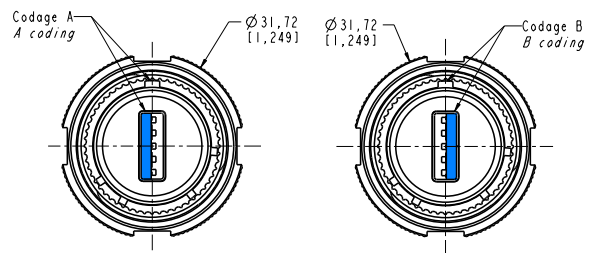
- To define a straight or crossed USB3.2 Gen1 cordset, please refer to "Assembly instructions" page 80

Plug - Shell type 6 - Open USB cordset

Part number type: **USB3FTV 6 X XX X OPEN**

Coding A

Coding B



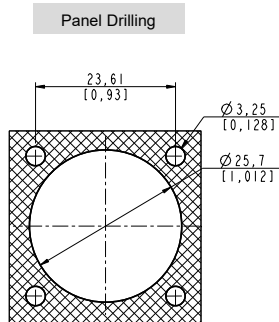
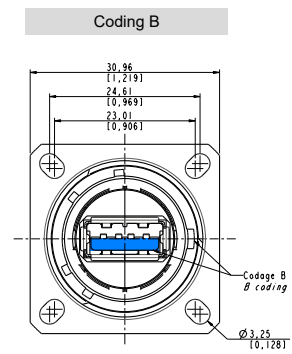
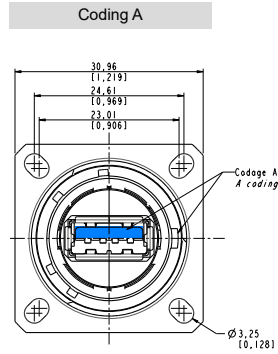
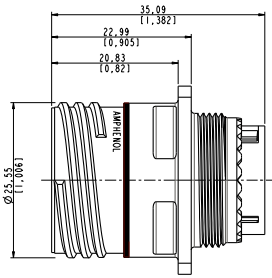
USB3FTV™



Overall dimension

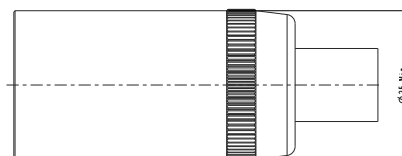
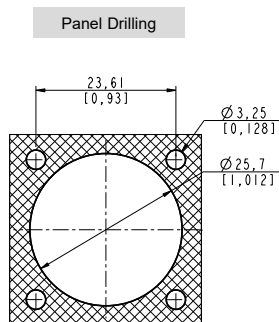
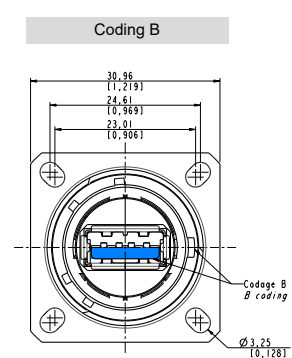
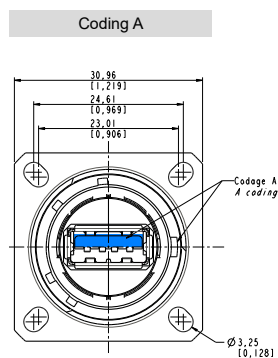
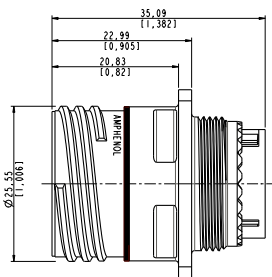
Receptacle - Square flange receptacle - 4 mounting holes - Shell type 2 - Back termination female

Part number type: **USB3FTV 2 X X**



Receptacle - Square flange receptacle - 4 mounting holes - Shell type 2 - Back termination female - Metal backshell

Part number type: **USB3FTV 2 X PE X**



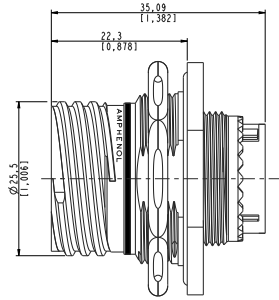
USB3FTV™



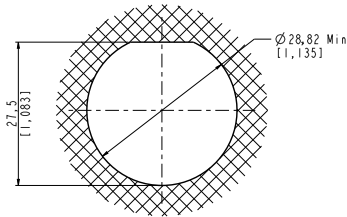
Overall dimension

Receptacle - Jam nut receptacle - Hexagonal nut mounting - Shell type 7 - Back termination female

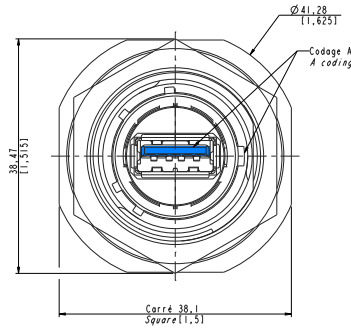
Part number type: **USB3FTV 7 X X**



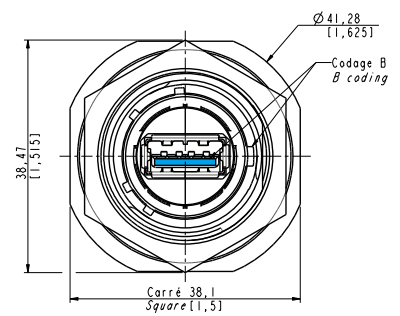
Panel Drilling



Coding A

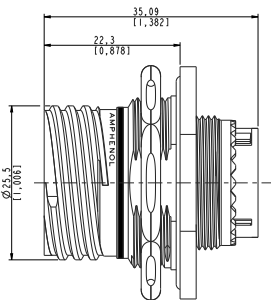


Coding B

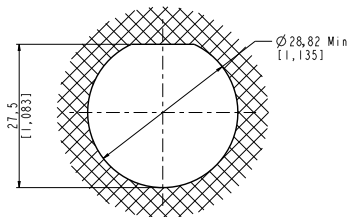


Receptacle - Jam nut receptacle - Hexagonal nut mounting - Shell type 7 - Back termination female - Metal backshell

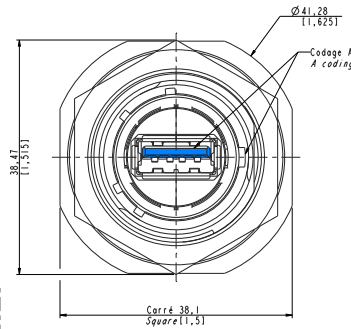
Part number type: **USB3FTV 7 X PE X**



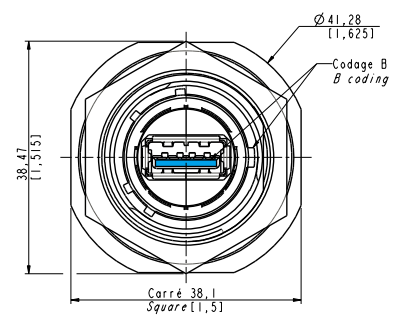
Panel Drilling



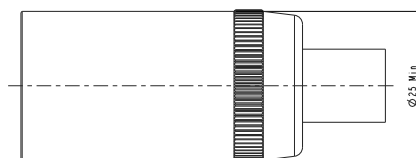
Coding A



Coding B



Metal backshell



USB3FTV™ - TRANSVERSALLY SEALED AND HERMETIC RECEPTACLE

Description

The transversally sealed receptacle is in all aspects equivalent to the standard and in addition, is improved with compound at the rear of the receptacle. This will prevent the sealing of the receptacle when unmated with his plug or protective cap.

The hermetic solution, as the transversally sealed one is compounded at the rear of the receptacle. Helium leakage is less than 1.10-6 cm³ per second [0.1 micron cubit ft per hour] at one bar [15 psi] pressure differential. The test is performed on all of the hermetic receptacles.



Main features

MAIN CHARACTERISTICS

- Tri Start Thread coupling mechanism (MIL-DTL-38999 series III type) with anti-decoupling device - Shell size 15
- 2 mechanical coding/polarization possibilities by the user (receptacle insert rotation)
- Sealed against fluids and dusts (IP68)
- Shock, vibration and traction resistant
- No cabling operation in field and no tools required
- Improved EMI protection
- USB3FTV plug retention in the receptacle: 100 N in the axis
- Mating cycles: 500 minimum

DATA TRANSMISSION

- USB-A
- USB specification 3.2 Gen1
- Data rate: up to 5Gb/s for high speed USB

ENVIRONMENTAL PROTECTION

- Sealing (when mated): IP68 (temporary immersion)
- Salt spray:
 - 48 h with nickel plating ✓
 - 500 h with olive drab cadmium
 - 500 h with Tin-zinc plating ✓ NEW
 - 1000 h with marine bronze shell ✓
 - 500 h with black zinc nickel ✓
- Fire retardant / Low smoke: UL94 V0 and EN45545
- Vibrations: 10 - 500 Hz, 10 g, 3 axes: no discontinuity > 1micro s
- Shocks: IK06 > weight of 250 g drop from 40 cm [15.75 in] onto connectors (mated pair)
- Humidity: 21 days, 43°C, 98% humidity
- Temperature range: - 40°C / +85°C

APPLICATIONS

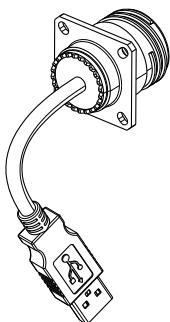
- Battlefield communication systems
- C5ISR
- Data acquisition and transmission in harsh environment
- Navy
- Rail Mass Transit
- Industrial process control
- Robotics
- CNC machines
- Oil & Gas

✓ : RoHS compliant

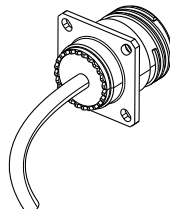
How to order : Please refer to page 117

Back terminations

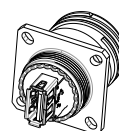
USB cable end type A



USB cable type «OPEN»



VG96949 Female USB-A



USB3FTV™ - TRANSVERSALLY SEALED AND HERMETIC RECEPTACLE

Overall dimension

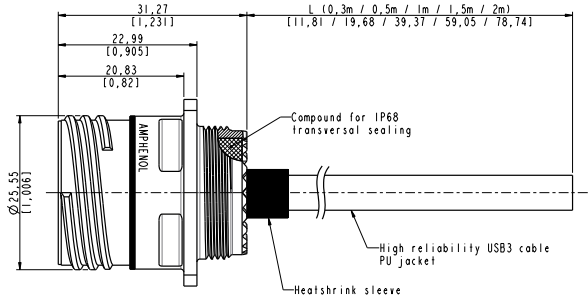
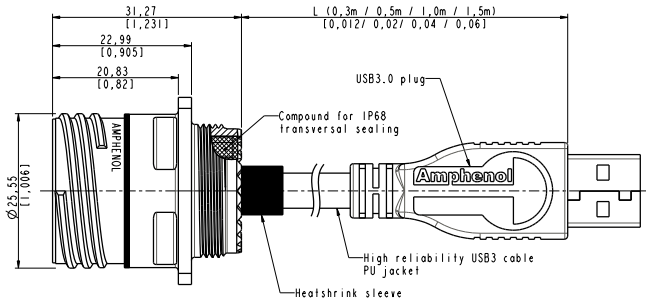


Receptacle - Square flange receptacle - 4 mounting holes - Shell type 2 - USB-A or Open cordset

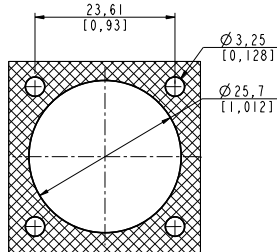
Part number type: **USB3FTV 2 S X XX X ACROS**

USB3FTV 2 S X XX X ASTR

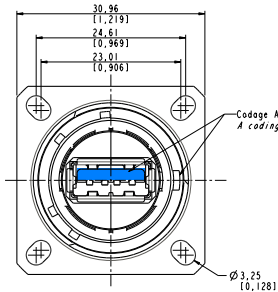
Part number type: **USB3FTV 2 S X XX X OPEN**



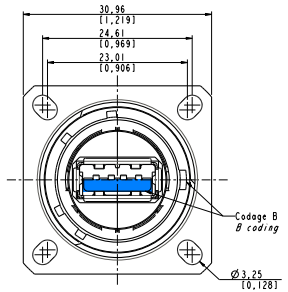
Panel drilling



Coding A



Coding B

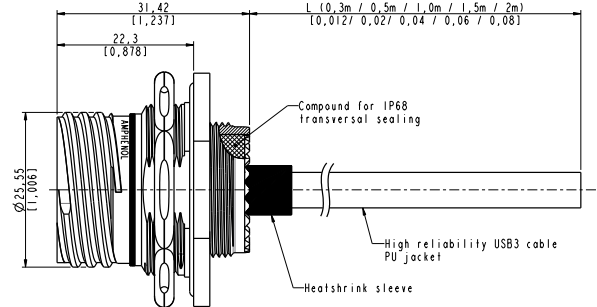
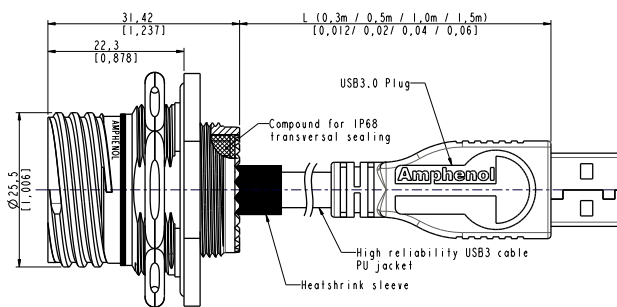


Receptacle - Jam nut receptacle - Hexagonal nut mounting - Shell type 7 - USB-A or Open cordset

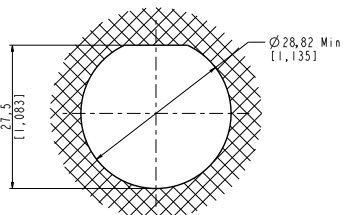
Part number type: **USB3FTV 7 S X XX X ACROS**

USB3FTV 7 S X XX X ASTR

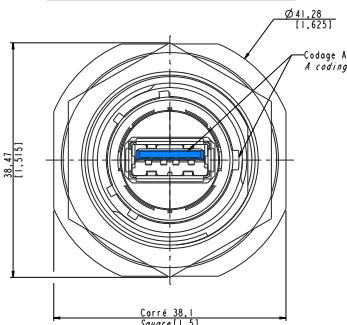
Part number type: **USB3FTV 7 S X XX X OPEN**



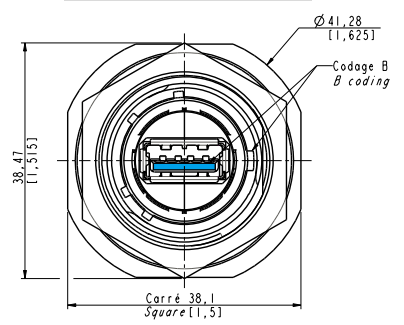
Panel drilling



Coding A



Coding B



Important note:

- To define a straight or crossed USB3.0 cordset, please refer to "Assembly instructions" page 80

USB3FTV™ - TRANSVERSALLY SEALED AND HERMETIC RECEPTACLE

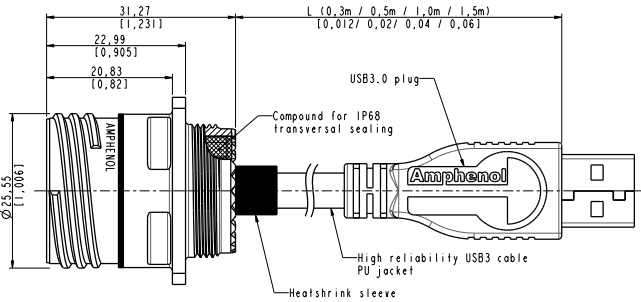
Overall dimension

Receptacle - Square flange receptacle - 4 mounting holes - Shell type 2 - USB-A or Open cordset

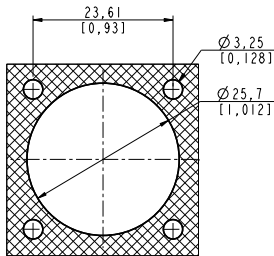


Part number type: **USB3FTV 2 H X XX X ACROS**

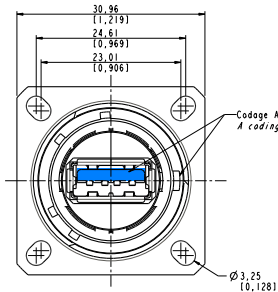
USB3FTV 2 H X XX X ASTR



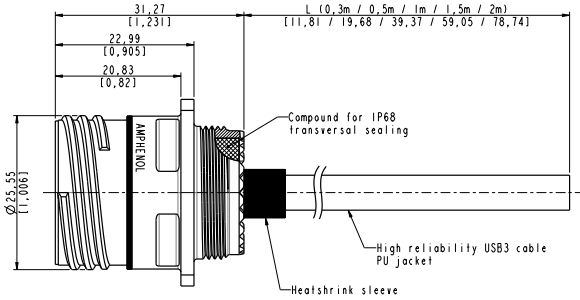
Panel drilling



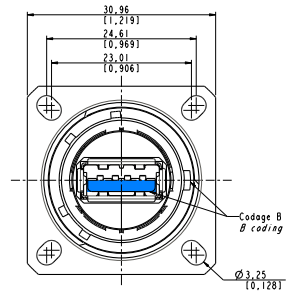
Coding A



Part number type: **USB3FTV 2 H X XX X OPEN**



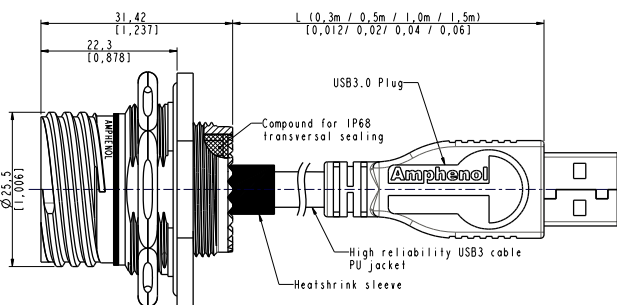
Coding B



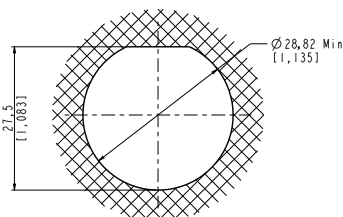
Receptacle - Jam nut receptacle - Hexagonal nut mounting - Shell type 7 - USB-A or Open cordset

Part number type: **USB3FTV 7 H X XX X ACROS**

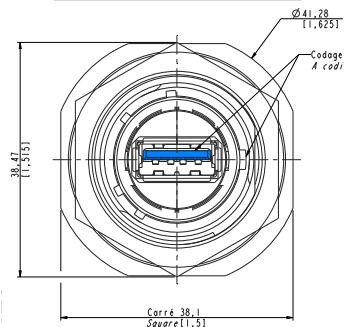
USB3FTV 7 H X XX X ASTR



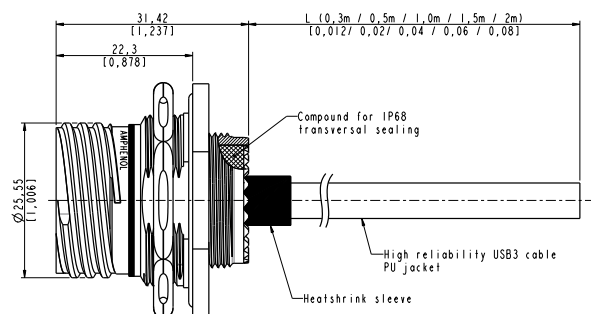
Panel drilling



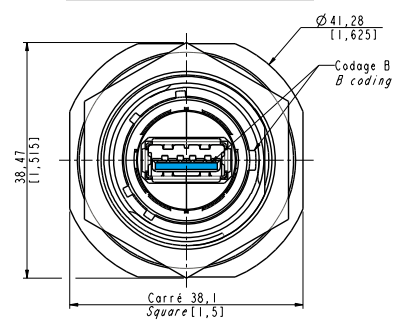
Coding A



Part number type: **USB3FTV 7 H X XX X OPEN**



Coding B



Important note:

- To define a straight or crossed USB3.0 cordset, please refer to "Assembly instructions" page 80

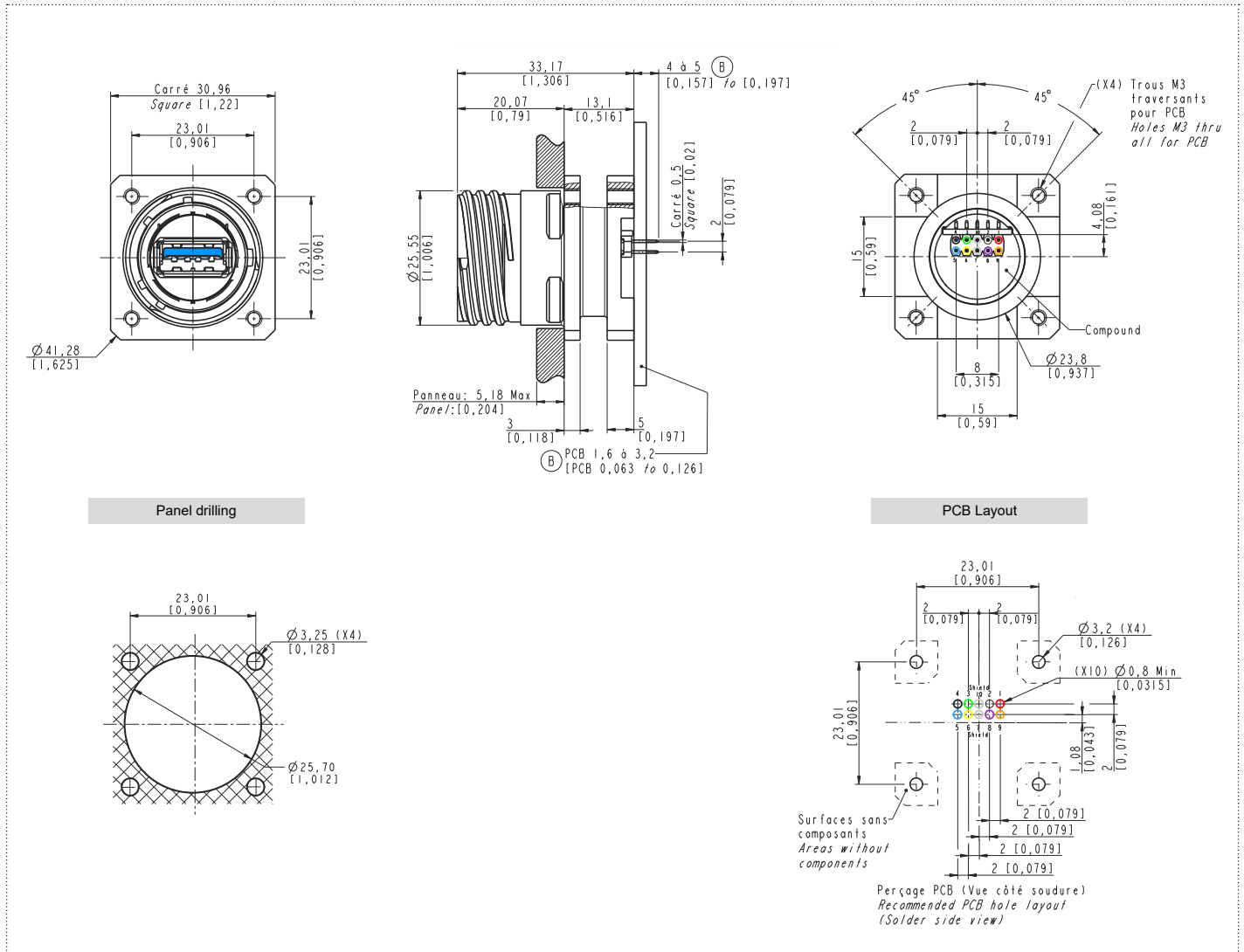
USB3FTV™ - STAND OFF RECEPTACLE

Description

This enhanced design allows you to mount the connector shell directly on the PC board. Soldering your contacts directly on the board will save you a lot of space inside your system. As the double-flange of this connector is directly fixed on the board, mechanical stresses are absorbed by the shell and not the contacts. In addition to this benefit, the sealing is improved by the compounded receptacle.

Overall dimension

Receptacle - Square flange receptacle - 4 mounting holes - Shell type 2 - PC Tails contacts



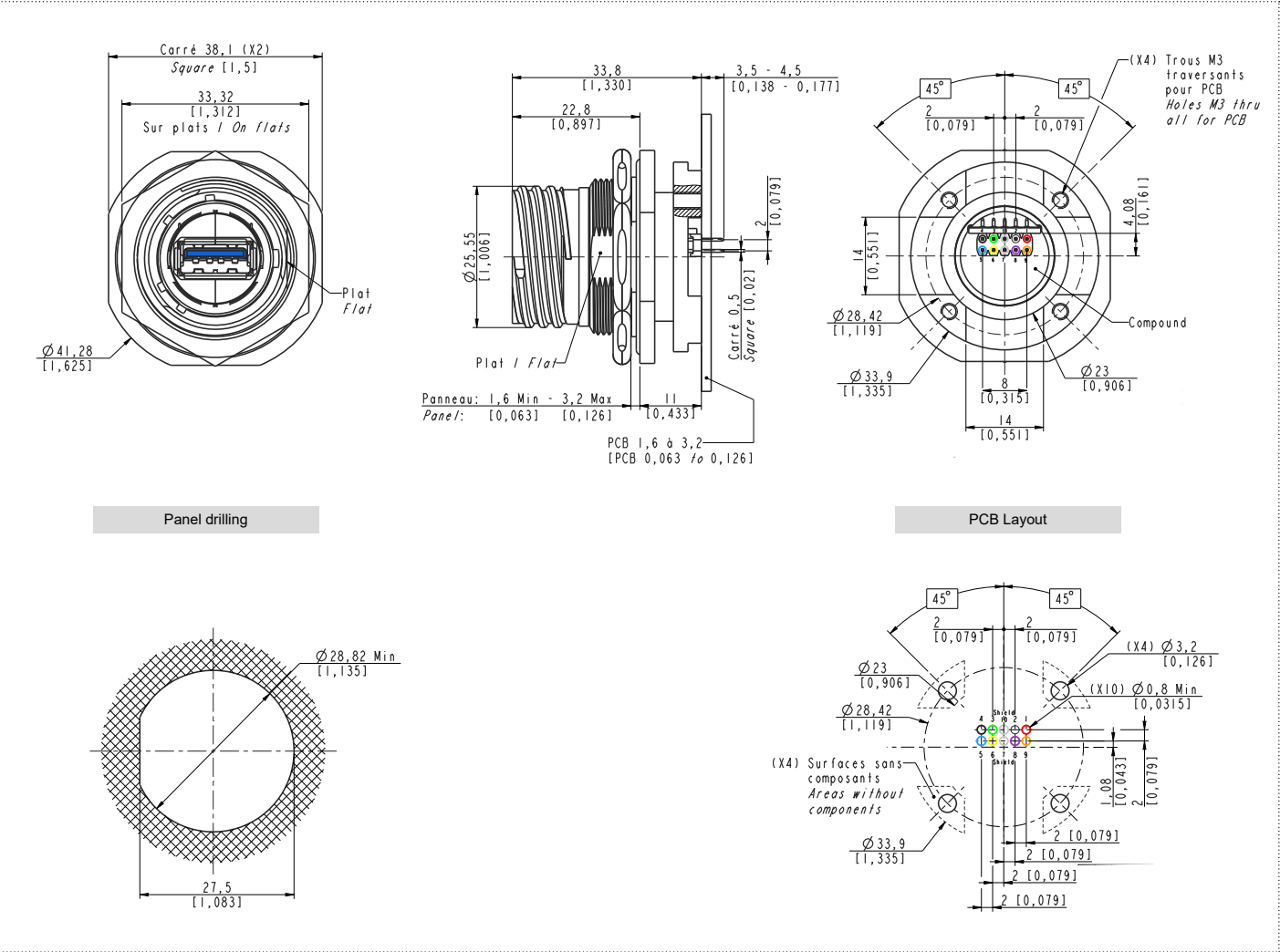
Part number for coding A	Part number for coding B	Plating
USB3FTV 2S A N F459	USB3FTV 2S B N F459	Nickel ✓
USB3FTV 2S A G F459	USB3FTV 2S B G F459	Olive drab cadmium
USB3FTV 2S A ZN F459	USB3FTV 2S B ZN F459	Black zinc nickel ✓

✓ : RoHS compliant

USB3FTV™ - STAND OFF RECEPTACLE

Overall dimension

Receptacle - Jam nut receptacle - Hexagonal nut mounting - Shell type 7 - PC Tails contacts



Part number for coding A	Part number for coding B	Plating
USB3FTV 7S A N F459	USB3FTV 7S B N F459	Nickel ✓
USB3FTV 7S A G F459	USB3FTV 7S B G F459	Olive drab cadmium
USB3FTV 7S A ZN F459	USB3FTV 7S B ZN F459	Black zinc nickel ✓

✓ : RoHS compliant

USB3FTV™ - REDUCED FLANGE RECEPTACLE

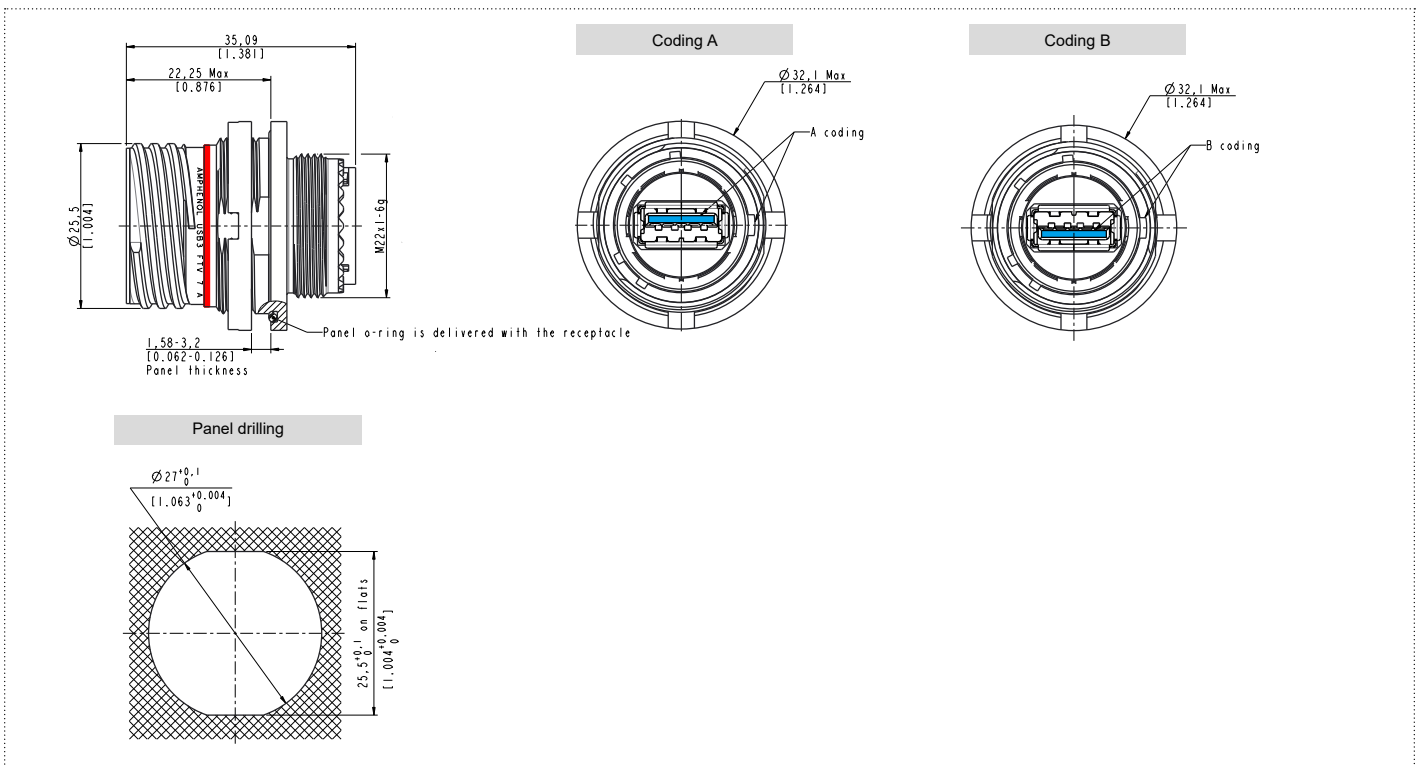


Description

This Reduced Flange USB3FTV™ is ideal for applications where small dimensions and lower weight are critical. The flange of this receptacle is reduced in order to gain more space on the panel enabling you to mount more receptacles in the same amount of space. Internal dimensions are also modified to save some space internally, giving you more space. The reduced flange deviation saves 41% footprint surface reduction and is 15% lighter than standard USB3FTV™ receptacle. Finally, you have two castle nut options, standard castle nut and safety castle nut that enable you to add a lock wire for anti-rotation of the nut.

Overall dimension

Receptacle - Reduced flange receptacle - Castle nut mounting - Shell type 7 - F312 or F311



Part number for coding A	Part number for coding B	Mounting nut option	Plating
USB3FTV 7 A N F312	USB3FTV 7 B N F312	Standard caste nut	Nickel ✓
USB3FTV 7 A G F312	USB3FTV 7 B G F312		Olive drab cadmium
USB3FTV 7 A ZN F312	USB3FTV 7 B ZN F312		Black zinc nickel ✓
USB3FTV 7 A N F311	USB3FTV 7 B N F311	Safety caste nut	Nickel ✓
USB3FTV 7 A G F311	USB3FTV 7 B G F311		Olive drab cadmium
USB3FTV 7 A ZN F311	USB3FTV 7 B ZN F311		Black zinc nickel ✓

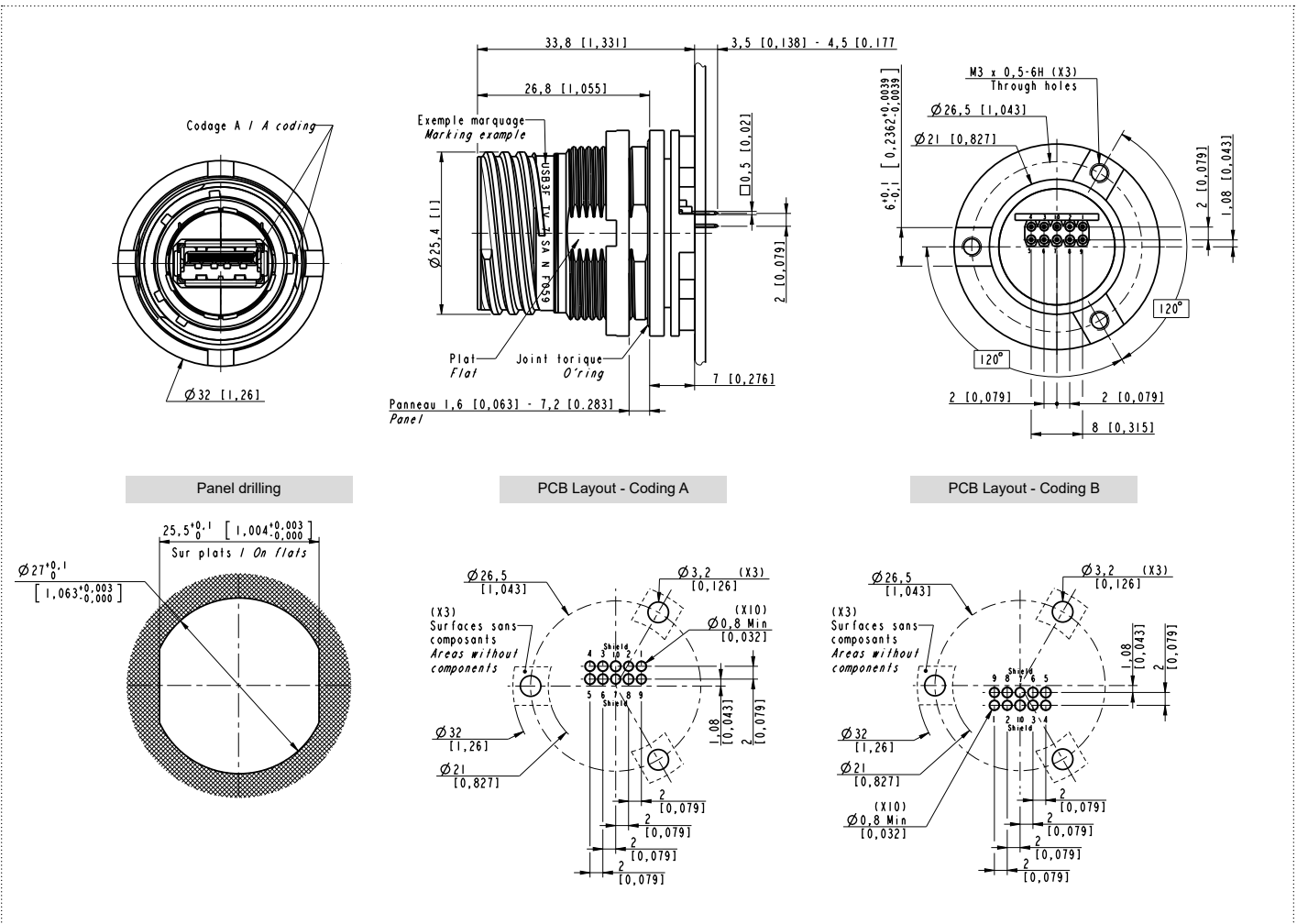
✓ : RoHS compliant

USB3FTV™ - REDUCED FLANGE RECEPTACLE



Overall dimension

Receptacle - Reduced flange receptacle - Castle nut mounting - Shell type 7 - F059 or F058



Part number for coding A	Part number for coding B	Mounting nut option	Plating
USB3FTV 7 SA N F059	USB3FTV 7 SB N F059	Standard caste nut	Nickel ✓
USB3FTV 7 SA G F059	USB3FTV 7 SB G F059		Olive drab cadmium
USB3FTV 7 SA ZN F059	USB3FTV 7 SB ZN F059		Black zinc nickel ✓
USB3FTV 7 SA N F058	USB3FTV 7 SB N F058	Safety caste nut	Nickel ✓
USB3FTV 7 SA G F058	USB3FTV 7 SB G F058		Olive drab cadmium
USB3FTV 7 SA ZN F058	USB3FTV 7 SB ZN F058		Black zinc nickel ✓

✓: RoHS compliant

USB3FTV™ - VG96949



Description

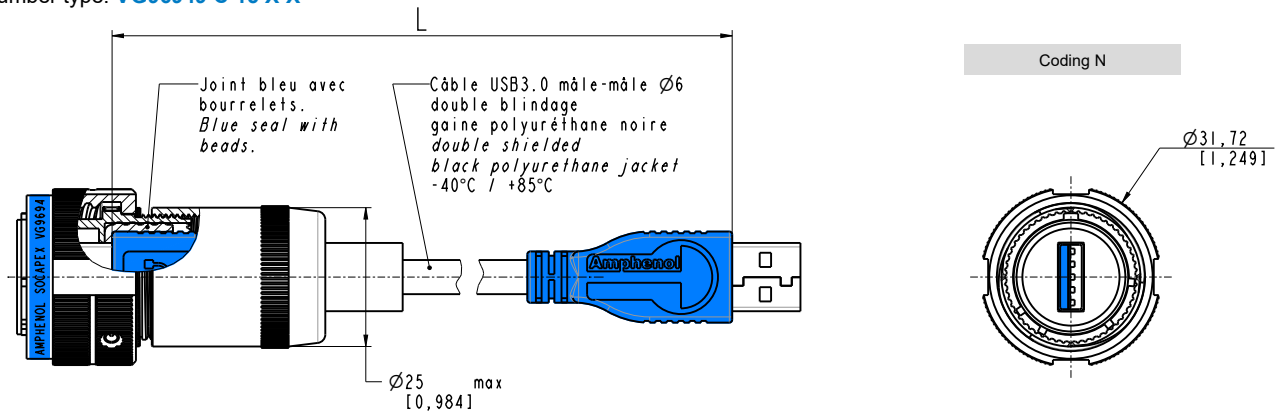
This version of our USB3FTV™ is qualified VG96949. According to this standard, receptacles are compounded, the panel nut of the jamnut receptacle version is according to VG95319 and the treatment is Tin Zinc RoHS.

How to order : Please refer to page 118

Overall dimension

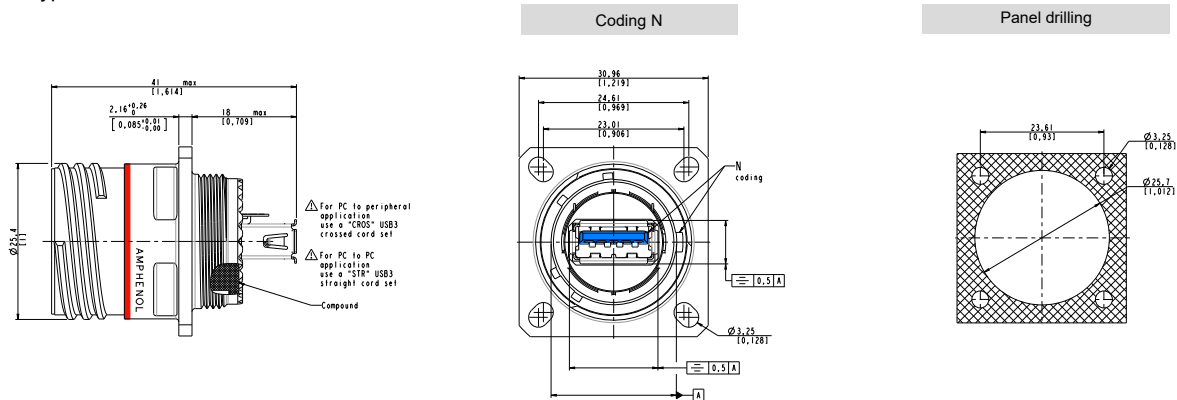
Plug - Shell type 6

Part number type: **VG96949 C 15 X X**



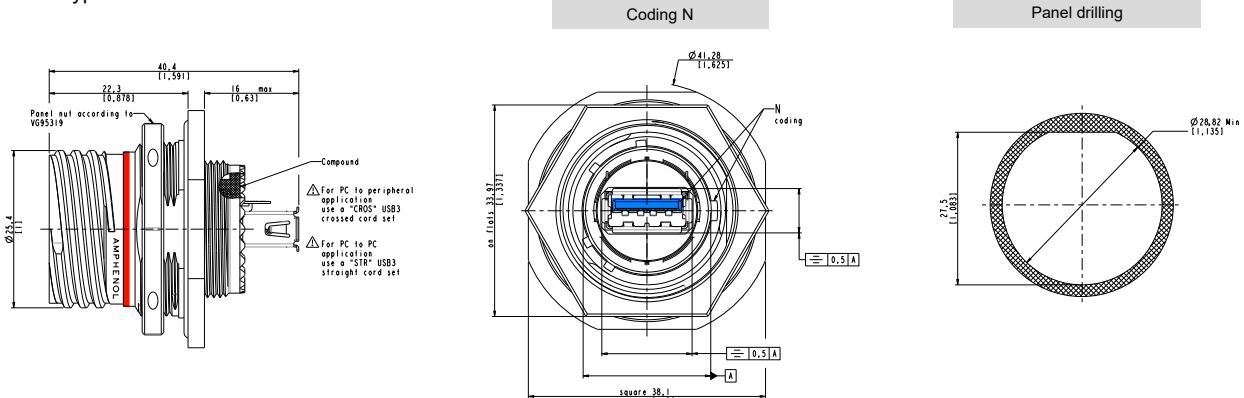
Receptacle - Square flange receptacle - 4 mounting holes - Shell type 2 - Compounded

Part number type: **VG96949 A 15 X X**



Receptacle - Jam nut receptacle - Hexagonal nut mounting - Shell type 7 - Compounded

Part number type: **VG96949 B 15 X X**



USB3 TYPE A - TYPE C - ADAPTER



Description

The USB3 Type A - Type C™ adapter is a complete ruggedized solution around USB3.2 Gen1 Type A and USB Type C. This solution allows you to integrate new equipment featuring a USB Type C port without disassembling an existing USB2 or USB3 Type A link. Two adaptation options are available to facilitate integration into your system: Type C host or Type C device (see description table). The USB3FTV™ receptacle dedicated to be mounted on your panel allows you to reinforce and protect your system against leakage, shock, vibration and much more. There are 2 mechanical coding possibilities (receptacle insert rotation) on the USB-A side and a fully reversible USB-C port on other side that can be integrated with our USB3CFTV™ plug.

Main features

MAIN CHARACTERISTICS

- Tri Start Thread coupling mechanism (MIL-DTL-38999 series III type) - Shell size 15
- 2 mechanical coding/polarization possibilities by the user (receptacle insert rotation)
- Sealed against fluids and dusts (IP68)
- Shock, vibration and traction resistant
- No cabling operation in field and no tools required
- Improved EMI protection

DATA TRANSMISSION

- USB specification 3.2 Gen1
- Data rate: up to 5Gb/s for high speed USB

ENVIRONMENTAL PROTECTION

- Sealing (when mated and unmated): IP68 (temporary immersion)
- Salt spray:
 - 48 h with nickel plating ✓
 - 500 h with olive drab cadmium
 - 1000 h with marine bronze shell ✓
 - 500 h with black zinc nickel ✓
- Fire retardant / Low smoke: UL94 V0 and EN45545
- Vibrations: 10 - 500 Hz, 10 g, 3 axes: no discontinuity > 1micro s
- Shocks: IK06 > weight of 250 g drop from 40 cm [15.75 in] onto connectors (mated pair)
- Humidity: 21 days, 43°C, 98% humidity
- Temperature range: - 40°C / +85°C

APPLICATIONS

- Battlefield communication systems
- C5ISR
- Data acquisition and transmission in harsh environment
- Navy
- Rail Mass Transit
- Industrial process control
- Robotics
- CNC machines
- Oil & Gas

✓ : RoHS compliant

Square flange



Jam nut



Reduced flange



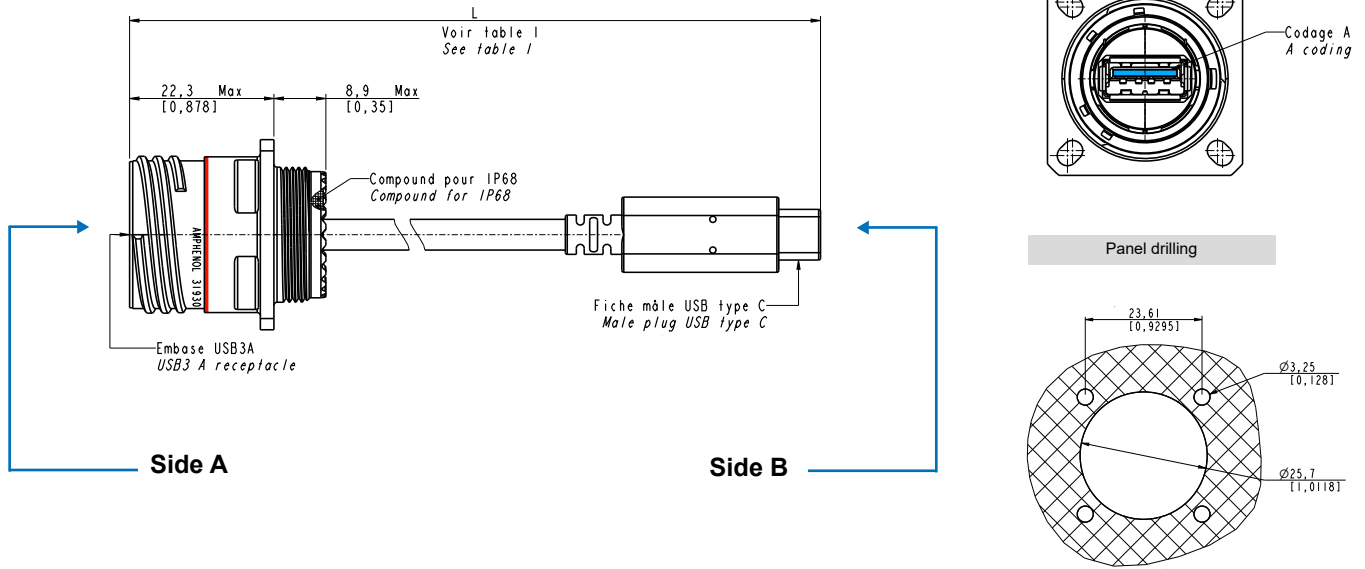
USB3 TYPE A - TYPE C - ADAPTER



Overall dimension

Square flange receptacle - Shell type 2 - 4 mounting holes

Part number type: **31930X-XXX**
32242X-XXX



SIDE A - HOST → SIDE B DEVICE IN SQUARE FLANGE RECEPTACLE

Designation

31930	Plating		-	Lenght	
	G	Olive drab cadmium		015	15 cm (5.91 inch)
	N	Nickel		030	30 cm (11.81 inch)
	ZN	Black zinc nickel		050	50 cm (19.68 inch)
	BZ	Marine bronze		100	1 m (39.37 inch)

SIDE B - HOST → SIDE A DEVICE IN SQUARE FLANGE RECEPTACLE

Designation

32242	Plating		-	Lenght	
	G	Olive drab cadmium		015	15 cm (5.91 inch)
	N	Nickel		030	30 cm (11.81 inch)
	ZN	Black zinc nickel		050	50 cm (19.68 inch)
	BZ	Marine bronze		100	1 m (39.37 inch)

Important note:

- For other codings, please consult us.

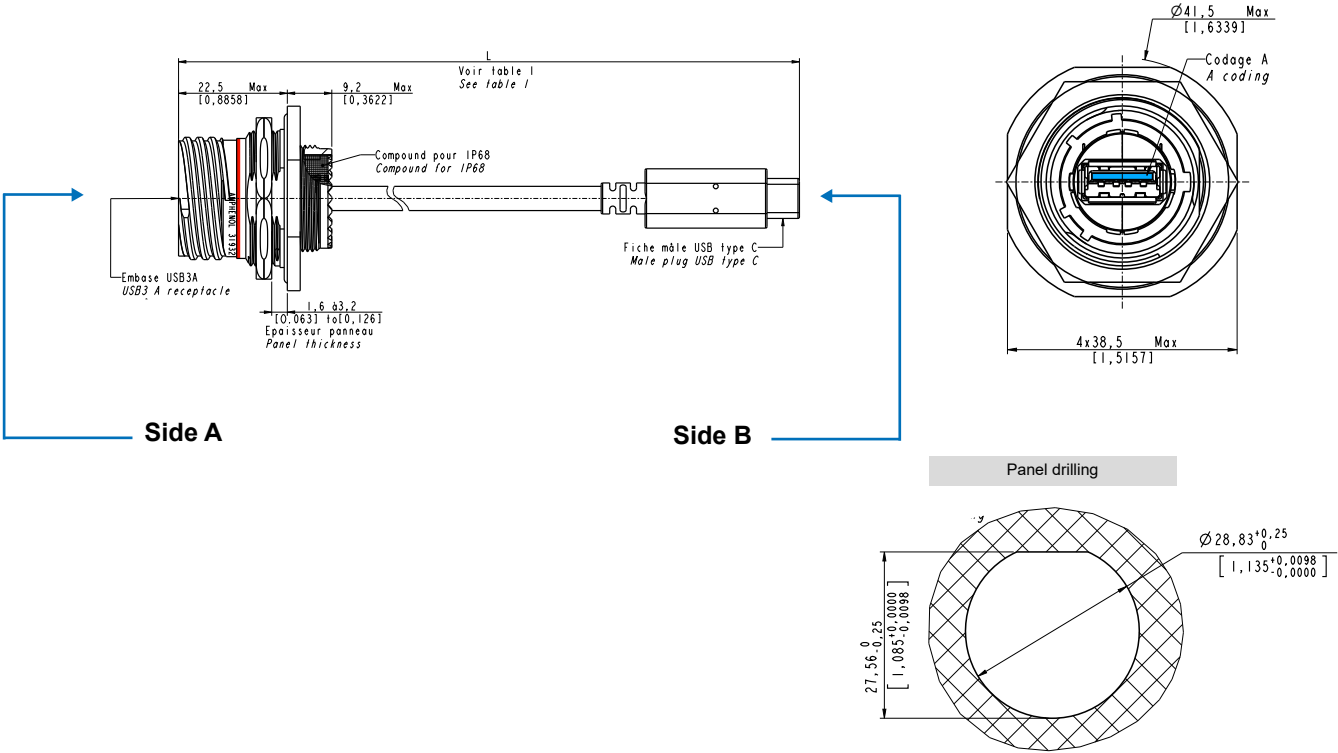
USB3 TYPE A - TYPE C - ADAPTER



Overall dimension

Jam nut receptacle - Shell type 7 - Hexagonal nut mounting

Part number type: 31932X-XXX
32241X-XXX



SIDE A - HOST ➔ SIDE B DEVICE IN JAM NUT RECEPTACLE

Designation				
Plating			Lenght	
31932	G	Olive drab cadmium	015	15 cm (5.91 inch)
	N	Nickel	030	30 cm (11.81 inch)
	ZN	Black zinc nickel	050	50 cm (19.68 inch)
	BZ	Marine bronze	100	1 m (39.37 inch)

SIDE B - HOST ➔ SIDE A DEVICE IN JAM NUT RECEPTACLE

Designation				
Plating			Lenght	
32241	G	Olive drab cadmium	015	15 cm (5.91 inch)
	N	Nickel	030	30 cm (11.81 inch)
	ZN	Black zinc nickel	050	50 cm (19.68 inch)
	BZ	Marine bronze	100	1 m (39.37 inch)

Important note:
- For other codings, please consult us.

USB3 TYPE A - TYPE C - ADAPTER

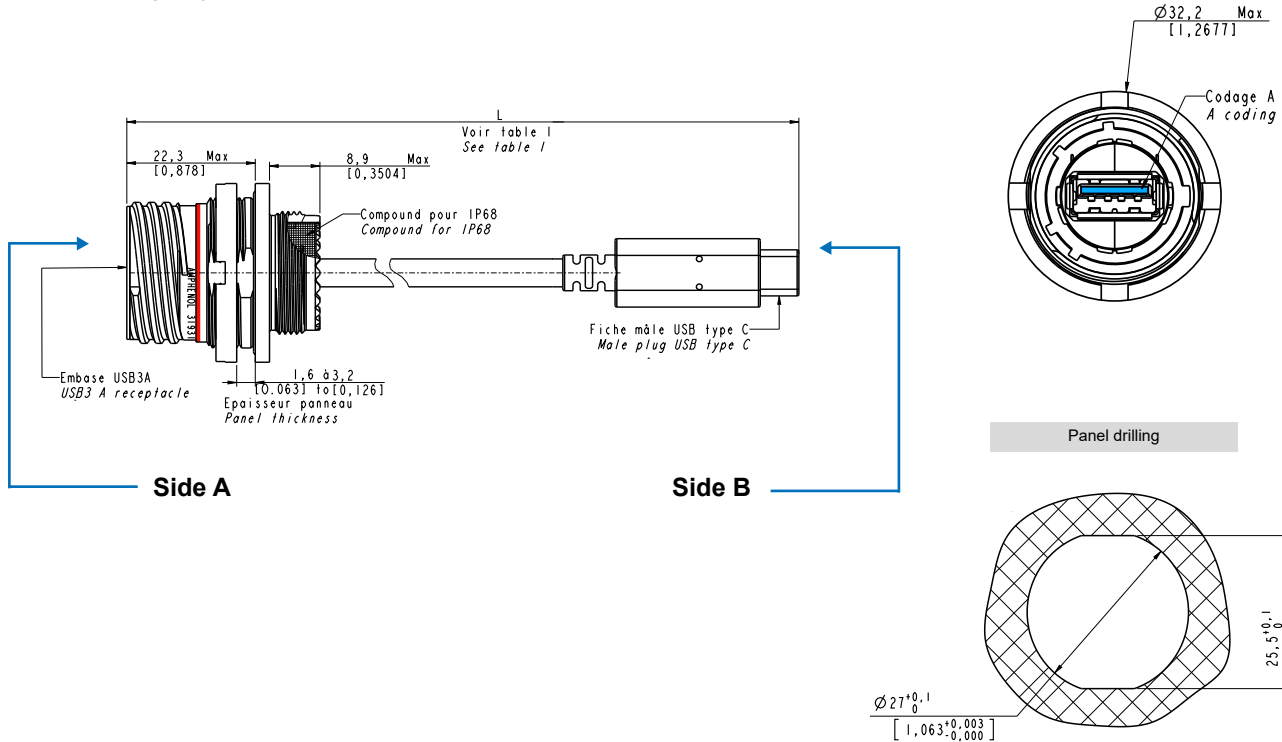


Overall dimension

Reduced flange receptacle - Jam nut shell type 7 - Castle nut mounting

Part number type: **31931X-XXX**

32240X-XXX



SIDE A - HOST → SIDE B DEVICE IN REDUCED FLANGE RECEPTACLE

Designation

31931	Plating		-	Lenght	
	G	Olive drab cadmium		015	15 cm (5.91 inch)
	N	Nickel		030	30 cm (11.81 inch)
	ZN	Black zinc nickel		050	50 cm (19.68 inch)
	BZ	Marine bronze		100	1 m (39.37 inch)

SIDE B - HOST → SIDE A DEVICE IN REDUCED FLANGE RECEPTACLE

Designation

32240	Plating		-	Lenght	
	G	Olive drab cadmium		015	15 cm (5.91 inch)
	N	Nickel		030	30 cm (11.81 inch)
	ZN	Black zinc nickel		050	50 cm (19.68 inch)
	BZ	Marine bronze		100	1 m (39.37 inch)

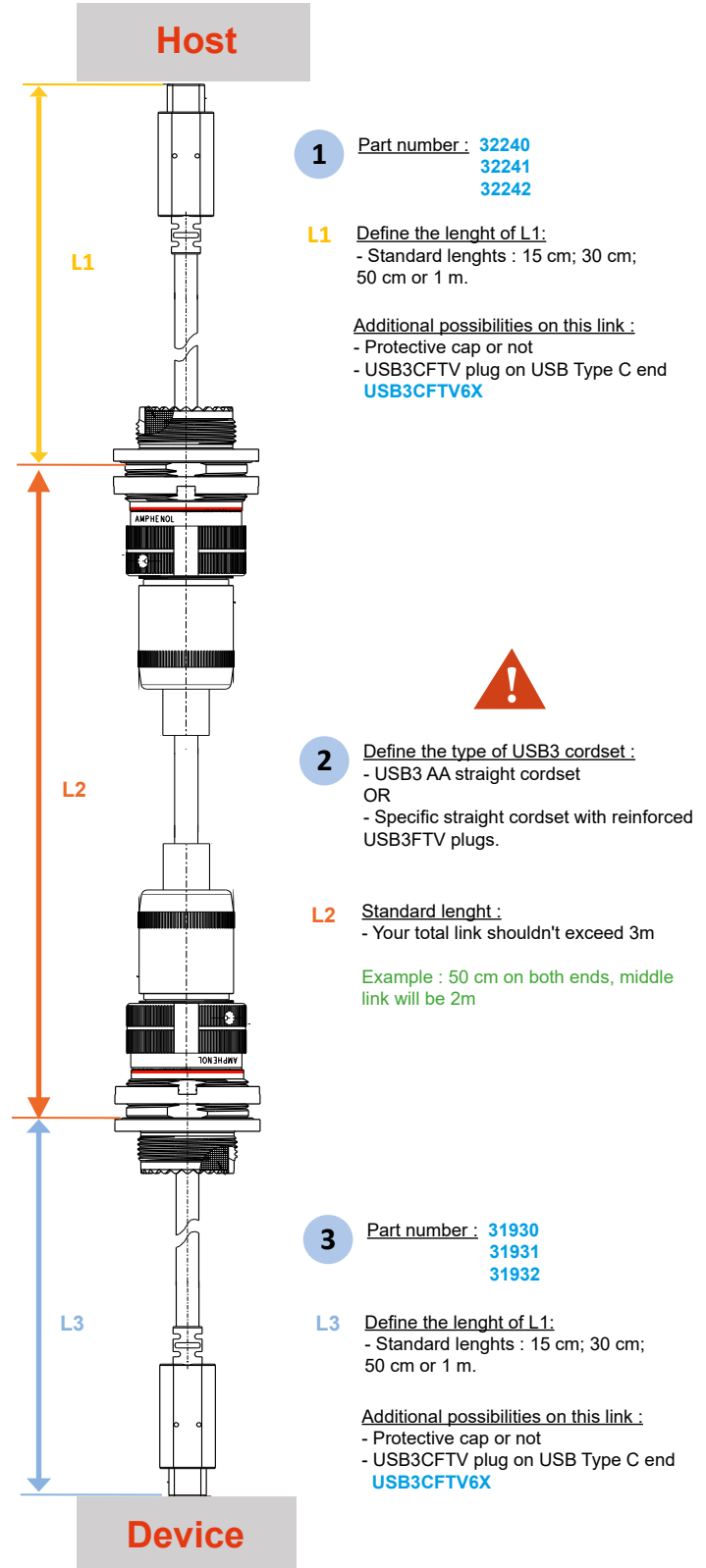
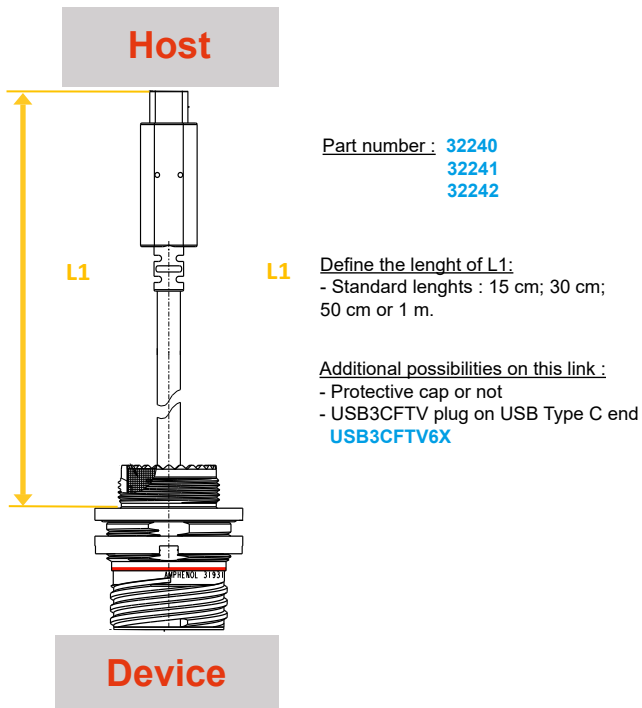
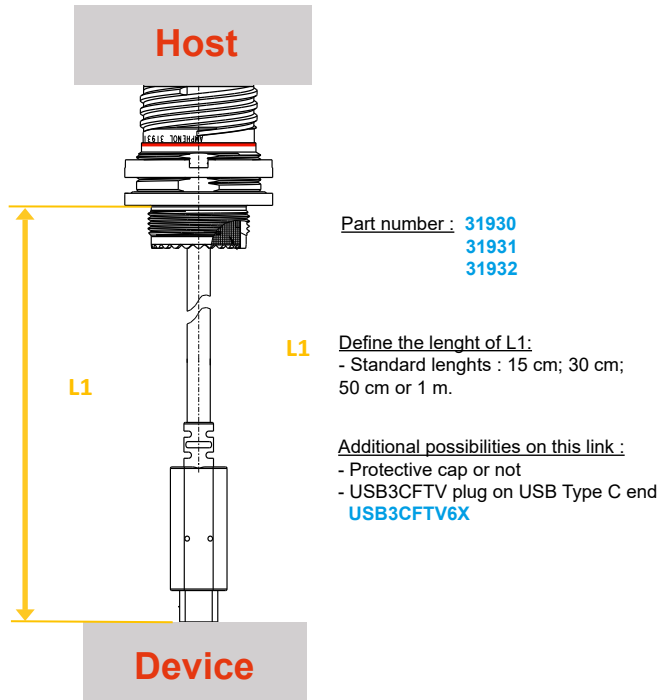
Important note:

- For other codings, please consult us.

USB3 TYPE A - TYPE C - ADAPTER

USB3 Adapter selection guide

Define your own solution by selecting options in the scheme below





μCom-USB3.2 & TVμCom-USB3.2

Description

These specific adaptations of μCom and TVμCom are optimized for USB3.2 Gen1 and intended for connection and disconnection in harsh environment military and aerospace applications.

Main Features

Data Transmission:

- **USB specification 3.2 Gen1.**
- **Data rate up to 5Gb/s for high speed USB**
- **Hot plugging:** enables connection and disconnection while the system is running.
- **4 pairs totally insulated throughout the connector:** minimum cross-talk between pairs.
- **Patented special interfacial shapes:** minimum perturbation at the interface of each pair.

μCom:

- 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 ✓



✓ : RoHS compliant

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 ✓
 - 500 h with Tin-zinc plating ✓
 - 1000 h with Marine Bronze shell ✓
 - 500 h with Passivated Stainless steel shell ✓
- 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



✓ : RoHS compliant

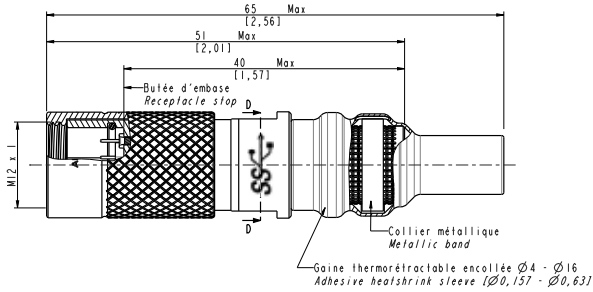
How to order : Please refer to page 119 & 120

μCom-USB3.2

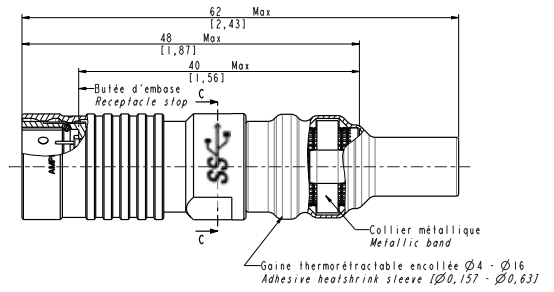


Overall dimension

Plug with banding platform

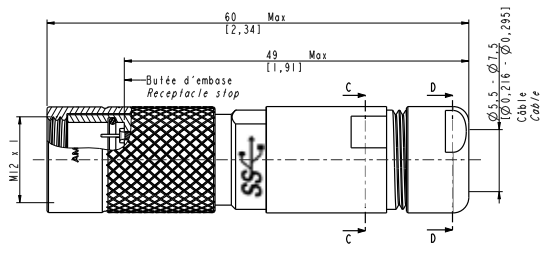
Part number type: **UCOM-USB3 PT X X B**


Thread version

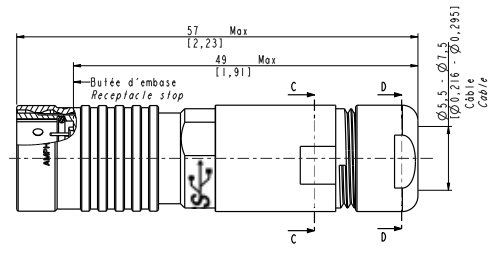
Part number type: **UCOM-USB3 PP X X B**


Push-pull version

Plug with cable gland backshell

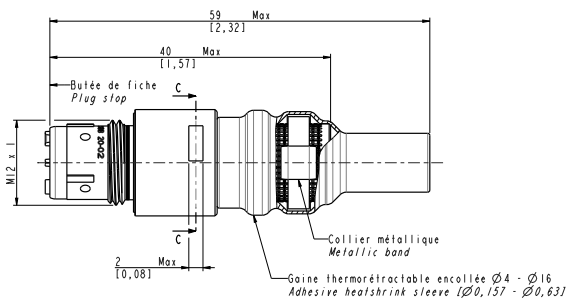
Part number type: **UCOM-USB3 PT X X GA**


Thread version

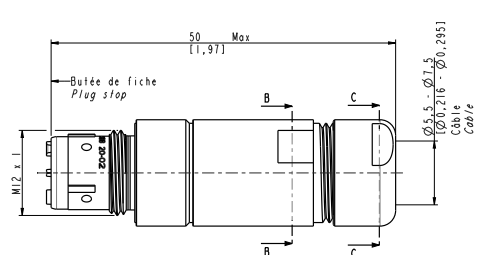
Part number type: **UCOM-USB3 PP X X GA**


Push-pull version

In-line receptacle

Part number type: **UCOM-USB3 L X X B**


Banding platform

Part number type: **UCOM-USB3 L X X GA**


Cable gland backshell

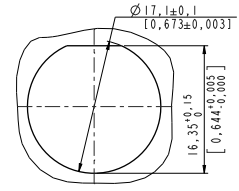
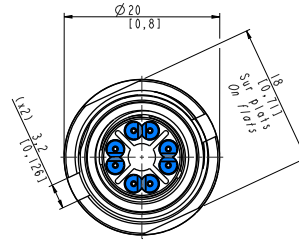
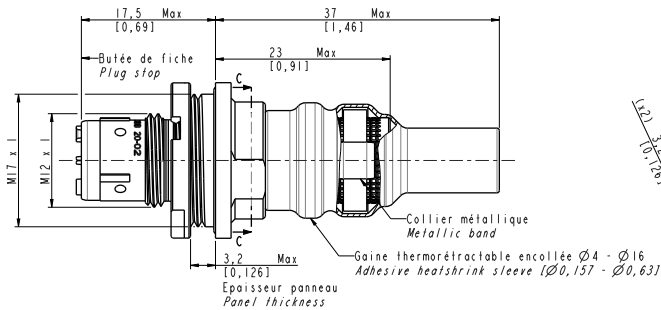
μCom-USB3.2

Overall dimension



Panel mount receptacle with banding platform

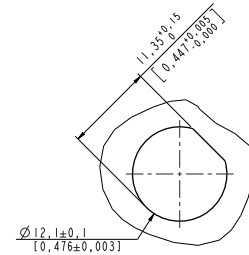
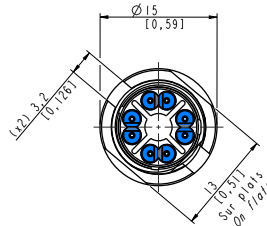
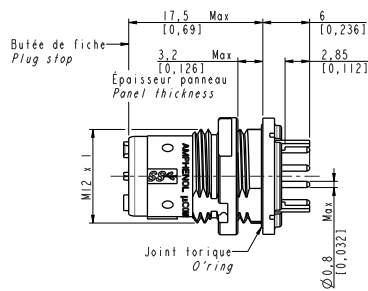
Part number type: **UCOM-USB3 R X X**



Panel drilling

PCB receptacle for printed circuit board

Part number type: **UCOM-USB3 RP X**



Panel drilling

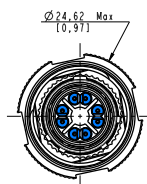
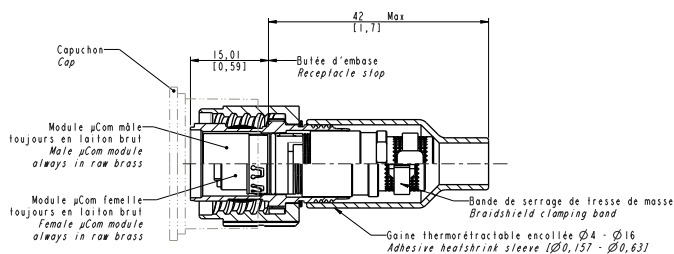
TVμCom-USB3.2



Overall dimension

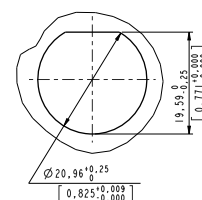
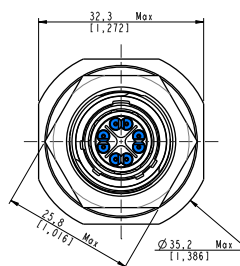
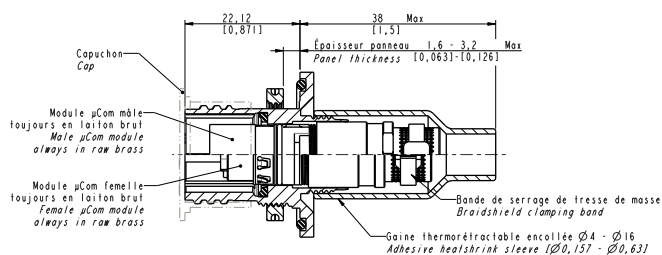
Plug with banding platform

Part number type: **TV06 UCOM-USB3 X X -11 X X**



Jam nut receptacle with banding platform

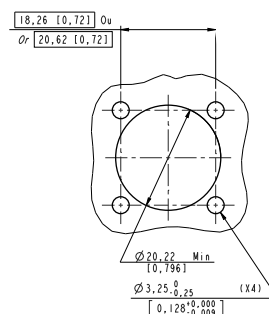
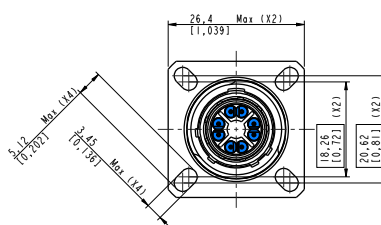
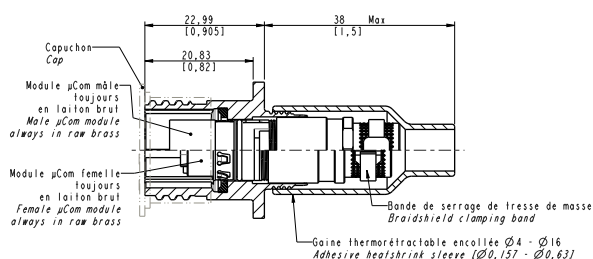
Part number type: **TV07 UCOM-USB3 X X -11 X X**



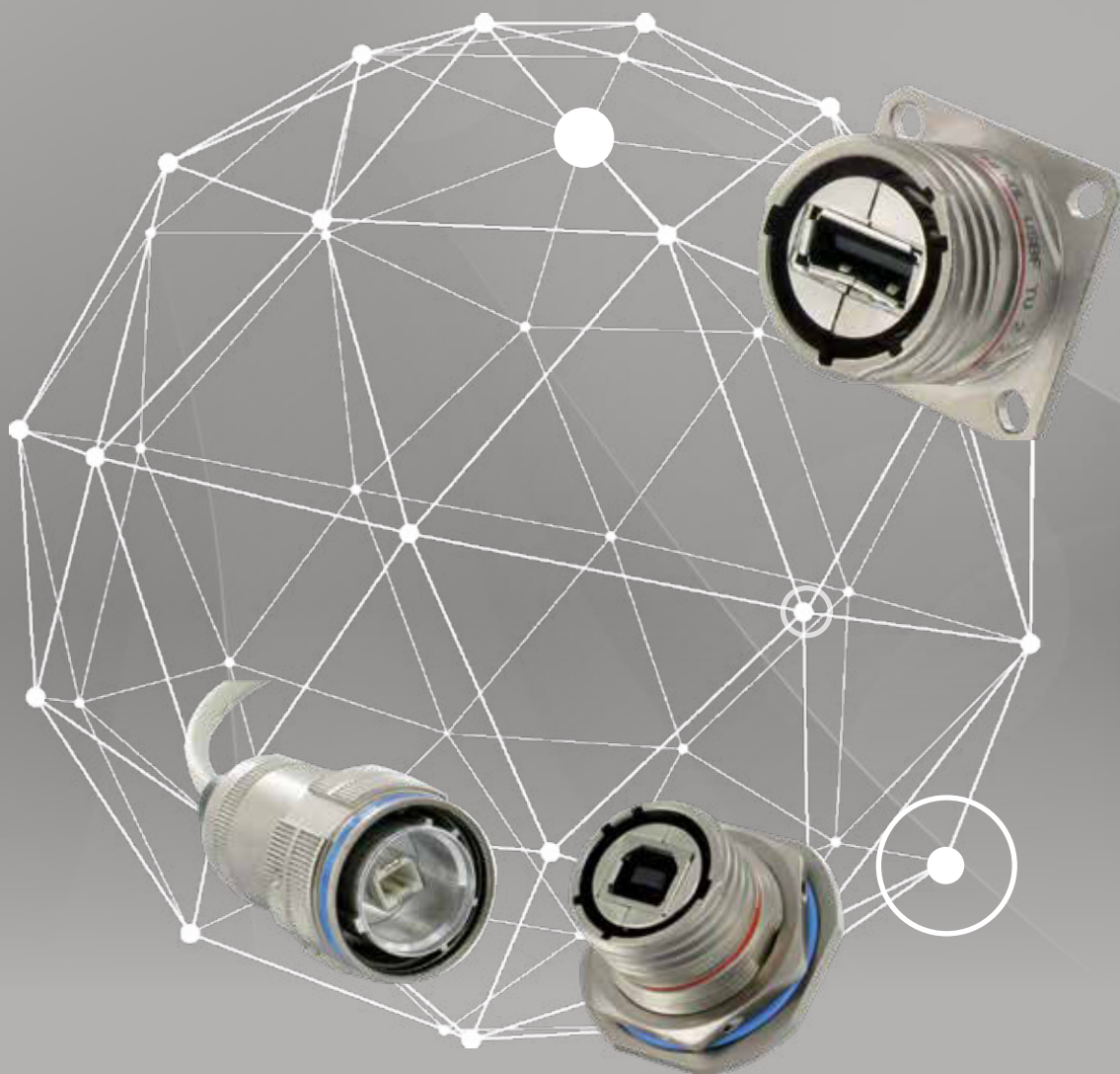
Panel drilling

Square flange receptacle with banding platform

Part number type: **TVP00 UCOM-USB3 X X -11 X X**



Panel drilling



USB2.0



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USB3.2

USB2.0

Cables and
cordsetsAdapters and
access pointsRugged
electronics

Accessories

Assembly
instructions

How to order

USBFTV™



Description

USBFTV™ is a complete ruggedized solution around USB2.0 Type-A standard using a Tri Start Thread coupling mechanism (MIL-DTL-38999 series III type) to connect the plug and receptacle.

This solution allows you to insert a standard USB 2.0 cordset into a metallic plug which will protect it from shocks, dust and fluids. The assembly of this ruggedized plug doesn't require any tools and is easily assembled on the field. Perfectly adapted to the USB2.0 standard, you have two coding possibilities to facilitate coupling when you have several receptacles on a panel.

The corresponding USBFTV™ receptacle dedicated to be mounted on your panel enables you to reinforce and protect your system against leakage, shocks, vibrations and much more. This receptacle part is delivered with a defined coding when ordered but can be conveniently changed with our dedicated USBF ODE tool.

Main features

MAIN CHARACTERISTICS

- Tri Start Thread coupling mechanism (MIL-DTL-38999 series III type) with anti-decoupling device - Shell size 15
- Sealed against fluids and dusts (IP68)
- Shock, vibration and traction resistant
- No cabling operation in field and no tools required
- Improved EMI protection
- 2 mechanical coding / polarization possibilities by the user (receptacle insert rotation)
- USBFTV™ plug retention in the receptacle: 100 N in the axis
- Mating cycles: 500 minimum

DATA TRANSMISSION

- USB-A
- USB specification 2.0
- Data rate: up to 480 Mbps for high speed USB

ENVIRONMENTAL PROTECTION

- Sealing (when mated): IP68 (temporary immersion)
- Salt spray:
 - 48 h with nickel plating ✓
 - 500 h black zinc nickel ✓
 - 500 h with olive drab cadmium
 - 500 h with Tin-zinc plating ✓
 - 1000 h with marine bronze shell ✓
- Fire retardant / low smoke: UL94 V0 and EN45545
- Vibrations: 10 - 500 Hz, 10 g, 3 axes: no discontinuity > 1micro s
- Shocks: IK06: weight of 250 g drop from 40 cm [15.75 in] onto connectors (mated pair)
- Temperature range: - 40°C / +85°C

APPLICATIONS

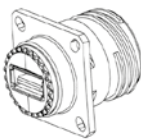
- Battlefield communication systems
- C5ISR
- Data acquisition and transmission in harsh environment
- Navy
- Rail Mass Transit
- Industrial process control
- Robotics
- CNC machines
- Oil & Gas

✓ : RoHS compliant

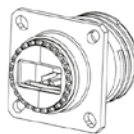
How to order : Please refer to page 121

Back terminations

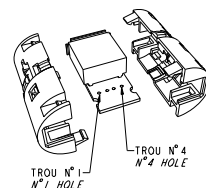
Type 1:
female USB-A



Type 2:
solder 4 Tinned holes to solder your cable



View of the PCB of the Type 2 version with
4 tinned holes for solder termination



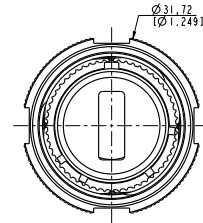
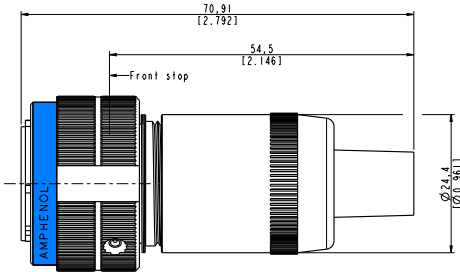
USBFTV™

Overall dimension

Plug - Shell type 6

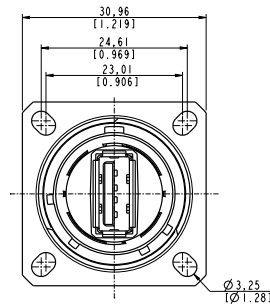
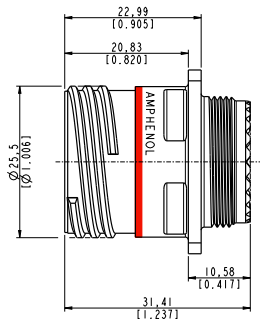


Part number type: **USBFTV 6 X**

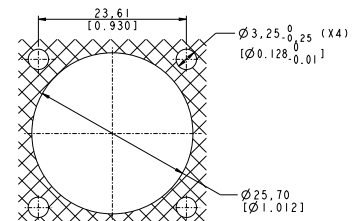


Receptacle - Square flange receptacle - 4 mounting holes - Shell type 2 - Back termination type 1

Part number type: **USBFTV 2 1 X**

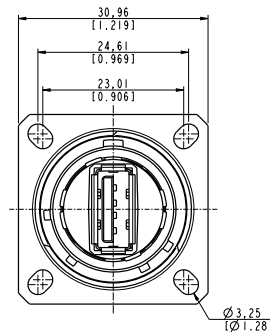
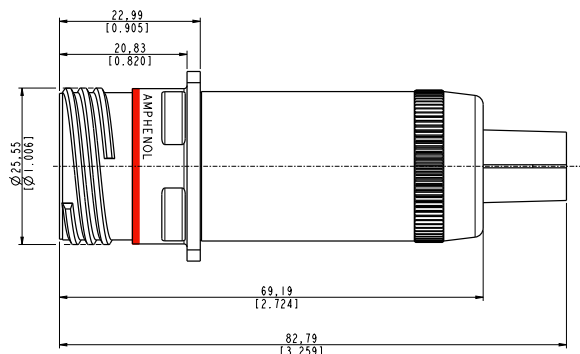


Panel Drilling

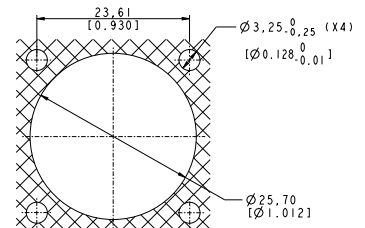


Receptacle - Square flange receptacle - 4 mounting holes - Shell type 2 - Back termination type 1 - Metal backshell

Part number type: **USBFTV 2 PE 1 X**



Panel Drilling

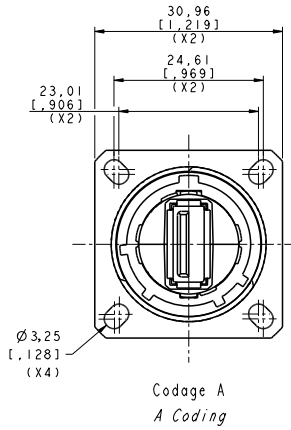
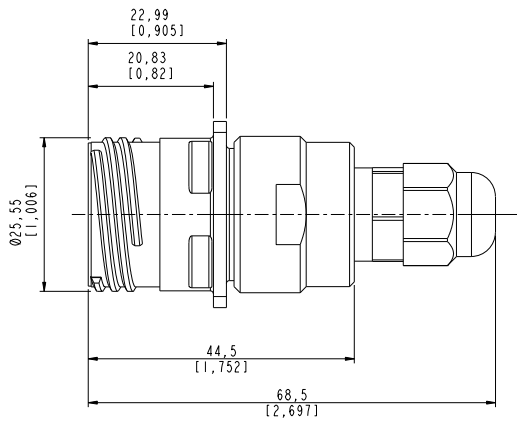


USBFTV™

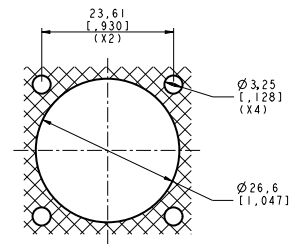
Overall dimension

Receptacle - Square flange receptacle - 4 mounting holes - Shell type 2 - Back termination type 2 - Metal backshell

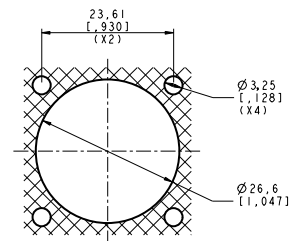
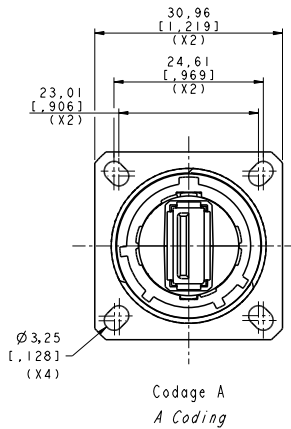
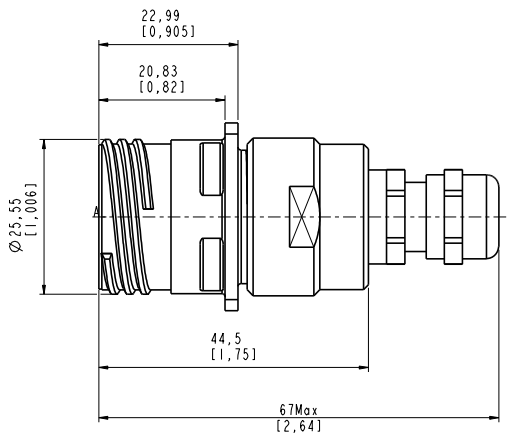
Part number type: **USBFTV 2 PE 2 X**



Panel Drilling



Part number type: **USBFTV 2 PEM 2 X**

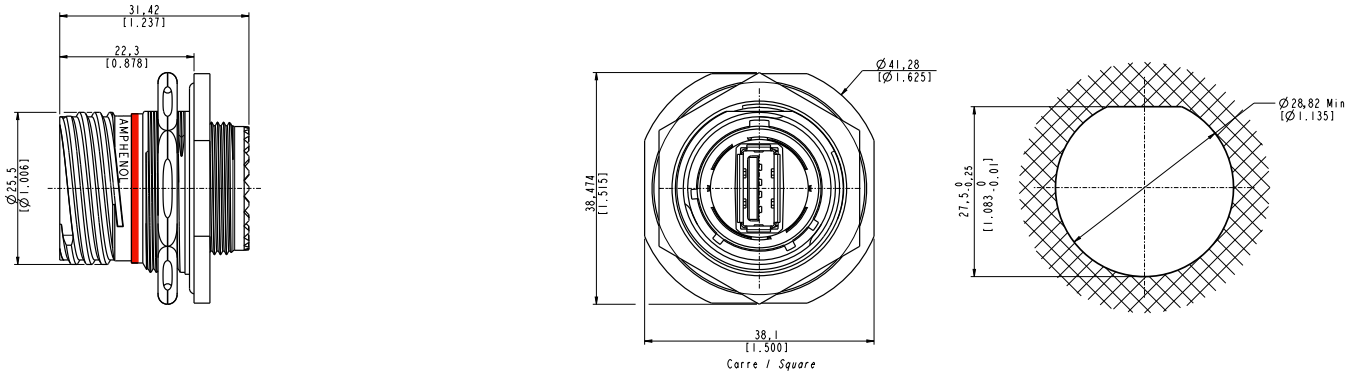


USBFTV™

Overall dimension

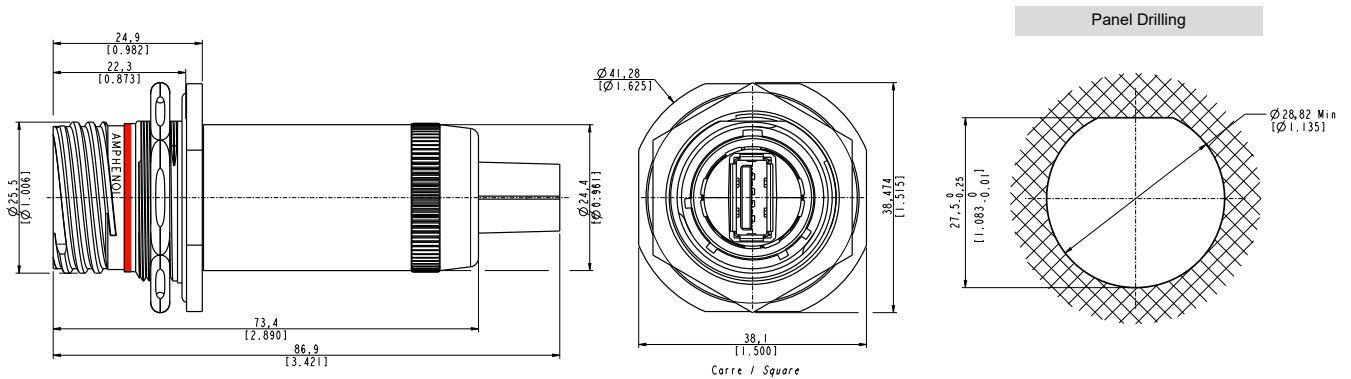
Receptacle - Jam nut receptacle - Hexagonal nut mounting - Shell type 7 - Back termination type 1

Part number type: **USBFTV 7 1 X**



Receptacle - Jam nut receptacle - Hexagonal nut mounting - Shell type 7 - Back termination type 1 - Metal backshell

Part number type: **USBFTV 7 PE 1 X**



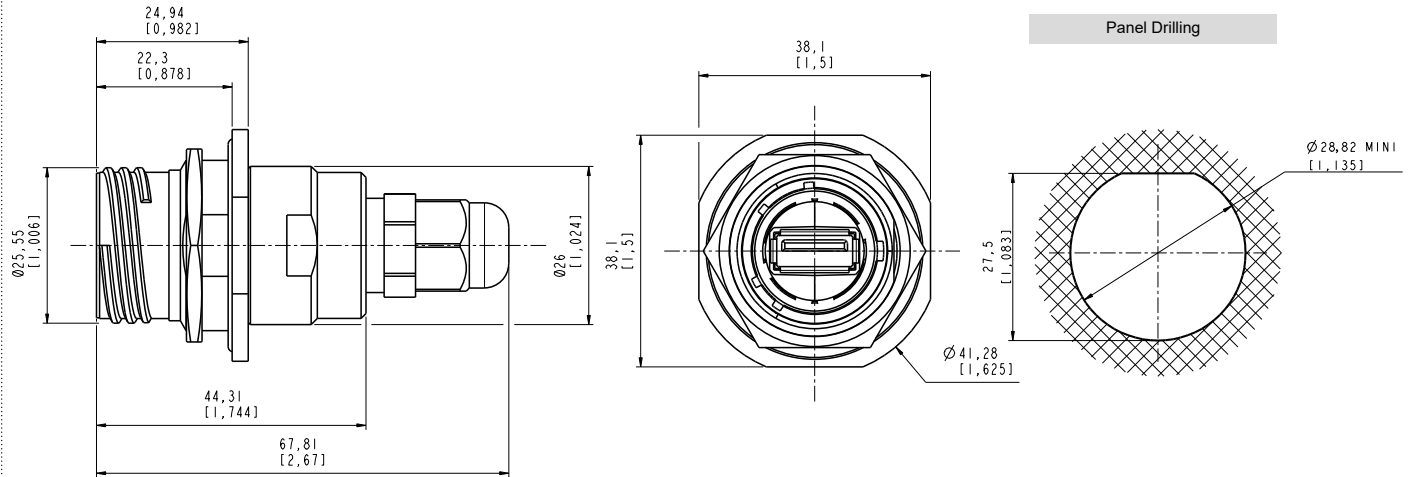
USBFTV™



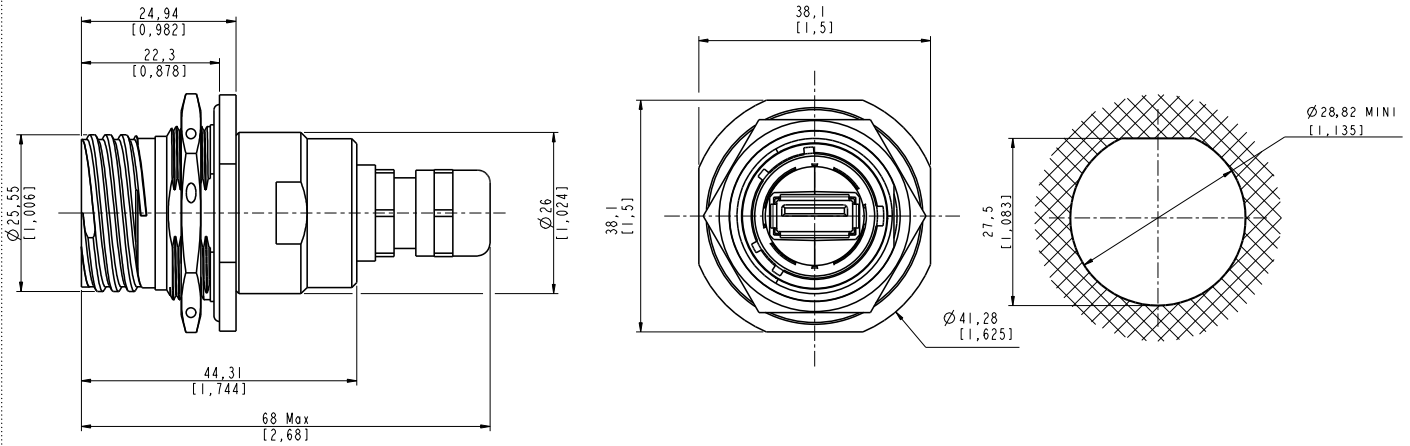
Overall dimension

Receptacle - Jam nut receptacle - Hexagonal nut mounting - Shell type 7 - Back termination type 2 - Metal backshell

Part number type: **USBFTV 7 PE 2 X**



Part number type: **USBFTV 7 PEM 2 X**



USBFTV™ - TRANSVERSALLY SEALED AND HERMETIC RECEPTACLE

Description



The transversally sealed receptacle is in all aspect equivalent to the standard and in addition, is improved with compound at the rear of the receptacle. This will prevent the sealing of the receptacle when unmated with his plug or protective cap.

The hermetic solution, as the transversally sealed one, is compounded at the rear of the receptacle. Helium leakage is less than 1.10-6 cm³ per second [0.1 micron cubit ft per hour] at one bar [15 psi] pressure differential. The test is performed on all hermetic receptacles.

Main features

MAIN CHARACTERISTICS

- Tri Start Thread coupling mechanism (MIL-DTL-38999 series III type) with anti-decoupling device - Shell size 15
- 2 mechanical coding/polarization possibilities by the user (receptacle insert rotation)
- Sealed against fluids and dusts (IP68)
- Shock, vibration and traction resistant
- No cabling operation in field and no tools required
- Improved EMI protection
- USBFTV™ plug retention in the receptacle: 100 N in the axis
- Mating cycles: 500 minimum

DATA TRANSMISSION

- USB-A
- USB specification 2.0
- Data rate: up to 480 Mb/s for high speed USB

ENVIRONMENTAL PROTECTION

- Sealing (when mated): IP68 (temporary immersion)
- Salt spray:
 - 48 h with nickel plating ✓
 - 500 h with olive drab cadmium
 - 500 h with black zinc nickel ✓
 - 500 h with Tin-zinc plating ✓
 - 1000 h with marine bronze shell ✓
- Fire retardant / Low smoke: UL94 V0 and EN45545
- Vibrations: 10 - 500 Hz, 10 g, 3 axes: no discontinuity > 1micro s
- Shocks: IK06 > weight of 250 g drop from 40 cm [15.75 in] onto connectors (mated pair)
- Temperature range: - 40°C / +85°C

APPLICATIONS

- Battlefield communication systems
- C5ISR
- Data acquisition and transmission in harsh environment
- Navy
- Rail Mass Transit
- Industrial process control
- Robotics
- CNC machines
- Oil & Gas

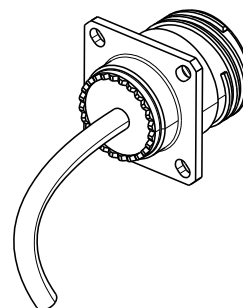
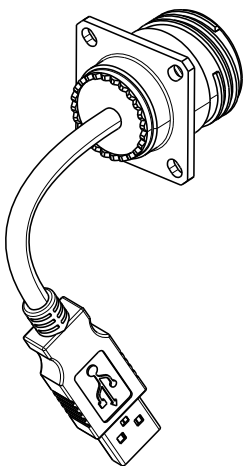
✓: RoHS compliant

How to order : Please refer to page 122

Back terminations

USB cable end type A

USB cable end type «OPEN»



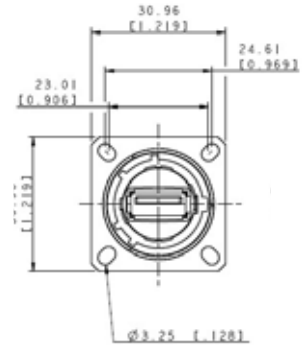
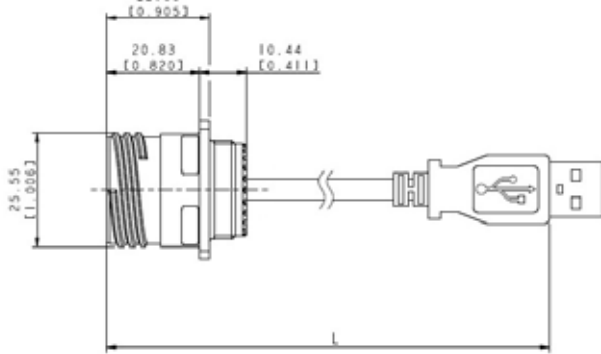
USBFTV™ - TRANSVERSALLY SEALED AND HERMETIC RECEPTACLE

Overall dimension

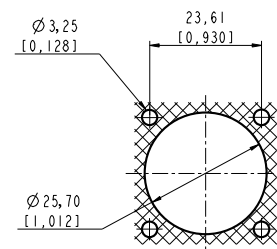
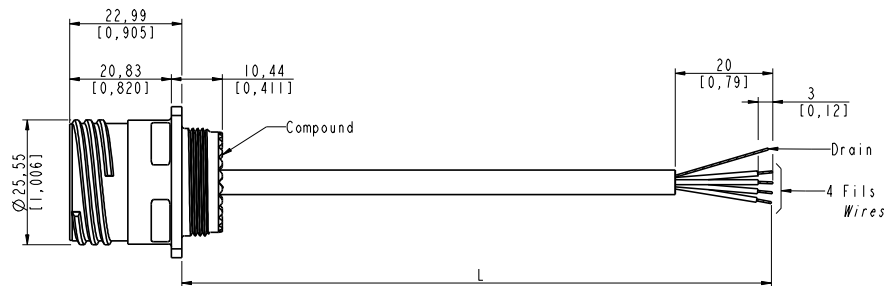


Receptacle - Square flange receptacle - 4 mounting holes - Shell type 2 - USB-A or Open cordset

Part number type: **USBFTV 2 SA 2 X XX A**



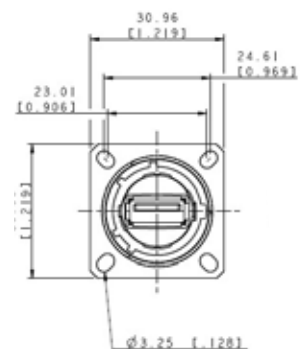
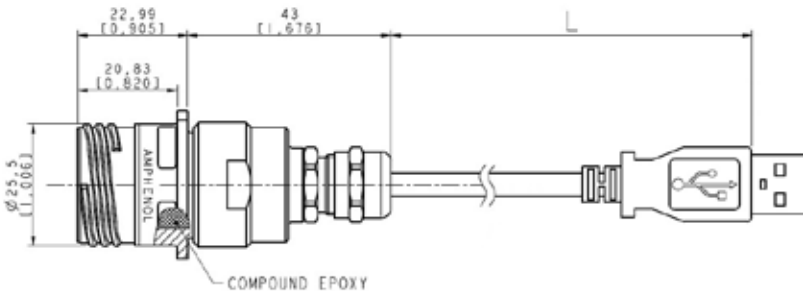
Part number type: **USBFTV 2 SA 2 X XX OPEN**



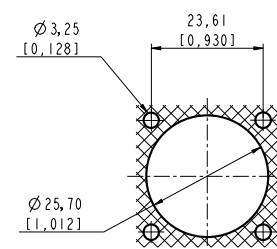
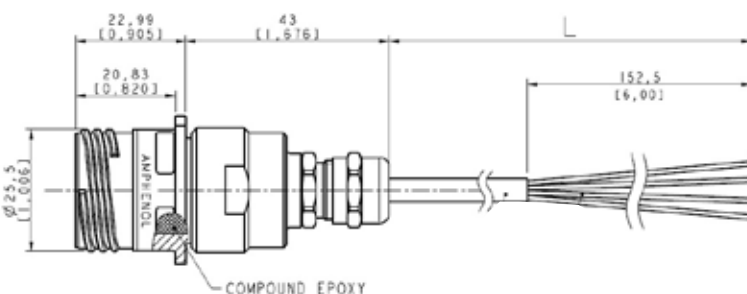
Panel Drilling

Receptacle - Square flange receptacle - 4 mounting holes - Shell type 2 - USB-A or Open cordset

Part number type: **USBFTV 2 PE SA 2 X XX A**
USBFTV 2 PEM SA 2 X XX A



Part number type: **USBFTV 2 PE SA 2 X XX OPEN**
USBFTV 2 PEM SA 2 X XX OPEN



Panel Drilling

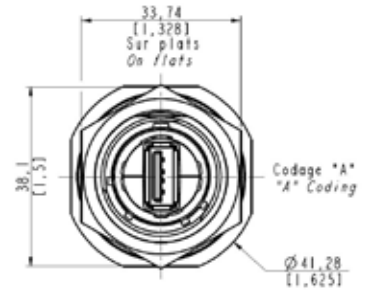
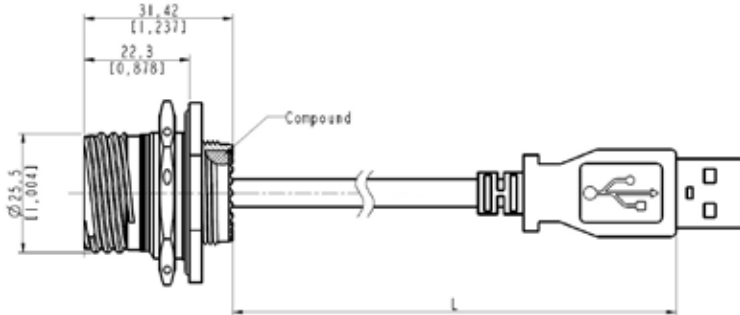
USBFTV™ - TRANSVERSALLY SEALED AND HERMETIC RECEPTACLE

Overall dimension

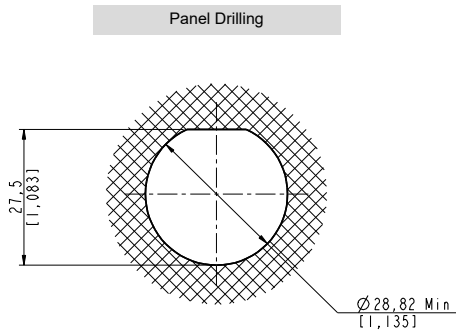
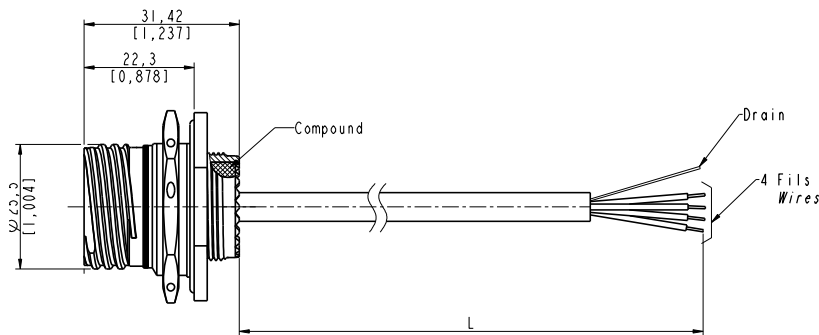


Receptacle - Jam nut receptacle - Hexagonal nut mounting - Shell type 7 - USB-A or Open cordset

Part number type: **USBFTV 7 SA 2 X XX A**

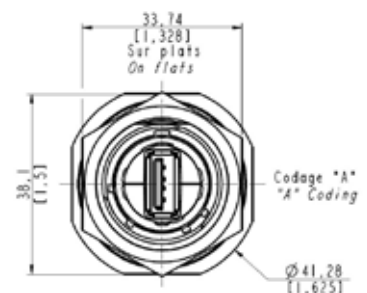
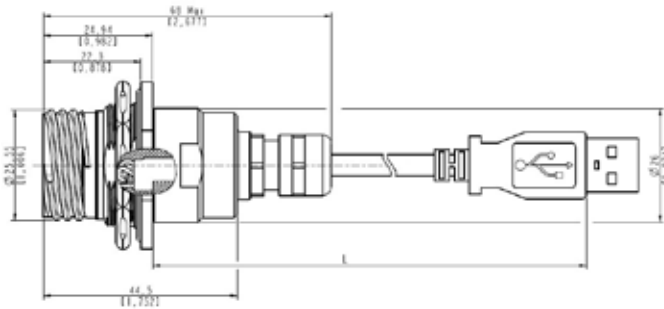


Part number type: **USBFTV 7 SA 2 X XX OPEN**

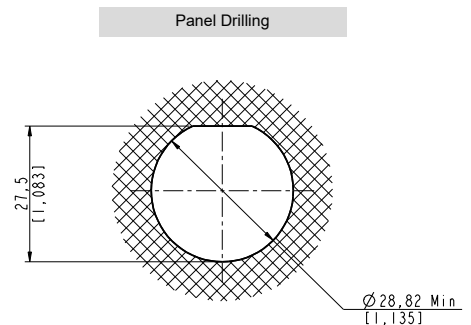
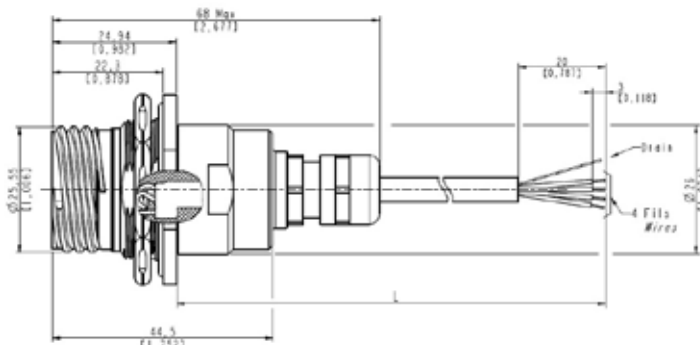


Receptacle - Jam nut receptacle - Hexagonal nut mounting - Shell type 7 - USB-A or Open cordset

Part number type: **USBFTV 7 PE SA 2 X XX A**
USBFTV 7 PEM SA 2 X XX A



Part number type: **USBFTV 7 PE SA 2 X XX OPEN**
USBFTV 7 PEM SA 2 X XX OPEN



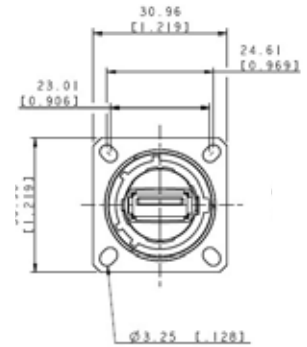
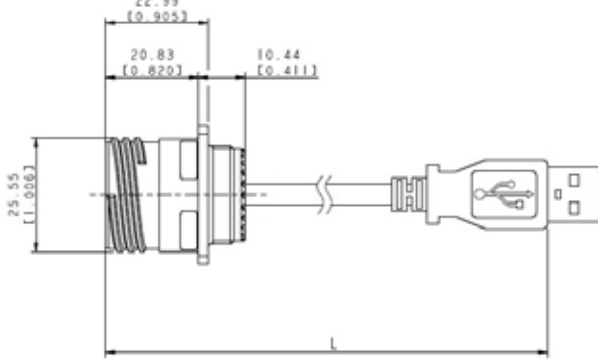
USBFTV™ - TRANSVERSALLY SEALED AND HERMETIC RECEPTACLE

Overall dimension

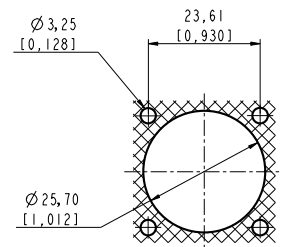
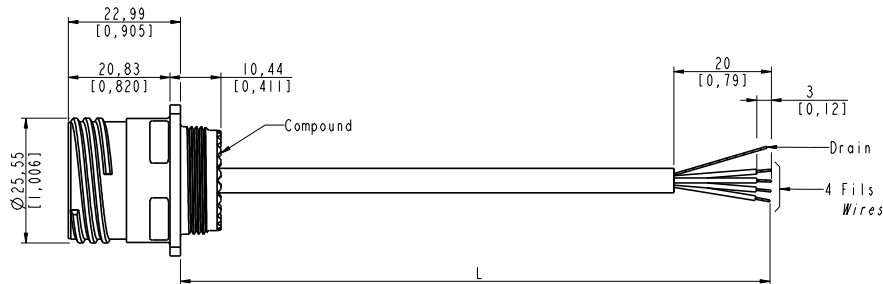


Receptacle - Square flange receptacle - 4 mounting holes - Shell type 2- USB-A or Open cordset

Part number type: **USBFTV 2 HA 2 X XX A**



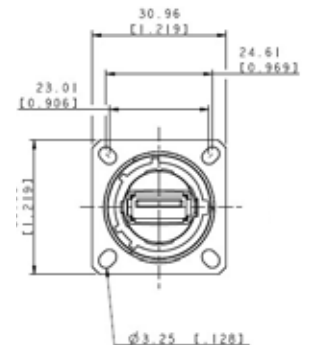
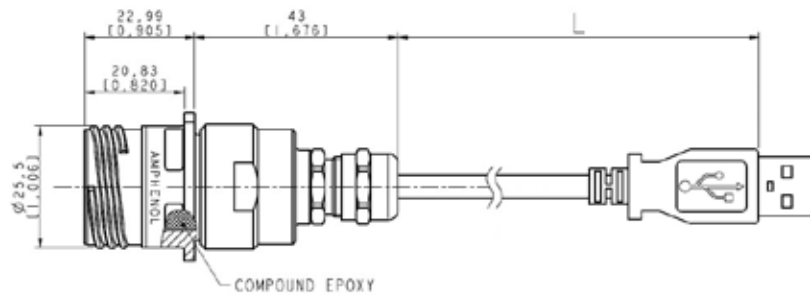
Part number type: **USBFTV 2 HA 2 X XX OPEN**



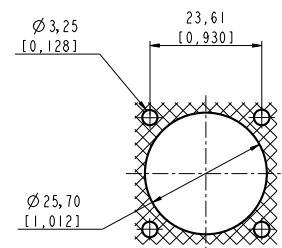
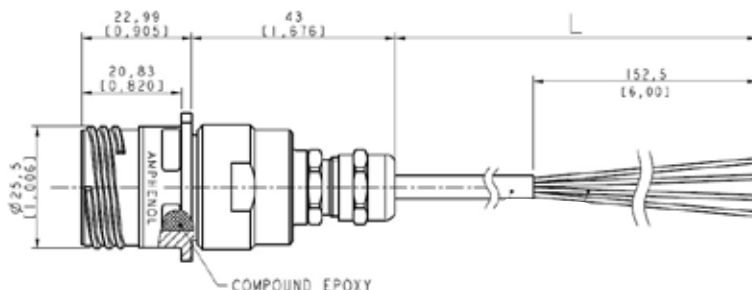
Panel Drilling

Receptacle - Square flange receptacle - 4 mounting holes - Shell type 2 - Metal backshell - USB-A or Open cordset

Part number type: **USBFTV 2 PE HA 2 X XX A**
USBFTV 2 PEM HA 2 X XX A



Part number type: **USBFTV 2 PE HA 2 X XX OPEN**
USBFTV 2 PEM HA 2 X XX OPEN



Panel Drilling

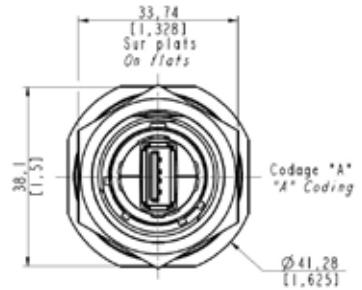
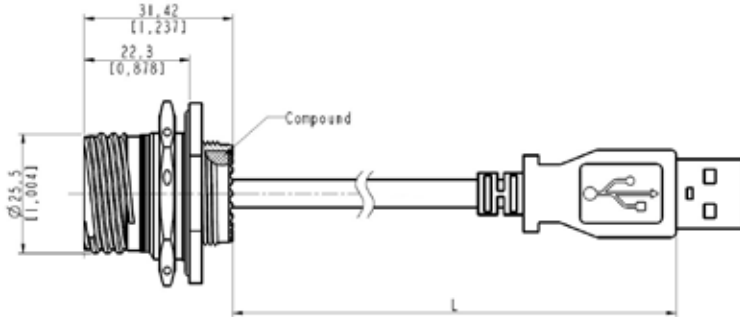
USBFTV™ - TRANSVERSALLY SEALED AND HERMETIC RECEPTACLE

Overall dimension

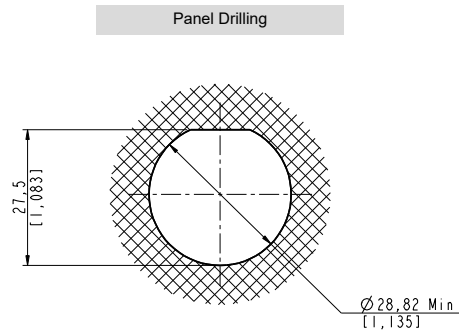
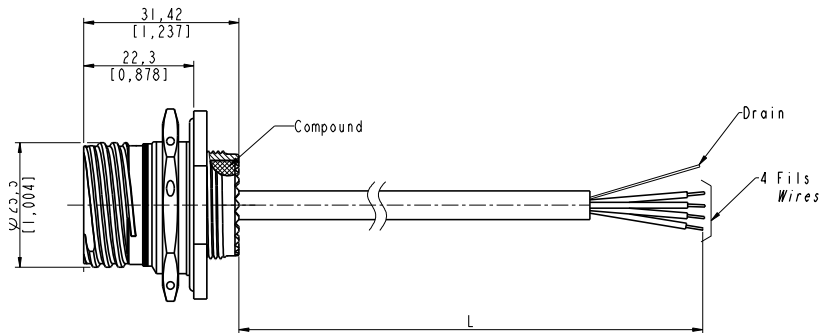


Receptacle - Jam nut receptacle - Hexagonal nut mounting - Shell type 7 - USB-A or Open cordset

Part number type: **USBFTV 7 HA 2 X XX A**

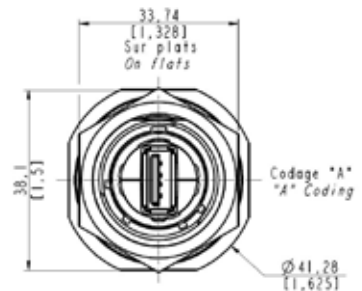
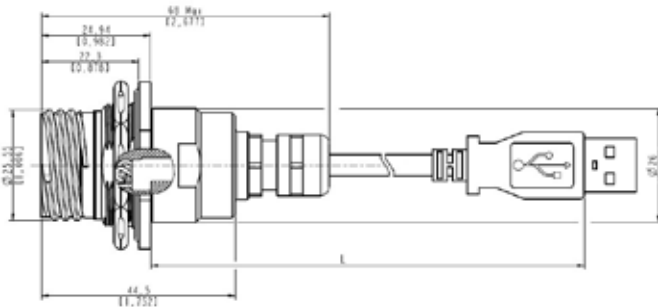


Part number type: **USBFTV 7 HA 2 X XX OPEN**

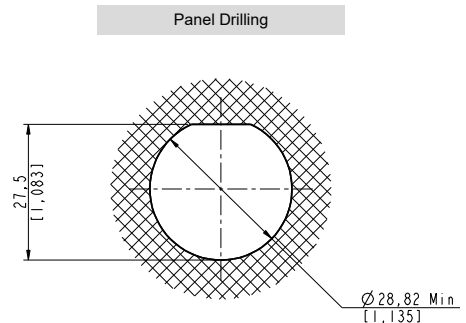
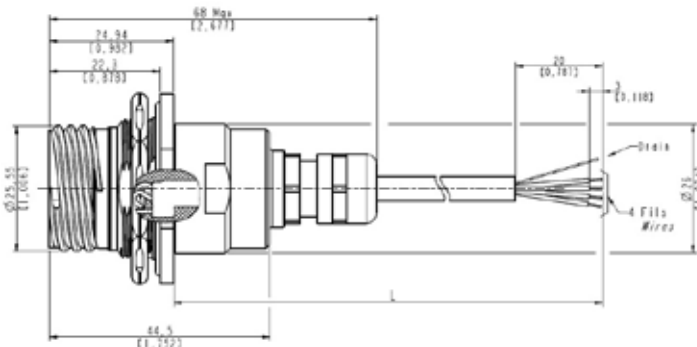


Receptacle - Jam nut receptacle - Hexagonal nut mounting - Shell type 7 - Metal backshell - USB-A or Open cordset

Part number type: **USBFTV 7 PE HA 2 X XX A**
USBFTV 7 PEM HA 2 X XX A



Part number type: **USBFTV 7 PE HA 2 X XX OPEN**
USBFTV 7 PEM HA 2 X XX OPEN



USBFTV™ - STAND OFF RECEPTACLE

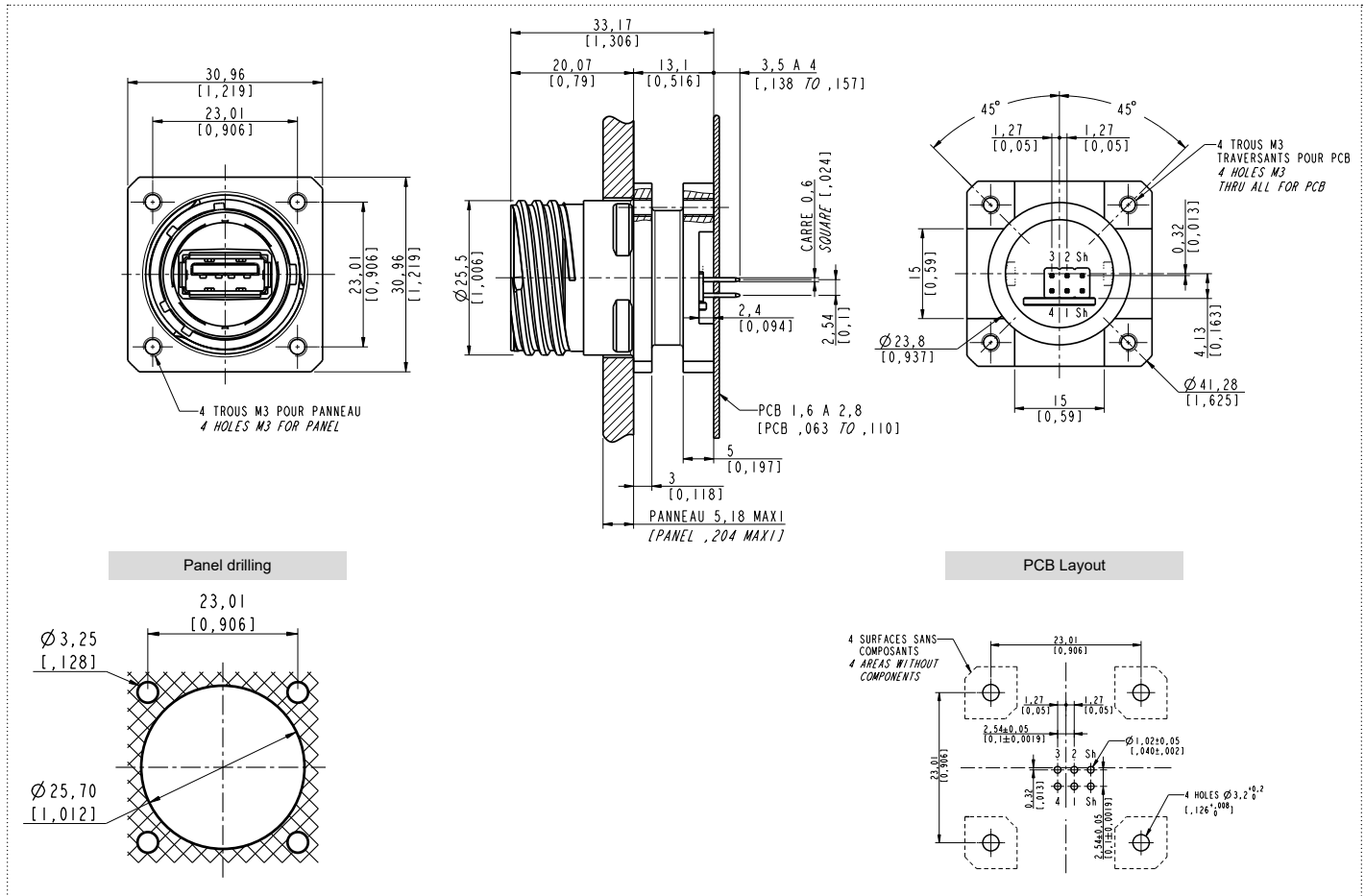


Description

This enhanced design allows you to mount the connector shell directly on your PC board. Soldering your contacts directly on the board will help to save you a lot of space inside of your system. As this double-flange of this connector is directly fixed on the board, mechanical stresses are absorbed by the shell and not the contacts. In addition to this benefit, the sealing is improved by the compounded receptacle.

Overall dimension

Receptacle - Square flange receptacle - 4 mounting holes - Shell type 2 - PC Tails contacts



Part number for coding A

USBFTV 2S A 5 N F459

USBFTV 2S A 5 G F459

USBFTV 2S A 5 ZN F459

Part number for coding B

USBFTV 2S B 5 N F459

USBFTV 2S B 5 G F459

USBFTV 2S B 5 ZN F459

Plating

Nickel ✓

Olive drab cadmium

Black zinc nickel ✓

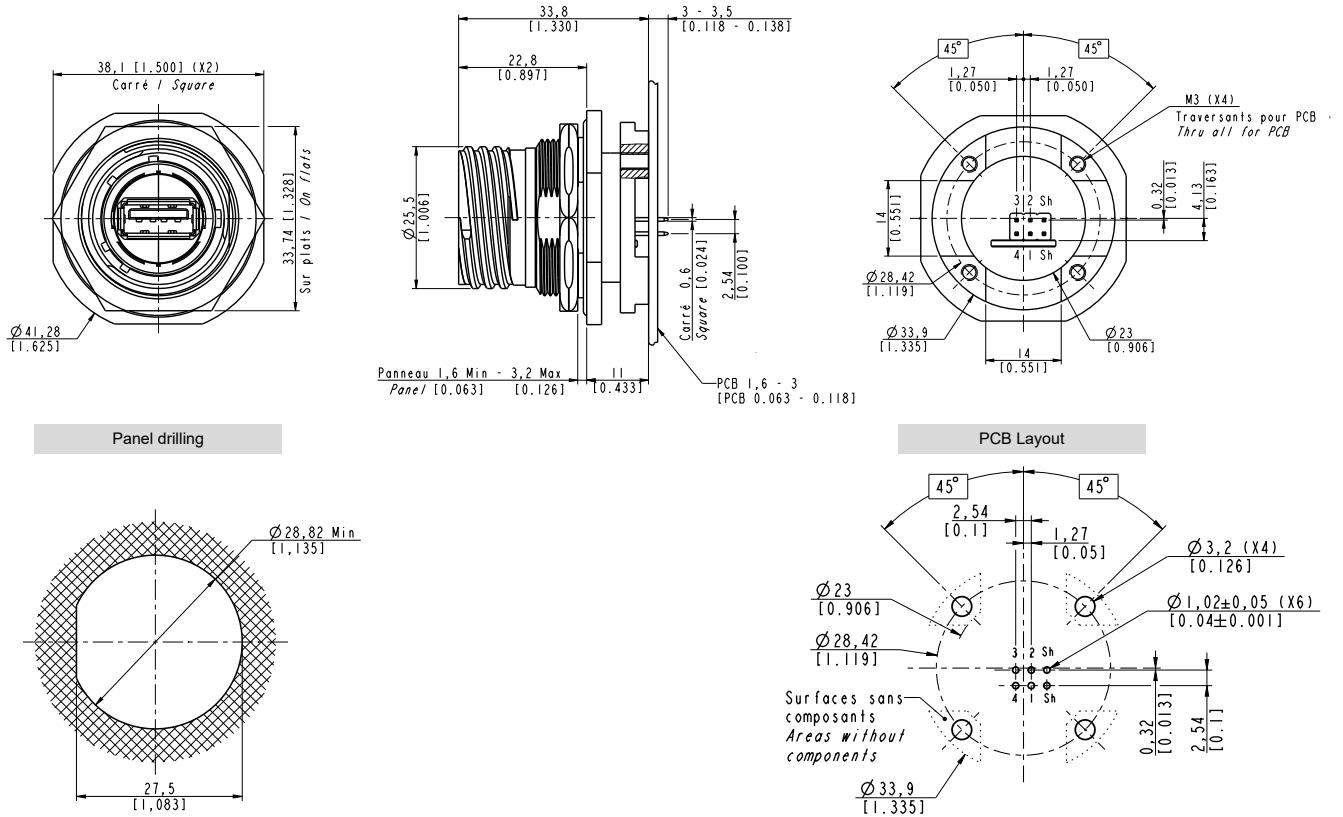
✓ : RoHS compliant

USBFTV™ - STAND OFF RECEPTACLE



Overall dimension

Receptacle - Jam nut receptacle - Hexagonal nut mounting - Shell type 7 - PC Tails contacts



Part number for coding A	Part number for coding B	Plating
USBFTV 7 SA 5 N F459	USBFTV 7S B 5 N F459	Nickel ✓
USBFTV 7 SA 5 G F459	USBFTV 7S B 5 G F459	Olive drab cadmium
USBFTV 7 SA 5 ZN F459	USBFTV 7S B 5 ZN F459	Black zinc nickel ✓

✓ : RoHS compliant

USBFTV™ - THROUGH-BULKHEAD RECEPTACLE

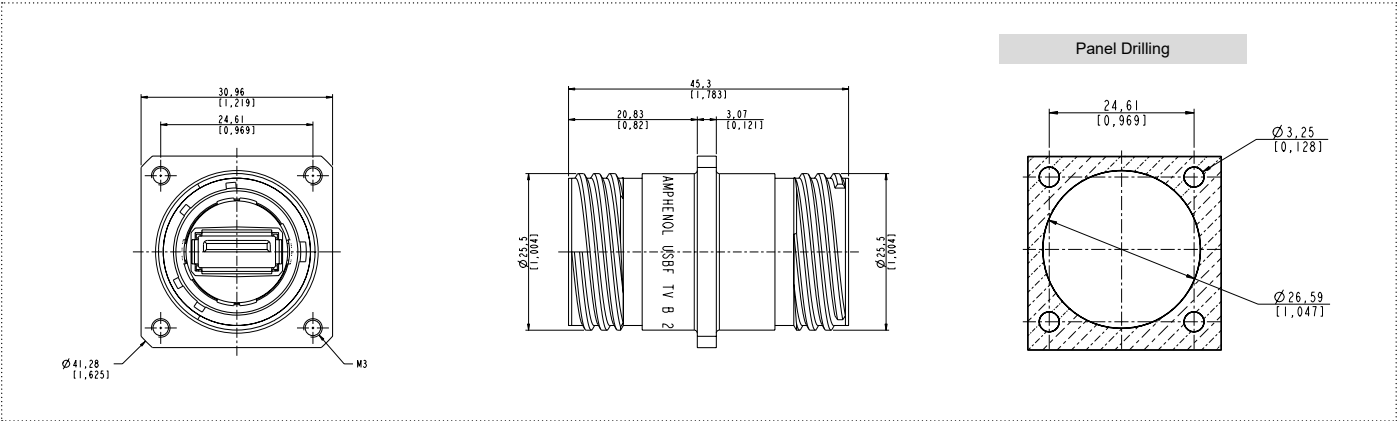


Description

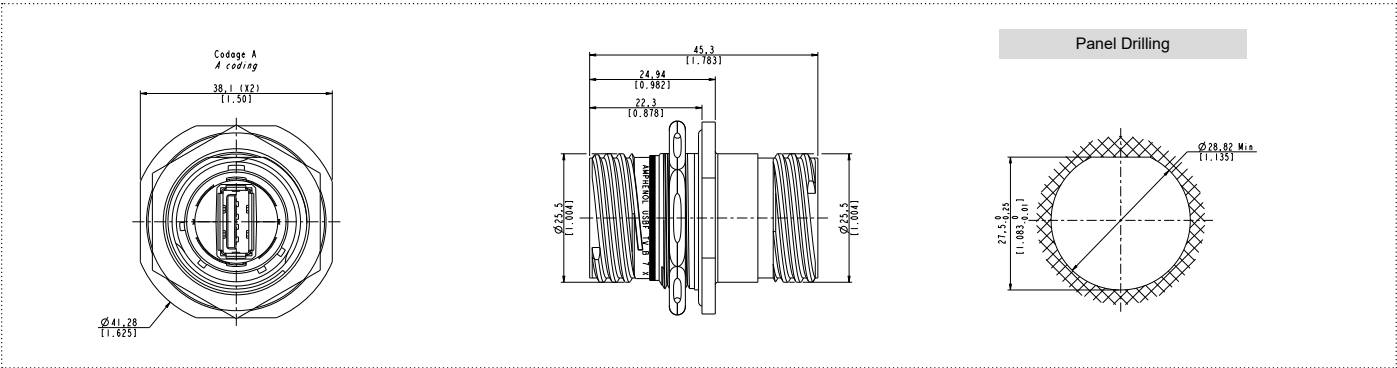
The USBFTV™ Through-bulkhead is a double-ended receptacle that enables you to connect two USBFTV plugs on both sides of your panel. In your system, it provides you the best protection and remains very easy to assemble.

Overall dimension

Receptacle - Square flange receptacle - 4 mounting holes - Shell type 2



Receptacle - Jam nut receptacle - Hexagonal nut mounting - Shell type 7



Part number for square flange receptacle	Part number for Jam nut receptacle	Plating
USBFTV B 2 N	USBFTV B 7 N	Nickel ✓
USBFTV B 2 G	USBFTV B 7 G	Olive drab cadmium
USBFTV B 2 ZN	USBFTV B 7 ZN	Black zinc nickel ✓

✓: RoHS compliant

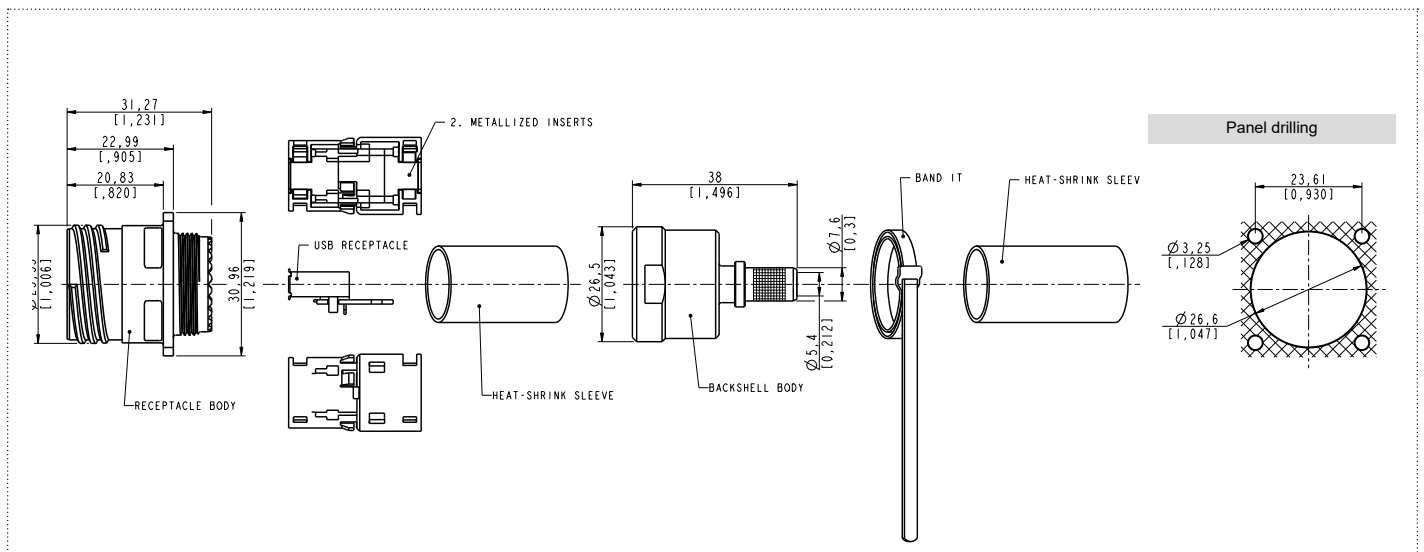
USBFTV™ - RECEPTACLE WITH 360° EMI BACKSHELL

Description

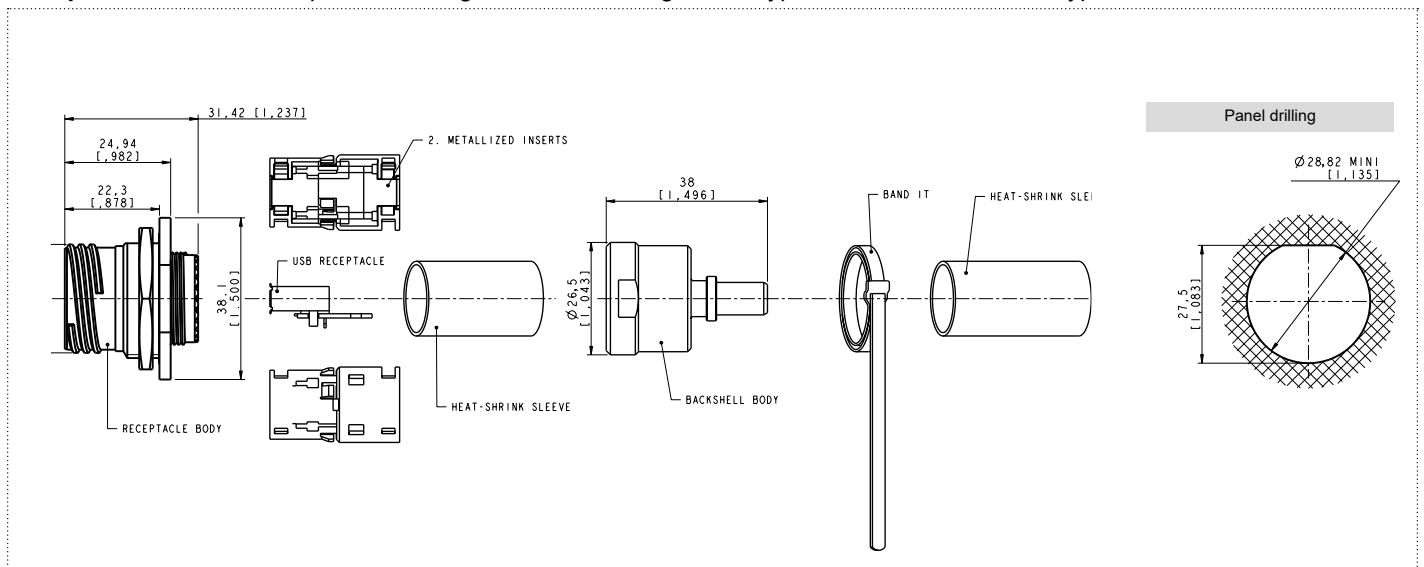
This USBFTV™ kit includes all components necessary to build up a totally 360° EMI shielded receptacle. This kit is mainly composed of an 360° backshell and the USB receptacle with PCB with 4 tinned holes for solder termination. With this receptacle kit provided without cable, you have to solder the cable on the PCB. You can find below, wires and shielding wire cabling specifications. We recommend to use our reinforced USB cable page 53. If you prefer to use your own cable, please check with us to see if your USB cable is compatible. In the case you need a complete 360° EMI shield receptacle already mounted with a define length of cable, please consult us.

Overall dimension

Receptacle - Square flange receptacle - 4 mounting holes - Shell type 2 - Back terminations type 2



Receptacle - Jam nut receptacle - Hexagonal nut mounting - Shell type 7 - Back terminations type 2



Part number for Square flange receptacle	Part number for Jam nut receptacle	Plating
KIT40263	KIT40245	Nickel ✓
KIT40263G	KIT40245G	Olive drab cadmium
KIT40263ZN	KIT40245ZN	Black zinc nickel plating ✓

✓ : RoHS compliant

USBFTV™ - ATEX ZONE 2



Description

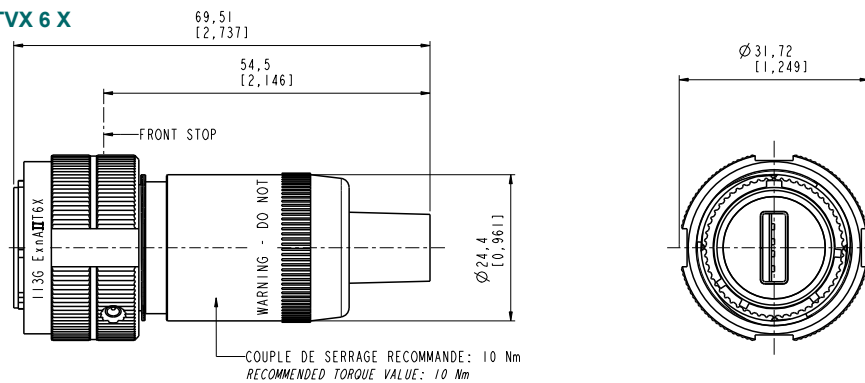
USBFTVX connectors are the same as the standard USBFTV™, but in addition, they are certified for use in explosive environments. This range is fitted to be used in ATEX zone 2 environments and 100% tested at 500V during 1 minute without sparking.

How to order : Please refer to page 123

Overall dimension

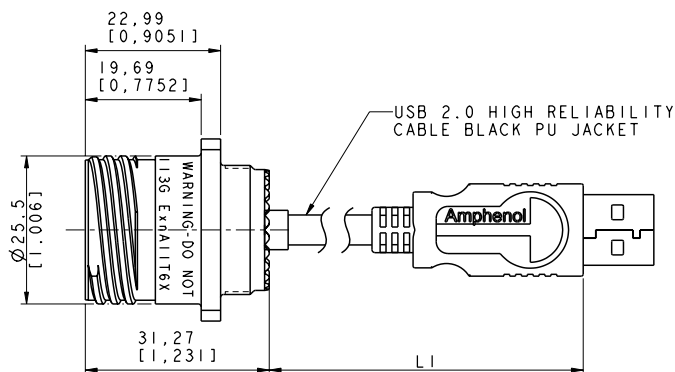
Plug - Shell type 6

Part number type: **USBFTVX 6 X**

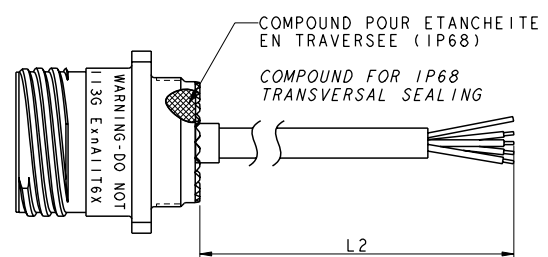


Receptacle - Square flange receptacle - 4 mounting holes - Shell type 2 - USB-A or Open cordset

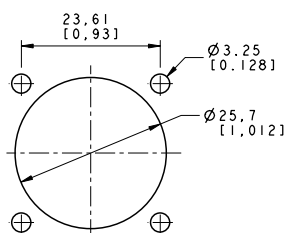
Part number type: **USBFTVX 2S X 2 X XX A**



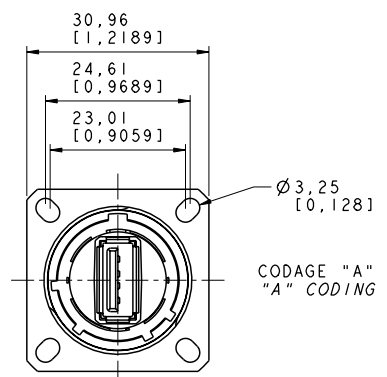
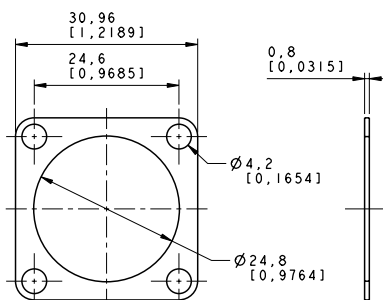
Part number type: **USBFTVX 2S X 2 X XX OPEN**



Panel drilling



JE15 Panel Gasket



USBFTV™ - ATEX ZONE 2

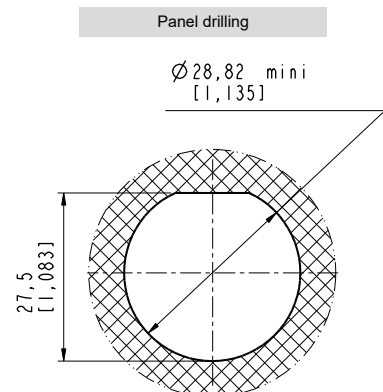
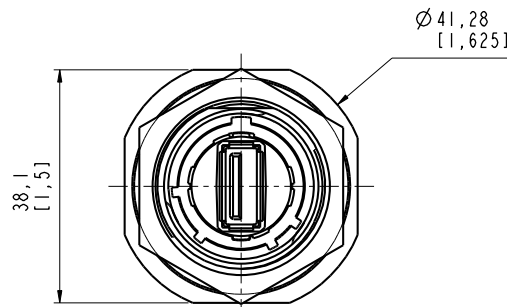
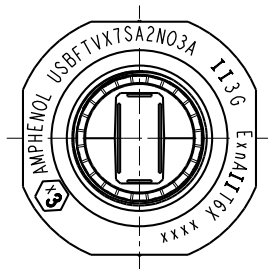
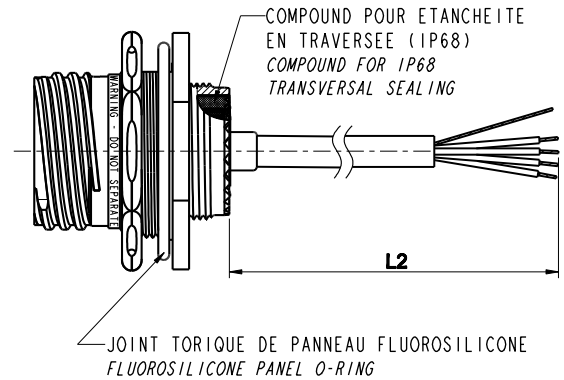
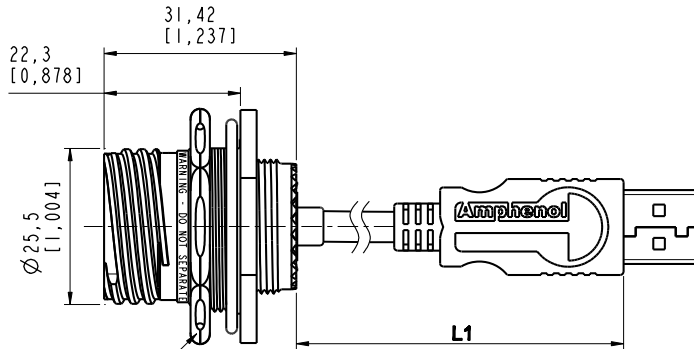
Overall dimension

Receptacle - Jam nut receptacle - Hexagonal nut mounting - Shell type 7 - USB-A or Open cordset



Part number type: **USBFTVX 7S X 2 X XX A**

Part number type: **USBFTVX 7S X 2 X XX OPEN**



USBBFTV



Description

USBBFTV is a complete ruggedized solution around USB2.0 Type-B standard using a Tri Start Thread coupling mechanism (MIL-DTL-38999 series III type) to connect the two plug and receptacle parts.

This solution allows you to insert a standard USB 2.0 cordset into a metallic plug which will protect it from shocks, dust and fluids. The assembly of this ruggedized plug doesn't require any tools and can be assembled easily in the field. Perfectly adapted to the USB2.0 standard, you have two coding possibilities to facilitate coupling when you have several receptacles on a panel.

The corresponding USBBFTV receptacle dedicated to be mounted on your panel enables you to reinforce and protect your system against leakage, shocks, vibrations and much more. This receptacle part is delivered with a defined coding when ordered but can be conveniently changed with our dedicated USBF ODE tool.

Main features

MAIN CHARACTERISTICS

- Sealed against fluids and dusts (IP68)
- Shock, vibration and traction resistant
- No cabling operation in field and no tools required
- Improved EMI protection
- Tri Start Thread coupling mechanism (MIL-DTL-38999 series III type) with anti-decoupling device - Shell size 15
- Plug retention in the receptacle: 100N in the axis
- Mating cycles: 500 minimum

DATA TRANSMISSION

- USB-B
- USB specification 2.0
- Data rate: up to 480 Mb/s for high speed USB

ENVIRONMENTAL PROTECTION

- Sealing (when mated): IP68 (temporary immersion)
- Salt spray:
 - 48 h with nickel plating ✓
 - 500 h with olive drab cadmium
 - 500 h with black zinc nickel ✓
 - 500 h with Tin-zinc plating ✓
 - 1000 h with marine bronze shell ✓
- Fire retardant / Low smoke: UL94 V0 and EN45545
- Vibrations: 10 - 500 Hz, 10 g, 3 axes: no discontinuity > 1micro s
- Shocks: IK06 > weight of 250 g drop from 40 cm [15.75 in] onto connectors (mated pair)
- Temperature range: - 40°C / +85°C

APPLICATIONS

- Battlefield communication systems
- C5ISR
- Data acquisition and transmission in harsh environment
- Navy
- Rail Mass Transit
- Industrial process control
- Robotics
- CNC machines
- Oil & Gas

✓ : RoHS compliant

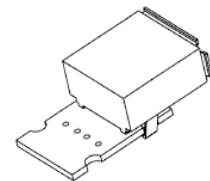
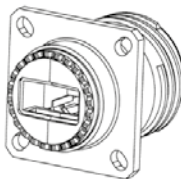
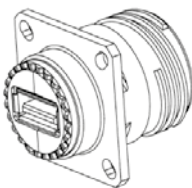
How to order : Please refer to page 124

Back terminations

Type 1:
female USB-A

Type 2:
solder 4 Tinned holes to solder your cable

View of the PCB of the Type 2 version with
4 tinned holes for solder termination



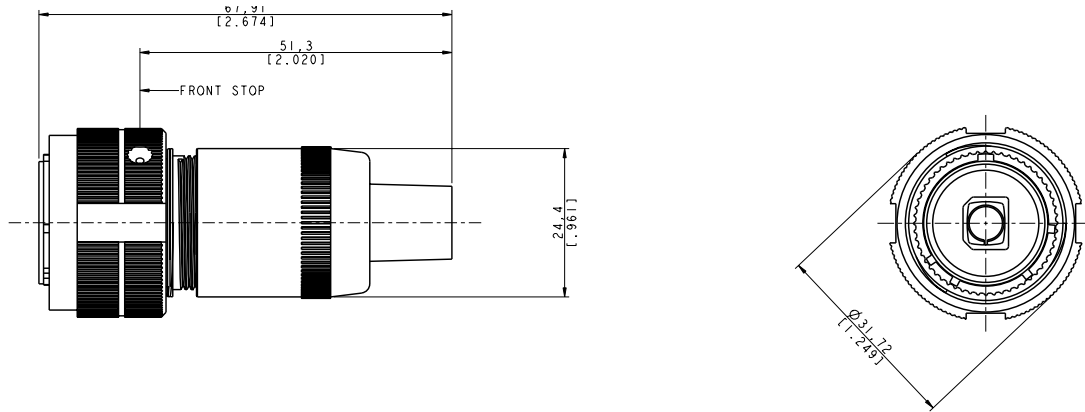
USBBFTV

Overall dimension

Plug - Shell type 6

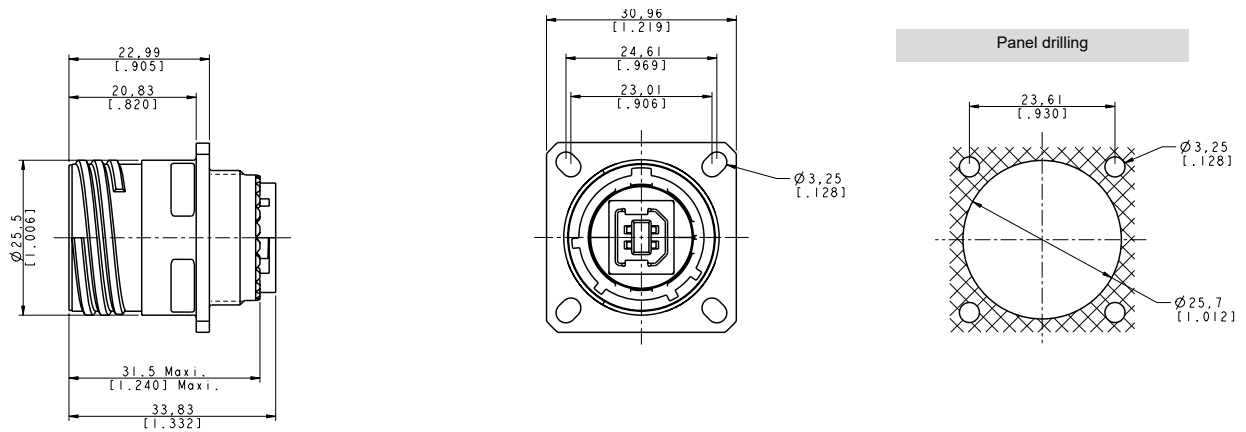


Part number type: **USBBF TV 6 X**



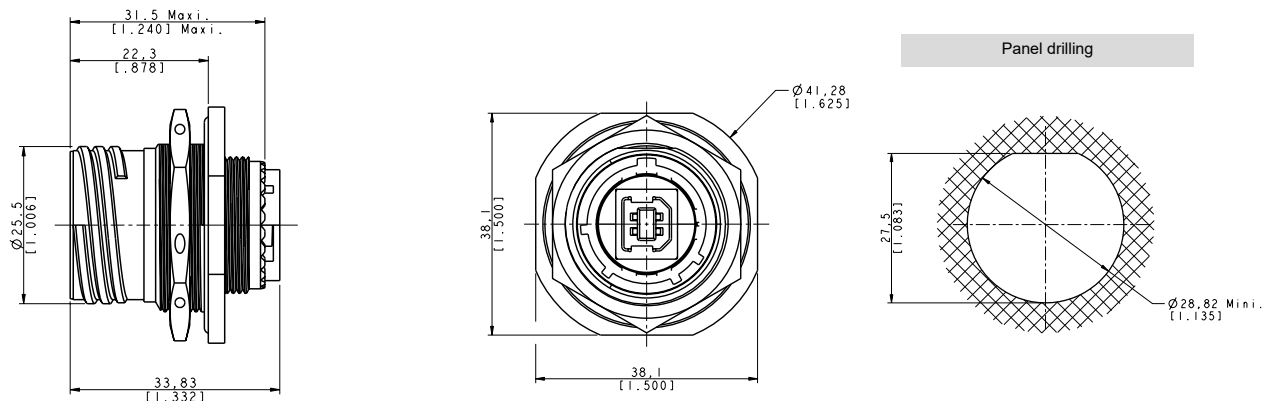
Receptacle - Square flange receptacle - 4 mounting holes - Shell type 2 - Back terminations type 1

Part number type: **USBBF TV 2 X X**



Receptacle - Jam nut receptacle - Hexagonal nut mounting - Shell type 7 - Back terminations type 1

Part number type: **USBBF TV 7 X X**



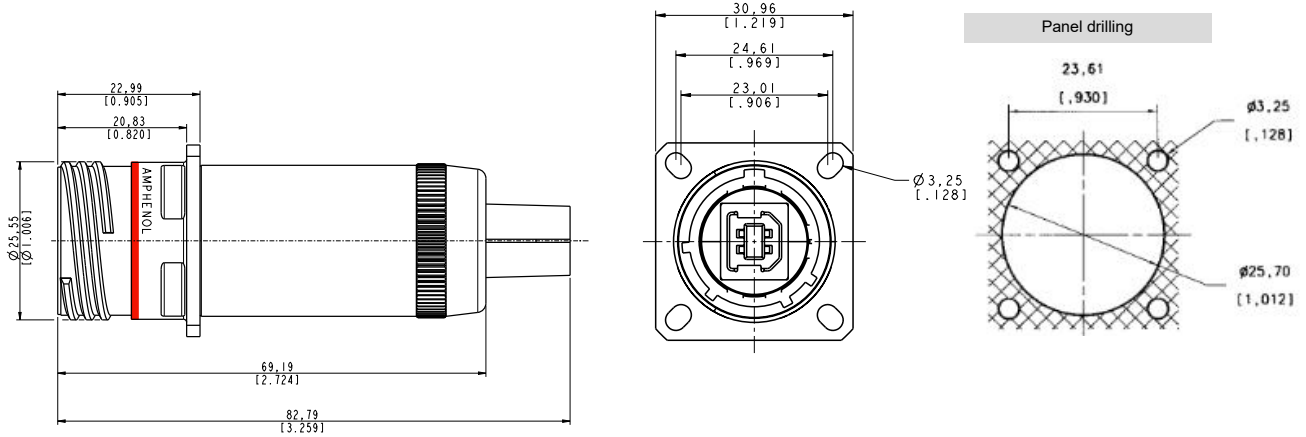
USBBFTV

Overall dimension



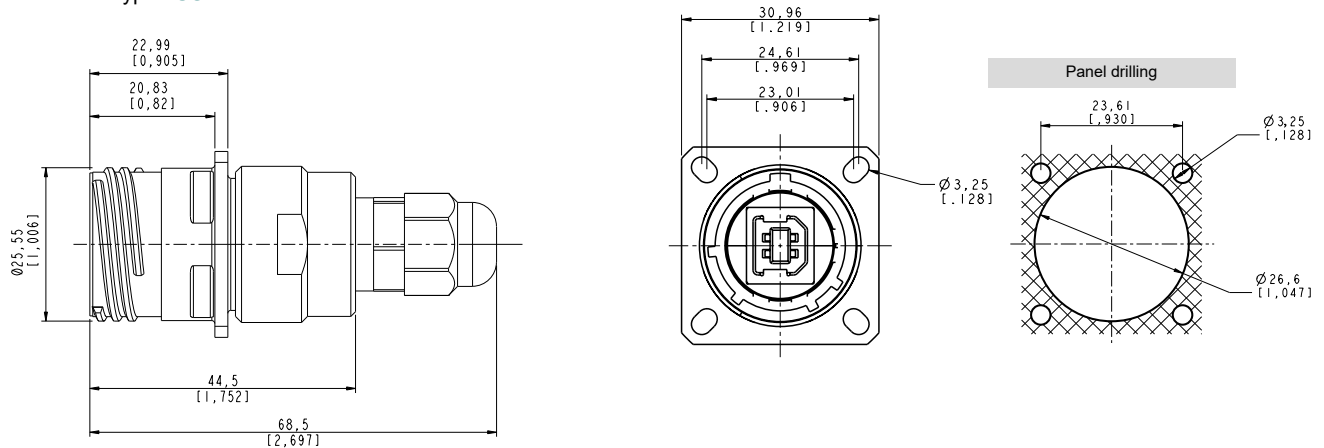
Receptacle - Square flange receptacle - 4 mounting holes - Shell type 2 - Back termination type 1 - Metal backshell

Part number type: **USBBF TV 2PE 1 X**

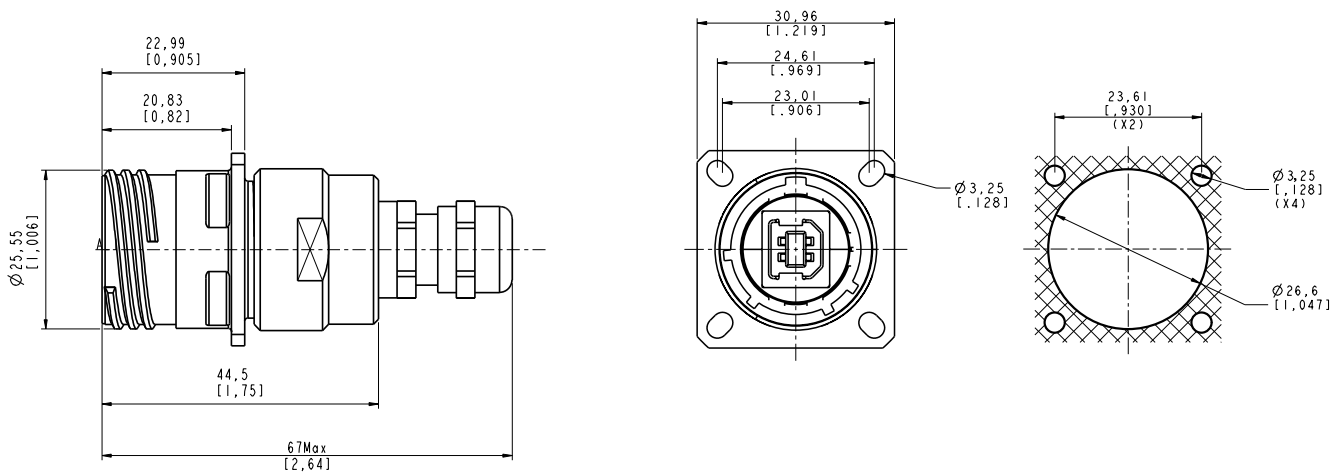


Receptacle - Square flange receptacle - 4 mounting holes - Shell type 2 - Back termination type 2 - Metal backshell

Part number type: **USBBF TV 2PE 2 X**



Part number type: **USBBF TV 2PEM 2 X**



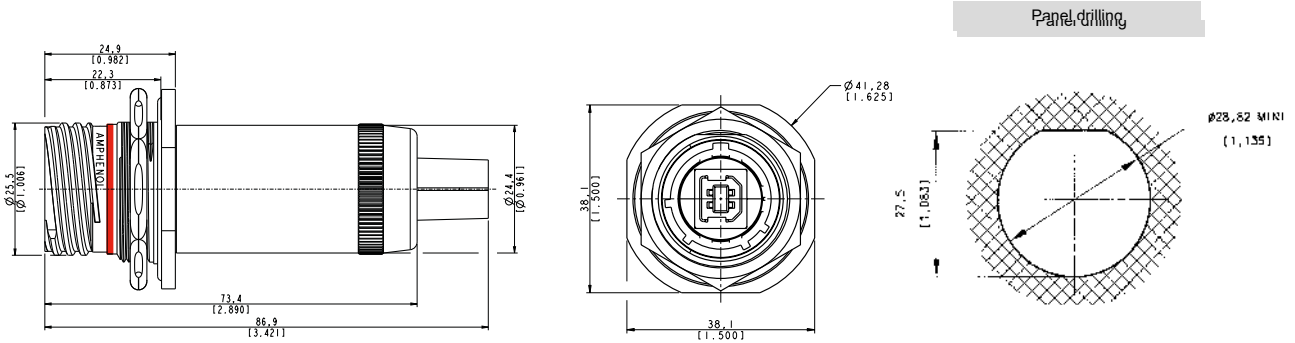
USBBFTV

Overall dimension



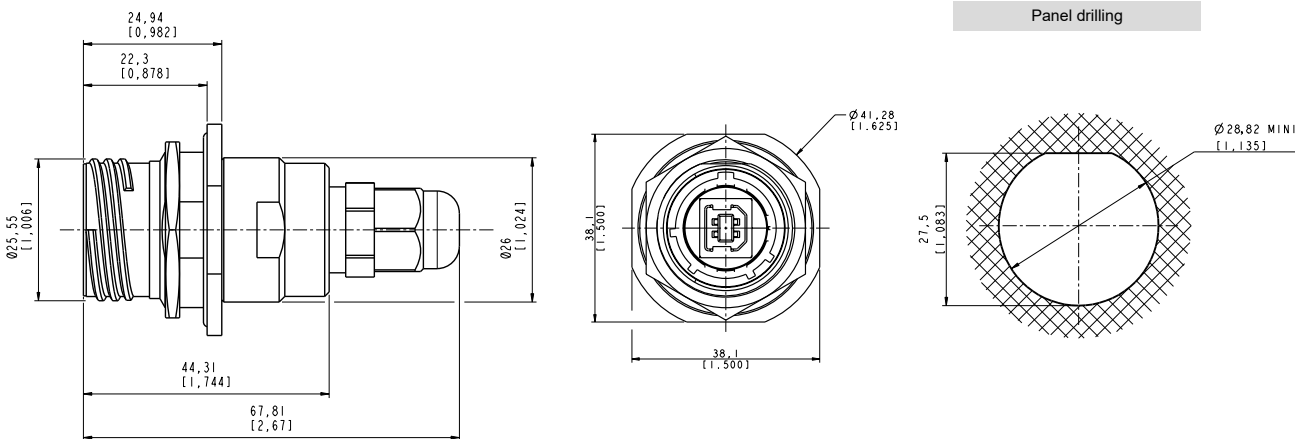
Receptacle - Jam nut receptacle - Hexagonal nut mounting - Shell type 7 - Back termination type 1 - Metal backshell

Part number type: **USBBF TV 7PE 1 X**

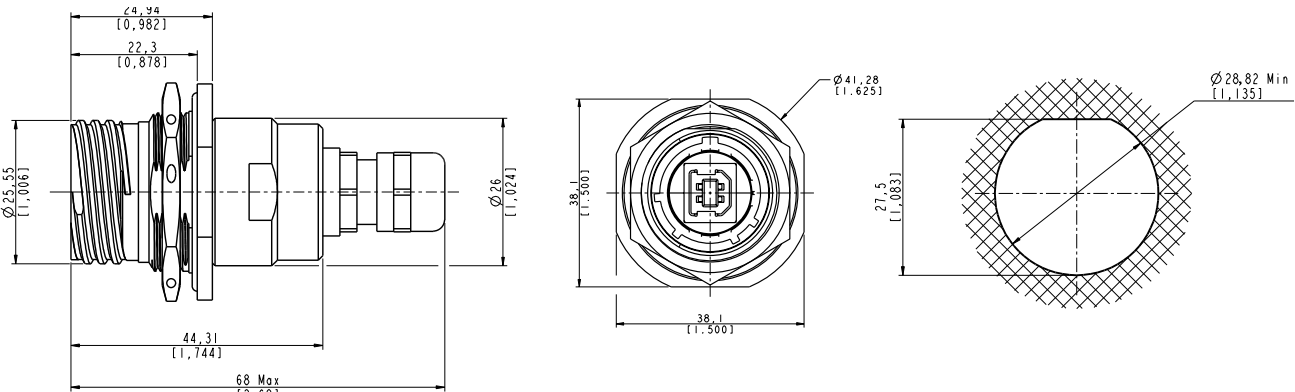


Receptacle - Jam nut receptacle - Hexagonal nut mounting - Shell type 7 - Back termination type 2 - Metal backshell

Part number type: **USBBF TV 7PE 2 X**



Part number type: **USBBF TV 7PEM 2 X**



USBBFTV - TRANSVERSALLY SEALED RECEPTACLE



Description

The transversally sealed receptacle is in all aspects equivalent to the standard and in addition, is improved with compound at the rear of the receptacle. This will prevent the sealing of the receptacle when unmated with his plug or protective cap.

The hermetic solution, as the transversally sealed one is compounded at the rear of the receptacle. Helium leakage is less than 1.10^{-6} cm³ per second [0.1 micron cubit ft per hour] at one bar [15 psi] pressure differential. This test is performed on all of the hermetic receptacles.

Main features

MAIN CHARACTERISTICS

- Tri Start Thread coupling mechanism (MIL-DTL-38999 series III type) with anti-decoupling device - Shell size 15
- 2 mechanical coding/polarization possibilities by the user (receptacle insert rotation)
- Sealed against fluids and dusts (IP68)
- Shock, vibration and traction resistant
- No cabling operation in field and no tools required
- Improved EMI protection
- USBFTV plug retention in the receptacle: 100 N in the axis
- Mating cycles: 500 minimum

DATA TRANSMISSION

- USB-B
- USB specification 2.0
- Data rate: up to 480 Mb/s for high speed USB

ENVIRONMENTAL PROTECTION

- Sealing (when mated): IP68 (temporary immersion)
- Salt spray:
 - 48 h with nickel plating ✓
 - 500 h with olive drab cadmium
 - 500 h with black zinc nickel ✓
 - 500 h with Tin-zinc plating ✓
 - 1000 h with marine bronze shell ✓
- Fire retardant / Low smoke: UL94 V0 and EN45545
- Vibrations: 10 - 500 Hz, 10 g, 3 axes: no discontinuity > 1micro s
- Shocks: IK06 > weight of 250 g drop from 40 cm [15.75 in] onto connectors (mated pair)
- Temperature range: - 40°C / +85°C

APPLICATIONS

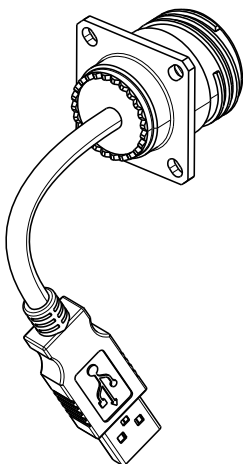
- Battlefield communication systems
- C5ISR
- Data acquisition and transmission in harsh environment
- Navy
- Rail Mass Transit
- Industrial process control
- Robotics
- CNC machines
- Oil & Gas

✓ : RoHS compliant

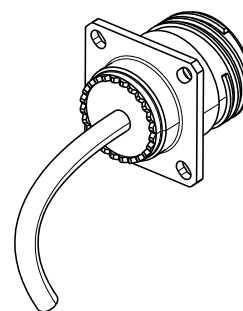
How to order : Please refer to page 125

Back terminations

USB cable end type A



USB cable type «OPEN»

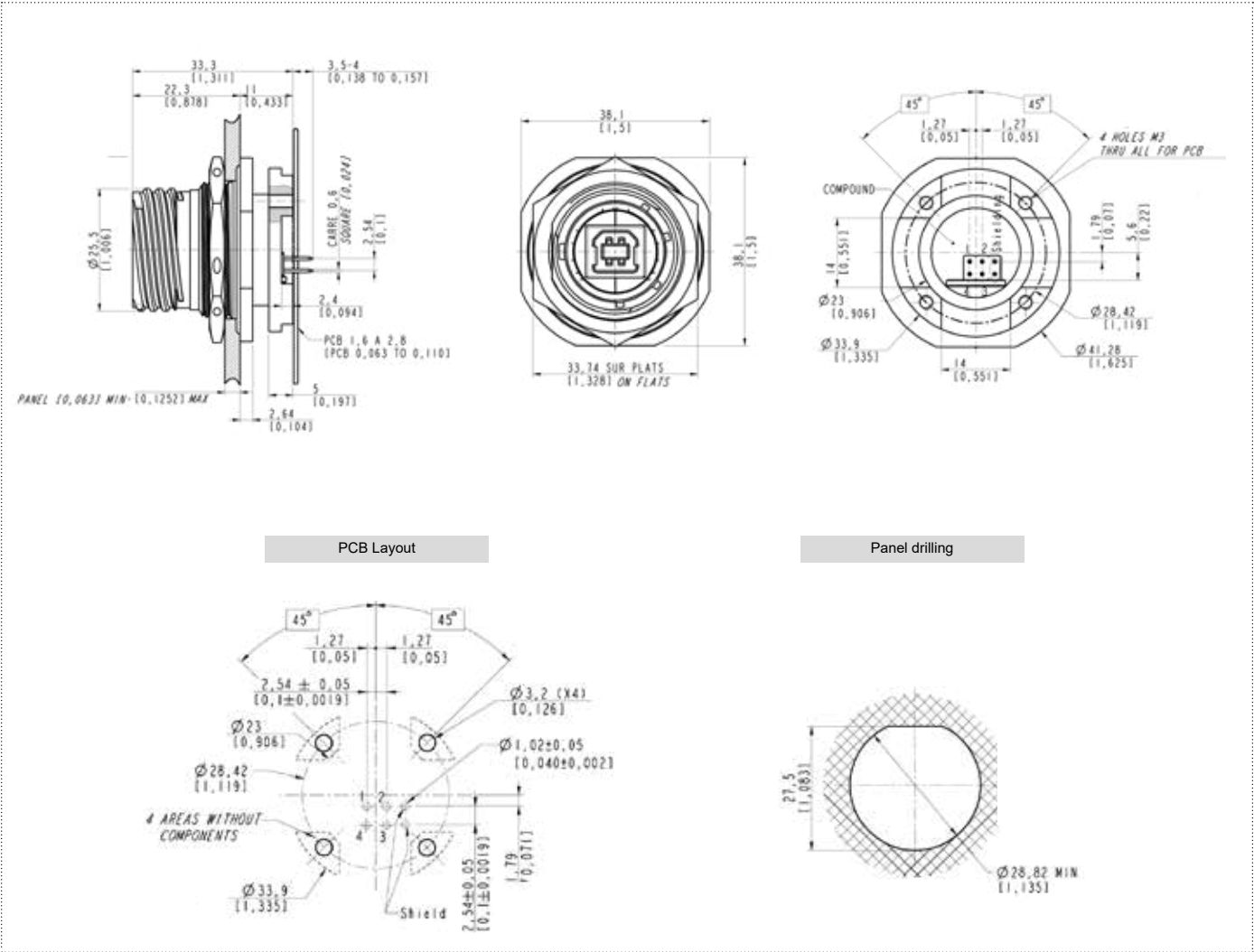


USBBFTV - STAND OFF RECEPTACLE

Overall dimension



Receptacle - Jam nut receptacle - Hex nut mounting - Shell type 7 - PC Tails



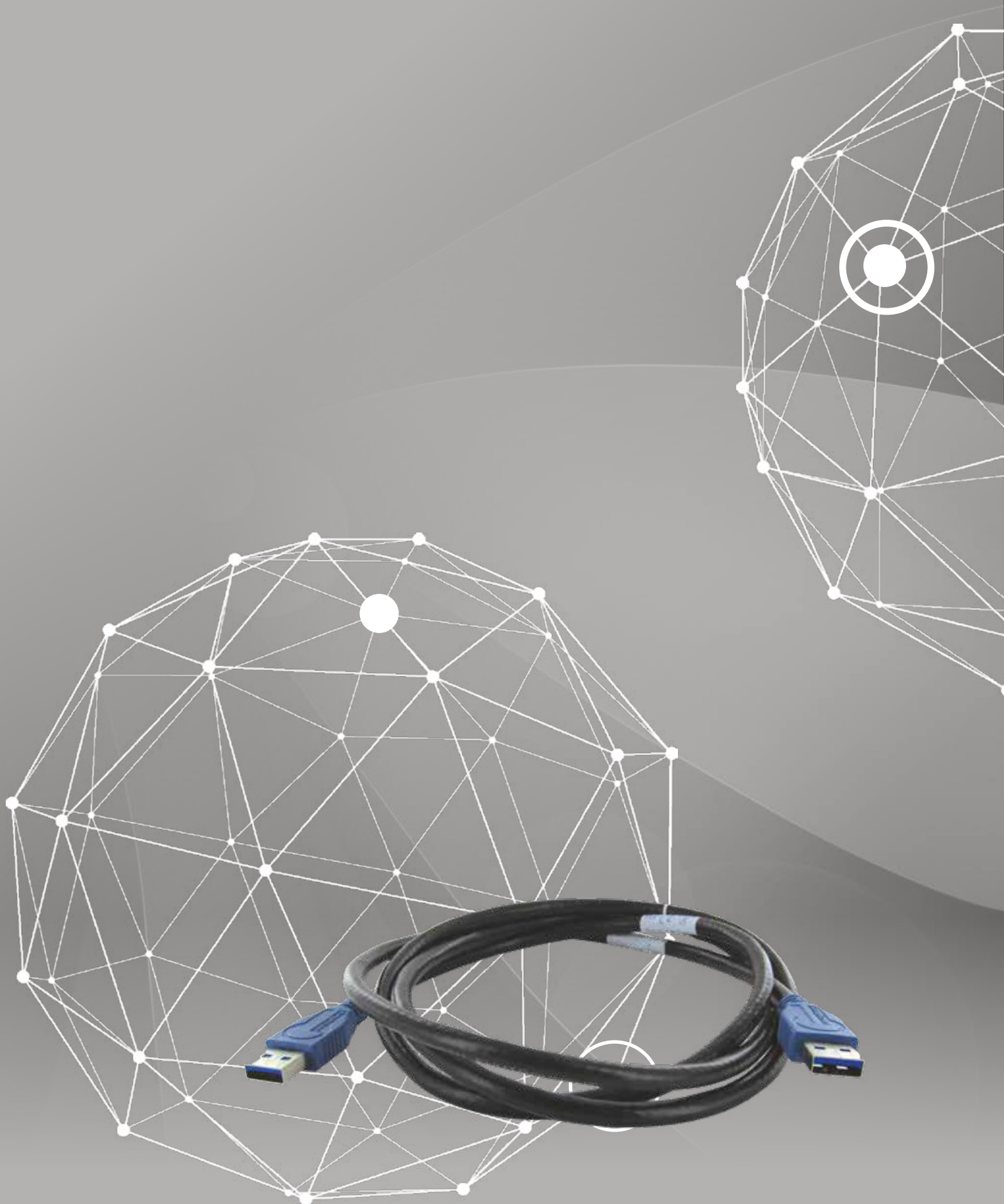
Part number	Plating
USBBF TV 7 5 N F459	Nickel ✓
USBBF TV 7 5 G F459	Olive drab cadmium
USBBF TV 7 5 ZN F459	Black Zinc Nickel ✓

✓ : RoHS compliant

NOTES

Notes section with horizontal lines for writing.

USB3.2
USB2.0
Cables and cordsets
Adapters and access points
Rugged electronics
Accessories
Assembly instructions
How to order



CABLES AND CORDSETS



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USB3.2 GEN1 CABLE AND CORDSET



Description

This USB3.2 Gen1 cable is specifically designed for fixed or deployable military or industrial applications. Can be ordered as cordset with USB-A at both end or as reel of 300m to be used for cabling activity. Its special polyurethane can withstand the harshest environment.

Design

USB3.2 2 X Data Pair	Conductors	2 x 28 AWG Stranded tinned copper wire (Ø0,39mm)
	Insulation	Polyethylene (Ø1,0mm)
	Colors	Pair 1: Purple and orange Pair 2: Blue and yellow
	Drain	2 x 28 AWG Stranded tinned copper drain wire (Ø0,39mm)
	Shield	Aluminate foil and plastic tape overlapped
USB2.0 1 X Data Pair	Conductors	2 x 28 AWG Stranded tinned copper wire (Ø0,39mm)
	Insulation	Polyethylene (Ø0,73mm)
	Colors	Green and White
Power 1 X Power Pair	Conductors	2 x 24 AWG Stranded tinned copper wire (Ø0,6mm)
	Insulation	Polyethylene (Ø1,1mm)
	Colors	Red and Black
Overall		Fillers, Aluminate foil overlapped and 36 AWG shield braiding of tinned copper wires
Jacket	Insulation	Polyurethane (Ø5,7±0,2mm)
	Color	Black

Electrical characteristics at 20°C

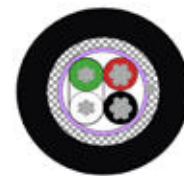
USB3.2 Gen1 2 X Data Pair	Test voltage	500 V	
	Impedance	90±7% Ohm	
	Attenuation (dB/100m)	625 MHz - 10	5 000 MHz - 36
		1 250 MHz - 15	7 500 MHz - 47
		2 500 MHz - 25	
Outer screen resistance	≤ 15 Ohm/km		
USB2.0 1 X Data Pair	Test voltage	500 V	
	Impedance	90±15% Ohm	
	Attenuation (dB/100m)	1 MHz - 4,0	48 MHz - 27,0
		4 MHz - 7,8	96 MHz - 38,0
		8 MHz - 11,4	200 MHz - 64,0
		12 MHz - 13,4	400 MHz - 116,0
		24 MHz - 19,0	
Power Wire	Conductor resistance	≤ 85 Ohm/km	
	Insulation resistance	≥ 200 MOhm*km	
	Operating voltage	≤ 1 000 V	
	Test voltage	500 V	

Other characteristics

Halogen Free Flame Retardant	Resistance to microbial/fungus growth: MIL-STD-810G, method 508.6 = grade 1-2
Oil resistance acc. to 1584, sec. 480 (60°)	Min. bending radius allowed: repeated 10 X Ø single 5 X Ø
Flame retardant acc. to UL 1581, sec. 1090 (H)	Permissible temperature range for transport, installation and operating: -40°C up to 85°C
Flame retardant acc. to IEC 60332-1-2	
RoHS compliant (Directive 2011/65/EC)	Weight: 46 kg/km

How to order : Please refer from page 126

USB2.0 CABLE AND CORDSET



Description

This USB2.0 cable has been specially selected for fixed or portable military or industrial applications. Can be ordered as cordset with USB-A at both end or as reel of 300m to be used for cabling activity. Its special polyurethane can withstand the harshest environment.

Design

USB2.0 1 X Data Pair	Conductors	2 x 28 AWG Stranded tinned copper wire (Ø0,39mm)
	Insulation	Polyethylene (Ø0,9mm)
	Colors	Green and White
Power 1 X Power Pair	Conductors	2 x 24 AWG Stranded tinned copper wire (Ø0,58mm)
	Insulation	Polyethylene (Ø1,1mm)
	Colors	Red and Black
Drain Wire	Conductor	26 AWG Stranded tinned copper drain wire
Overall		Aluminate foil overlapped and shield braiding of tinned copper wires (16 x 5 x 0,1)
Jacket	Insulation	UV resistant polyurethane (Ø5,1±0,2mm)
	Color	Black

Electrical characteristics at 20°C

USB2.0 1 X Data Pair	Test voltage	1000 V	
	Attenuation (dB/100m)	1 MHz - 4,0	48 MHz - 19,8
		4 MHz - 5,5	96 MHz - 28,6
		8 MHz - 8,2	200 MHz - 39,2
		12 MHz - 9,9	400 MHz - 56,5
		24 MHz - 14,1	
Power Wire	Conductor resistance	≤ 90 Ohm/km	
	Insulation resistance	≥ 20 MOhm*km	
	Operating voltage	≤ 100 V	
	Test voltage	1000 V	

Other characteristics

Halogen Free Flame Retardant	Resistance to microbial/fungus growth: MIL-STD-810G, method 508.6 = grade 1-2
Oil resistance acc. to 1584, sec. 480 (60°)	Min. bending radius allowed: repeated 10 X Ø single 5 X Ø
Flame retardant acc. to UL 1581, sec. 1090 (H)	Permissible temperature range for transport, installation and operating: -40°C up to 85°C
Flame retardant acc. to IEC 60332-1-2	
RoHS compliant (Directive 2011/65/EC)	Weight: 46 kg/km

How to order : Please refer from page 127



ADAPTORS AND ACCESS POINTS



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USB3.2

USB2.0

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COMPOSITE USB3.2 GEN1 ACCESS POINT



Description

The rugged USB3.2 Gen1 plastic access point is a rugged USB access point solution designed to be used in any industrial harsh environments.

The Self Closing Cap enclosure protects the USB-A receptacle from splash and dust when the plug or the USB Memory key is unmated.

Main features

MAIN CHARACTERISTICS

- Data transmission: USB specification **3.2 Gen 1**
- Data rate: up to **5GB/s** for high speed USB
- **USB-A interface**
- **USB2.0 backward compatible**

ENVIRONMENTAL PROTECTION

- Sealing level: IP54 when not mated
- Temperature range: - 40°C / + 85°C
- RoHS compliant

APPLICATIONS

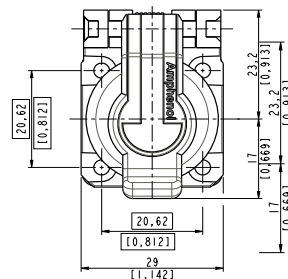
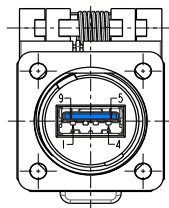
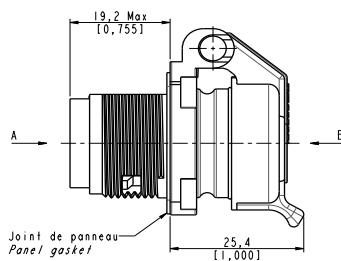
- Access point
- Telecom equipments
- Video control
- Robotics
- Industrial process control
- CNC machines
- Special machines

How to order : Please refer to page 128

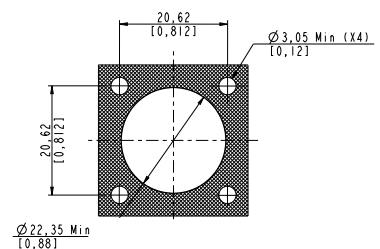
Overall dimension

Square flange receptacle – Shell type 2 - 4 mounting holes

Part number type: **USB3APSCC 2 1**



Panel Drilling



COMPOSITE USB3.2 GEN1 ACCESS POINT

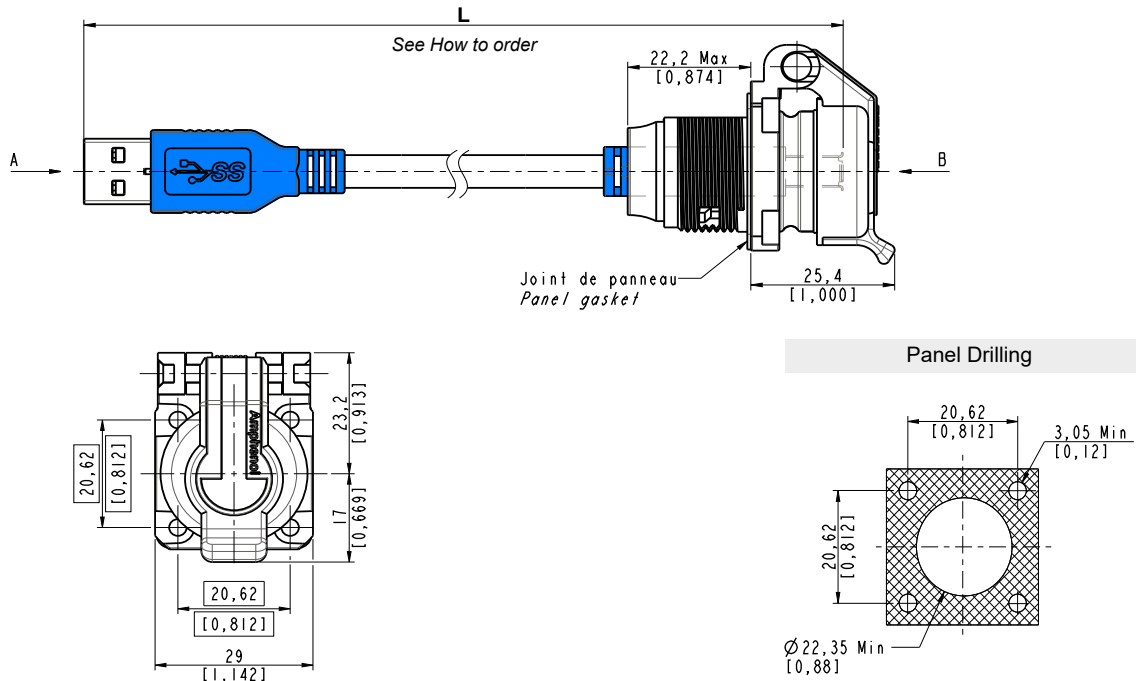


Overall dimension

Square flange receptacle – Shell type 2 - With cordset - 4 mounting holes

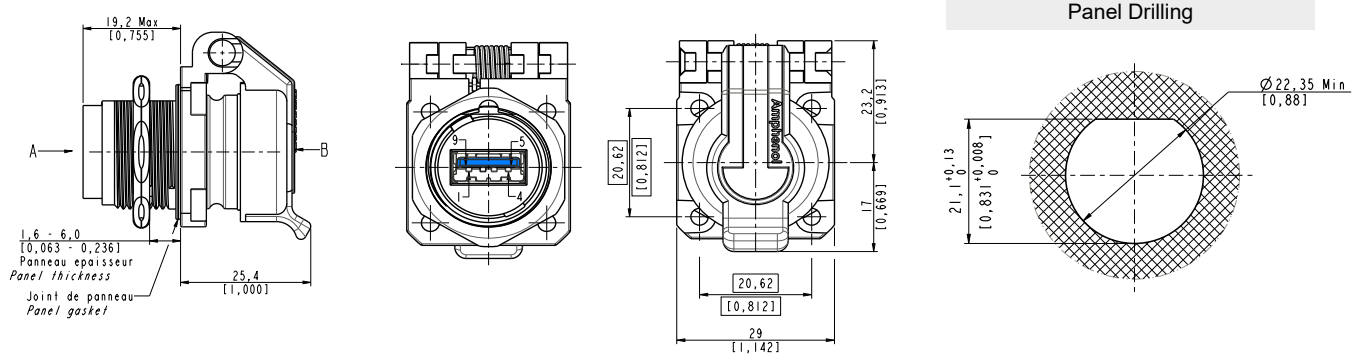
Part number type: **USB3APSCC 2 2 XX A**

X: see the How to order to complete your part number



Jam nut receptacle – Shell type 7

Part number type: **USB3APSCC 7 1**



COMPOSITE USB3.2 GEN1 ACCESS POINT

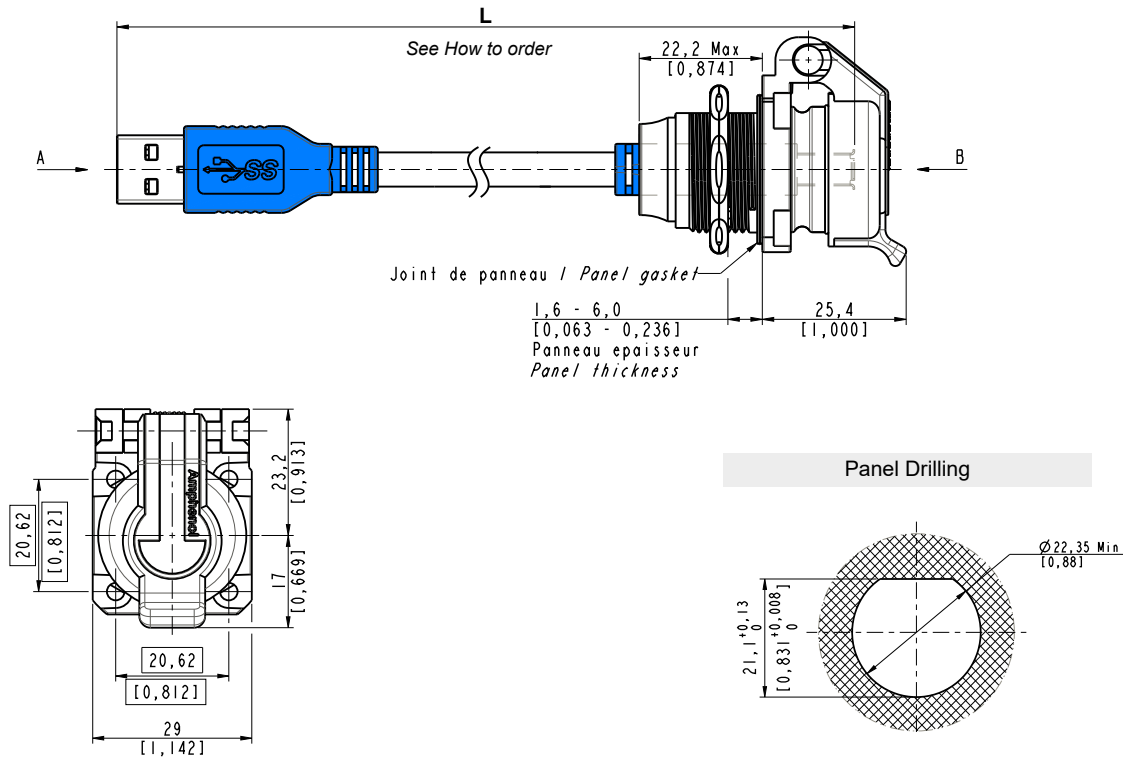


Overall dimension

Jam nut receptacle – Shell type 7 - With cordset

Part number type: **USB3APSCC 7 2 XX A**

X: see the How to order to complete your part number





USB3.2 GEN1 AND USB2.0 ACCESS POINT

Description

This USB receptacle is perfectly suitable for access point applications to connect a standard USB key or a USB cable. These receptacles are available on USB3.2 Gen1 - Type A and USB2.0 - Type A or B.

The square flange receptacle is a derivate from MIL-DTL-26482 series size 18. The included composite self-closing cap protects your receptacle against splash and dust.

Main features

MAIN CHARACTERISTICS

- Sealing level: IP54 when not mated
- Temperature range: -40°C / +85°C
- RoHS compliant

DATA TRANSMISSION

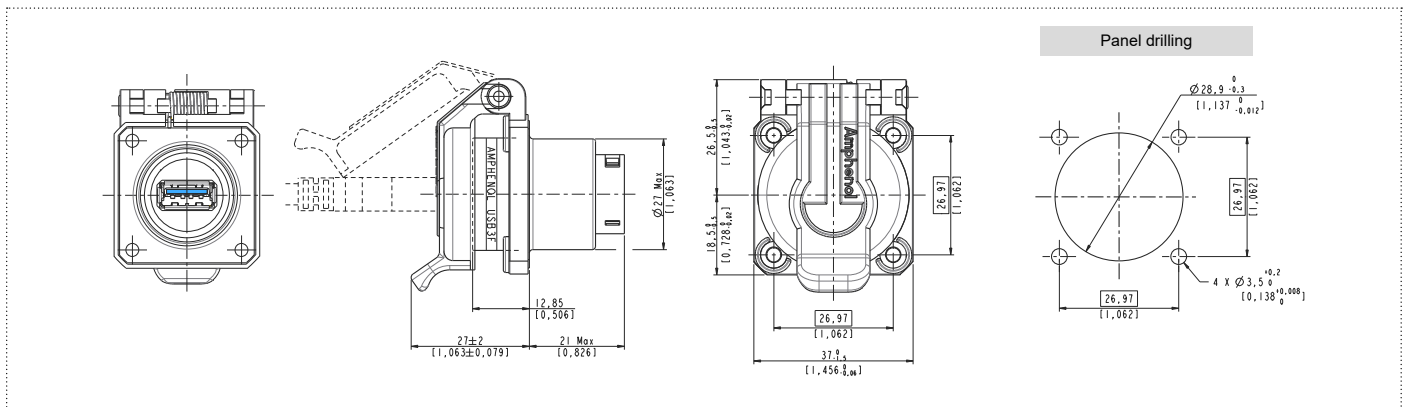
- UBS-A
- USB specification 3.2 Gen1
- Data rate: up to 5 Gb/s for high speed USB
- USB specification 2.0
- Data rate: up to 480 Mb/s for high speed USB

APPLICATIONS

- Access point
- Telecom equipments
- Video control
- Robotics
- Industrial process control
- CNC machines
- Special machines

Overall dimension

USB3.2 Gen1 access point - With self-closing cap



Important note:

- The part number included the receptacle and the self-closing cap.
- This version is with USB-A in front and back termination.

Part number	Plating	Metallized inserts (EMI)
USB3 F 2 B SCC	Black coated ✓	No
USB3 F 2 N SCC	Nickel plated ✓	Yes
USB3 F 2 G SCC	Olive drab cadmium plated	Yes
USB3 F 2 ZN SCC	Black Zinc Nickel ✓	No

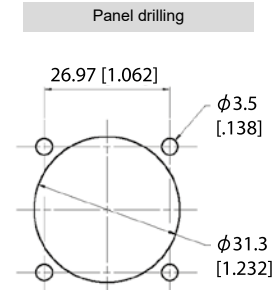
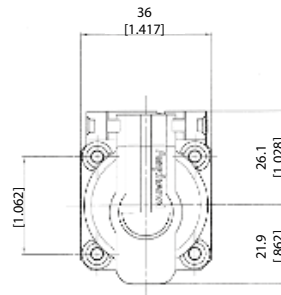
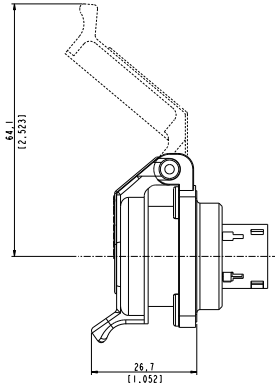
✓ : RoHS compliant

USB3.2 GEN1 AND USB2.0 ACCESS POINT



Overall dimension

USB2.0 access point - With self-closing cap

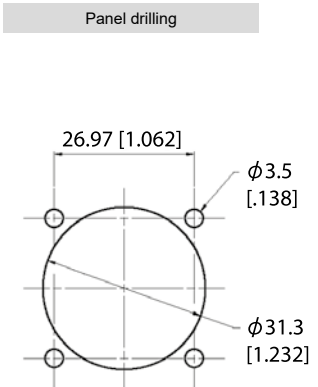
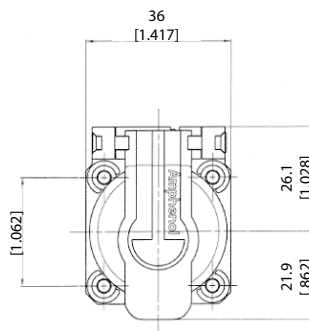
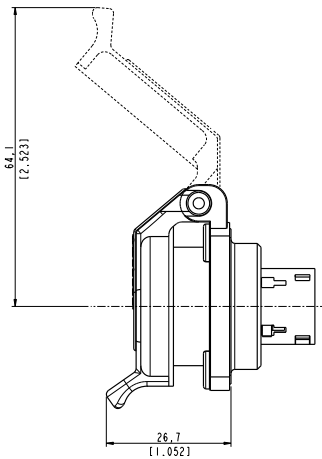


Important note:

- The part number included the receptacle and the self-closing cap.
- This version is with USB-B in front and USB-A in back termination.

Part number	Plating	Metallized inserts (EMI)
USB F 2 1 B SCC	Black coated ✓	No (blank insert)
USB F 2 1 N SCC	Nickel plated ✓	Yes
USB F 2 1 G SCC	Olive drab cadmium plated	Yes
USB F 2 1 ZN SCC	Black zinc nickel ✓	No

USBB access point - With self-closing cap



Important note:

- The part number included the receptacle and the self-closing cap.
- This version is with USB-B in front and USB-A in back termination.

Part number	Plating	Metallized inserts (EMI)
USBB F 2 1 B SCC	Black coated ✓	No (blank insert)
USBB F 2 1 N SCC	Nickel plated ✓	Yes
USBB F 2 1 G SCC	Olive drab cadmium plated	Yes
USBB F 2 1 ZN SCC	Black Zinc Nickel ✓	No

✓ : RoHS compliant

COMPOSITE USB2.0 ACCESS POINT

Description

The rugged USB plastic access point is a rugged USB access point solution designed to be used in any industrial harsh environments.

The Self Closing Cap enclosure protects the USB-A Field receptacle from splash and dust when the plug or the USB Memory key is unmated.

Main features

MAIN CHARACTERISTICS

- Data transmission: USB specification 2.0
- Data rate: up to 480 Mb/s for high speed USB
- UBS-A
- Sealing level: IP54 when not mated
- Temperature range: -40°C / +85°C
- RoHS compliant

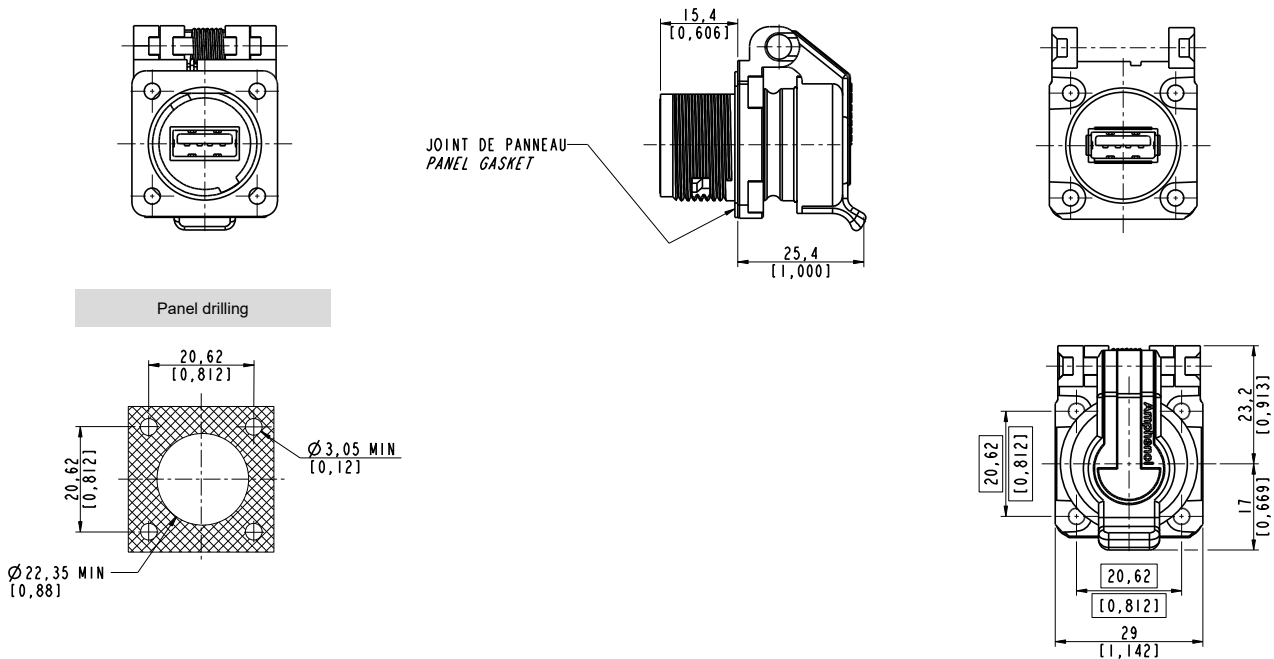
APPLICATIONS

- Access point
- Telecom equipments
- Video control
- Robotics
- Industrial process control
- CNC machines
- Special machines

Overall dimension

Square flange access point

Part number : **USB AP SCC 21**

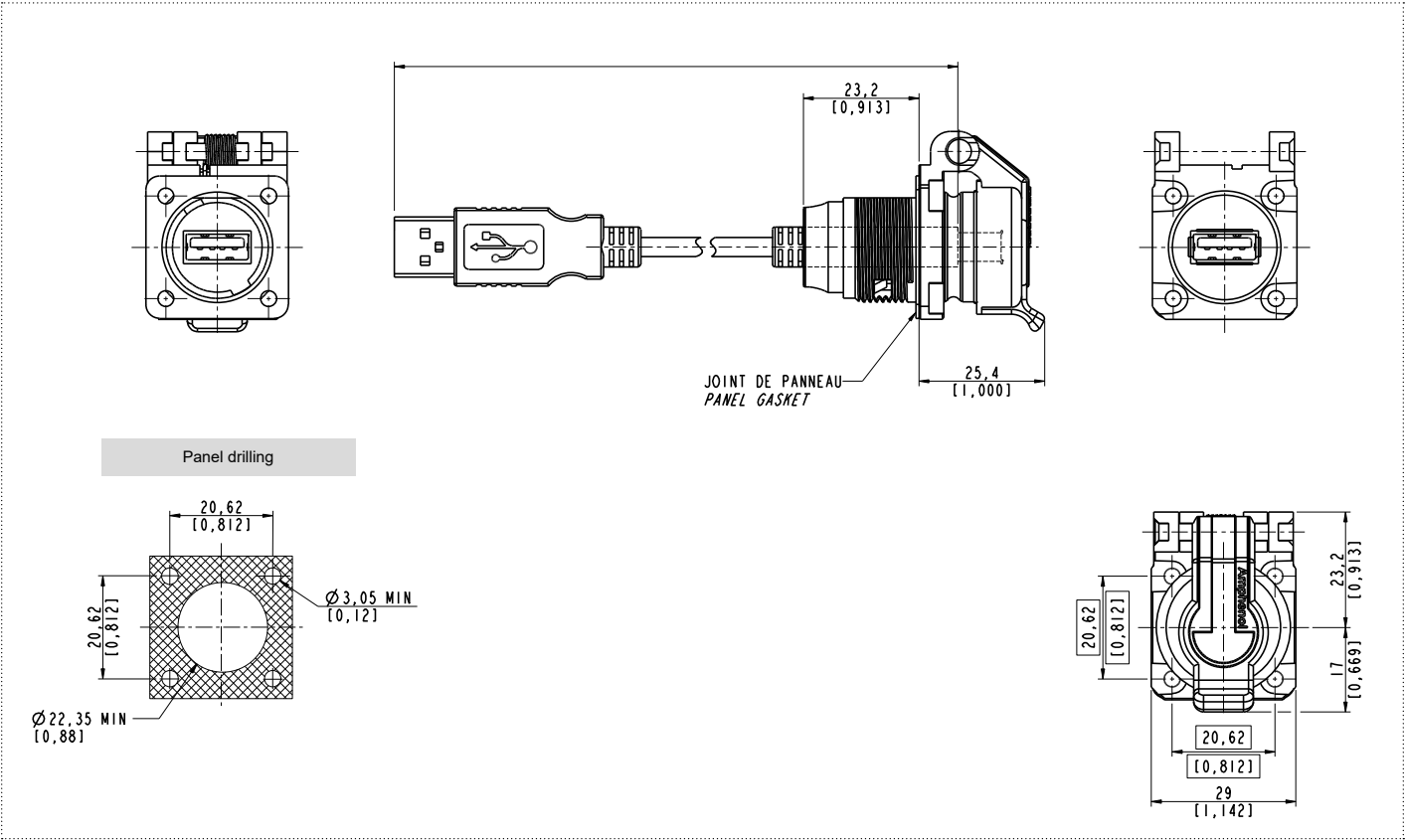


COMPOSITE USB2.0 ACCESS POINT



Overall dimension

Square flange access point - USB-A cordset



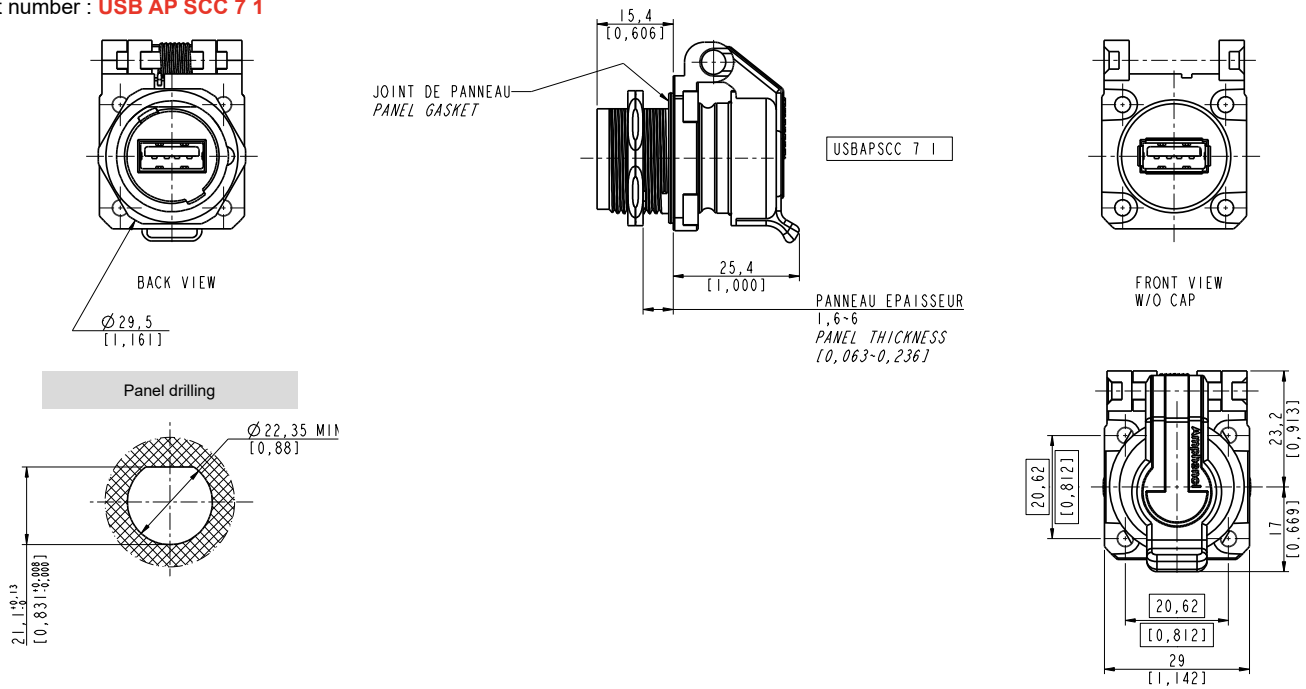
Part number	Cordset length (Meters)	Cordset length (Feet)
USB AP SCC 22 02 A	0.2	0.66
USB AP SCC 22 03 A	0.3	0.98
USB AP SCC 22 05 A	0.5	1.65
USB AP SCC 22 10 A	1.0	3.28

COMPOSITE USB2.0 ACCESS POINT

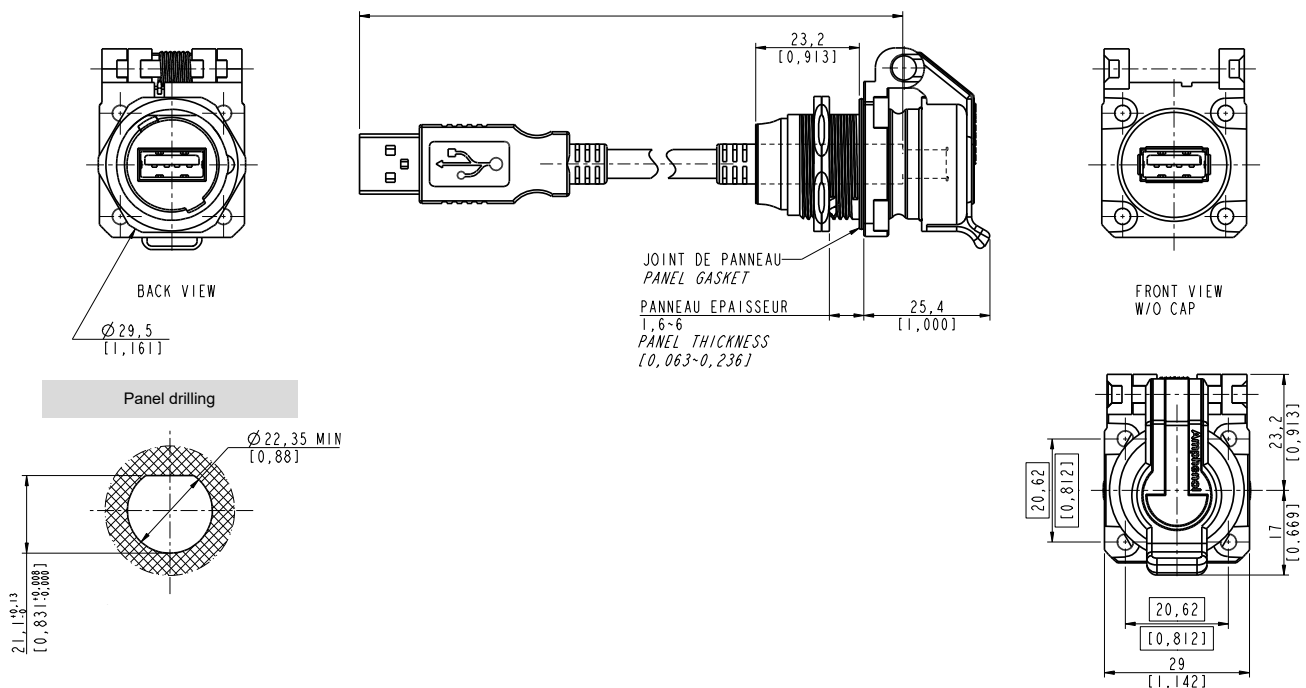
Overall dimension

Jam nut access point

Part number : **USB AP SCC 7 1**



Jam nut access point - USB-A cordset



Part number	Cordset length (Meters)	Cordset length (Feet)
USB AP SCC 7 2 02 A	0.2	0.66
USB AP SCC 7 2 03 A	0.3	0.98
USB AP SCC 7 2 05 A	0.5	1.65
USB AP SCC 7 2 10 A	1.0	3.28

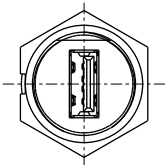
COMPOSITE USB2.0 ACCESS POINT



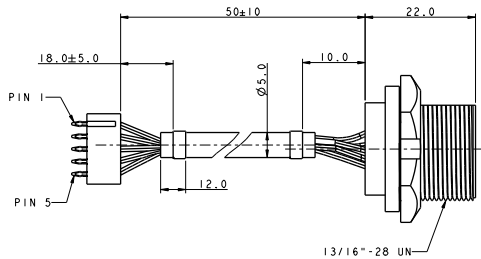
Overall dimension

USB-A receptacle and plug

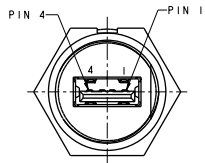
Part number : **USB AF 7**



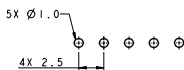
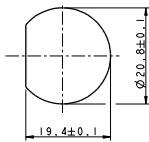
Panel drilling



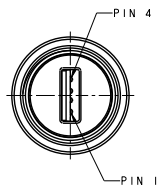
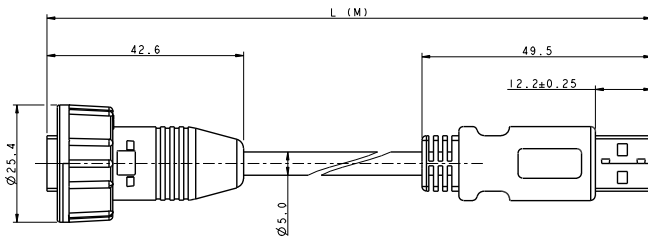
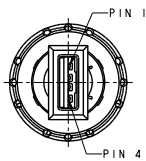
PCB layout



Pin assignments



Part number type: **USB AF 6A XXX**



Part number	Cordset length (Meters)	Cordset length (Feet)
USB AF 6A 200	2.0	3.28
USB AF 6A 500	5.0	16.40

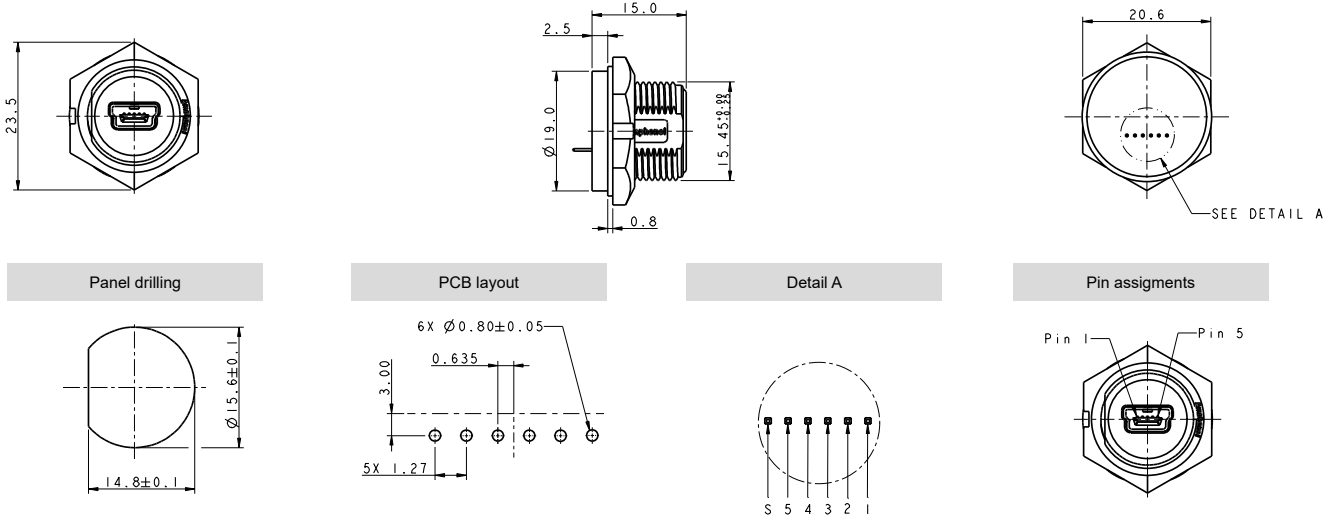
COMPOSITE USB2.0 ACCESS POINT



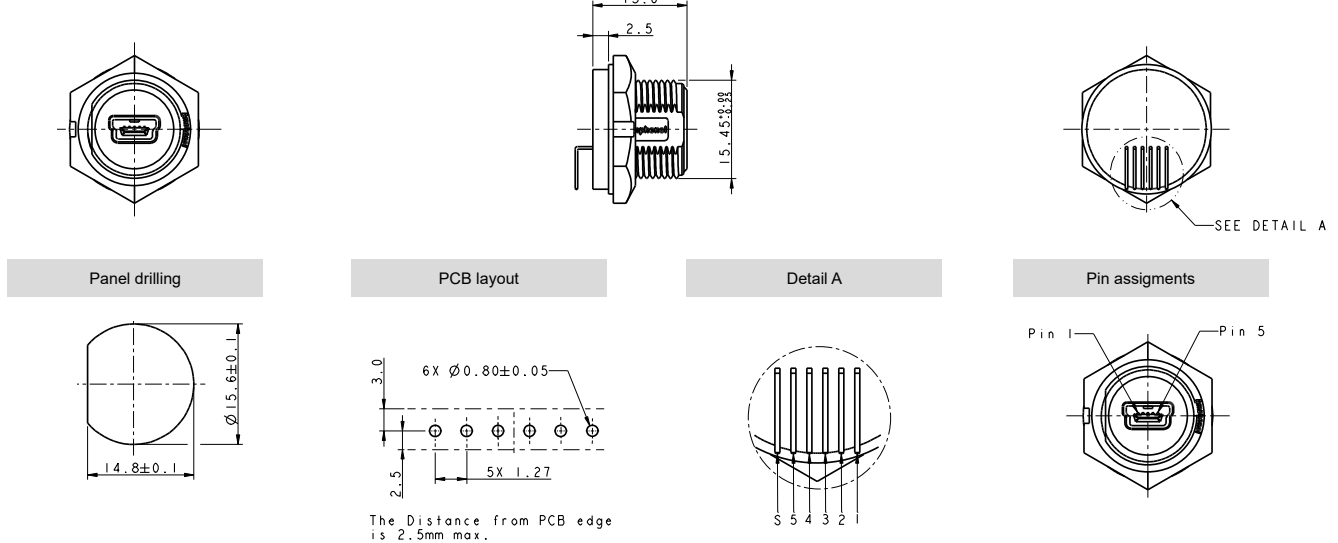
Overall dimension

USB Mini B receptacle and plug

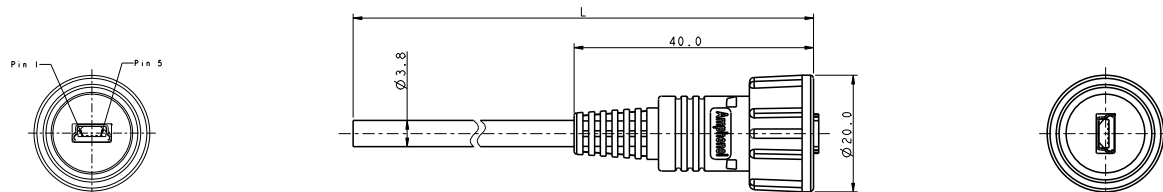
Part number : **USB MINI BF 7 PCB**



Part number : **USB MINI BF 7 PCB 90**



Part number type: **USB MINI BF 6 XXX OPEN**



Part number	Cordset length (Meters)	Cordset length (Feet)
USB MINI BF 6 200 OPEN	2.0	3.28
USB MINI BF 6 500 OPEN	5.0	16.40

USB2.0 TO TYPE EN3646 - PT/451 - ABS1547 ADAPTOR

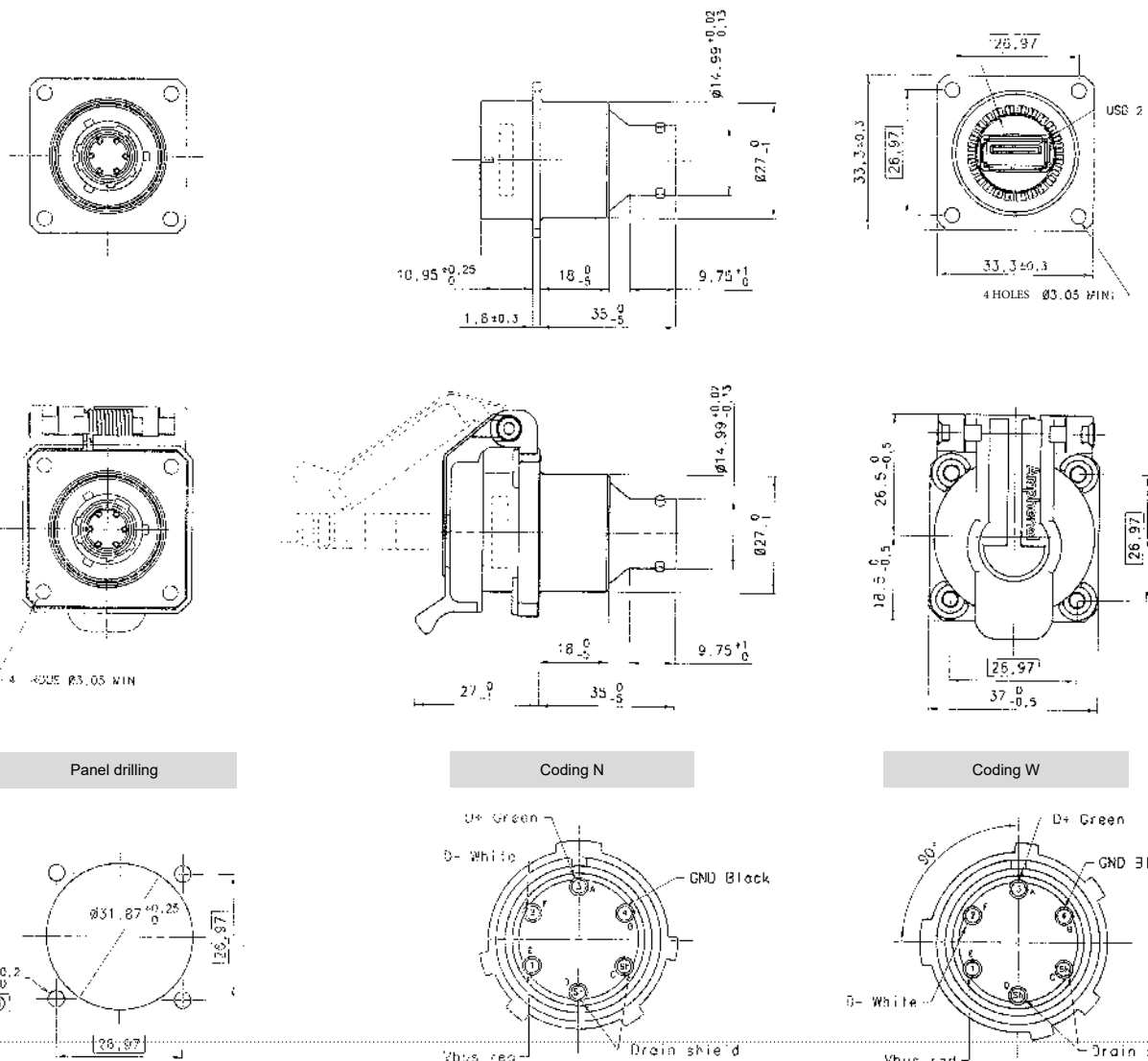


Description

This special USB adaptor is the easiest way to connect your EN3646 and PT/451 connector to a USB 2.0 - Type A. Connector. The arrangement of this connector is 10-6 as below. If you want to use this adaptor as an access point, you can include a composite self-closing cap to protect your receptacle against splash and dust. This adaptor is qualified ABS1547.

Overall dimension

USB adaptor to EN3646 - PT/451 with 10-6 arrangement - With or without self-closing cap



Part number	ABS1547 part number	Plating	Coding	Self-closing cap
35608N	ABS1547-003A02N	Black anodized ✓	N	No
35615W	ABS1547-003A02W		W	
35616N	ABS1547-003A03N		N	Yes
35617	ABS1547-003A03W		W	

✓ : RoHS compliant



RUGGED ELECTRONICS



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ROK - Rugged Oval Key	91
USB3FTV™ - USB3.2 Gen 1 amplifier	92
USBFTV™ - USB2.0 amplifier	95

USB3CFTV™ MEMORY KEY



Description

USB3.2 Gen1 Type C reinforced memory keys allows you to carry sensitive information in total security in harsh military, avionics/airframe or industrial environment. Its design, based on MIL-DTL-38999 series III can only be mated to our USB3CF TV receptacles and is available, as standard, in capacities from 16 to 256Gb.

Electronics used in our reinforced USB keys are from the latest generation, using TLC 3D flash technology (BiCS3) and benefit from PLM "Product Life Management" which means that we can inform in advance about future possible evolutions.

Main features

Main characteristics :

- Available capacities : 16, 32, 64, 128 & 256Gb.
- Compatible only with USB3CFTV receptacles.
- Tri Start Thread coupling mechanism (MIL-DTL-38999 series III type) with anti-decoupling device.
- Shell size 11.
- PLM "Product Life Management" : future evolution and obsolescence notification.

Data transmission :

- USB3.2 Gen1 max transfer rate : 5 Gb/s.
- Compatible with USB2.0 transfer with 480Mb/s.
- TLC 3D flash technology (BiCS3).
- MTBF: >4 000 000 hours.
- Global Wear Leveling.
- Flash bad-block management.

Environmental protection :

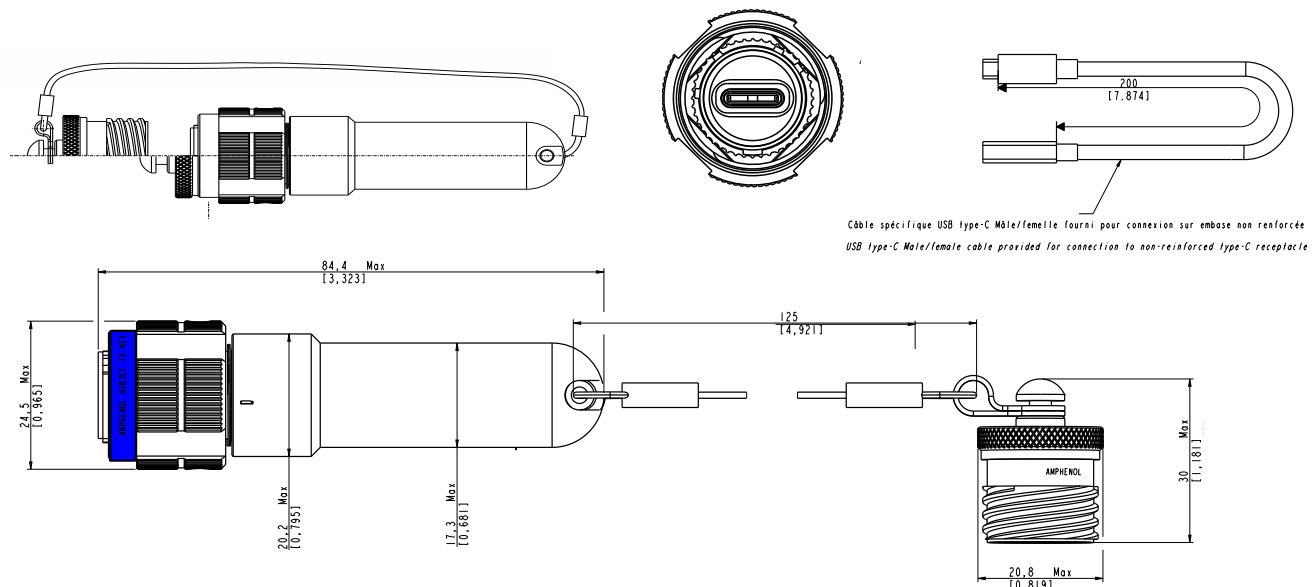
- Sealed against fluids and dusts : IP68 mated.
- Salt spray: Aluminium shell :
 - Nickel plating ✓ : 48h
 - Black zinc nickel plating ✓ : 500h
 - Olive drab cadmium plating : 500h
 - Tin-zinc plating ✓ : 500h NEW
- Vibrations: MIL-STD-810-H, Method 514.8, Category 14
- Temperature range: - 40°C / +85°C (MIL-STD-810F)
- Data transmission during vibration & temperature tests

✓ : RoHS compliant

How to order : Please refer to page 129

Overall dimension

Part number type: **USB3CF TV KEY 6 XX X XXX**



USB3FTV™ MEMORY KEY



Description

The USB3.2 Gen1 reinforced memory key allows you to carry sensitive information in total security. Its design, based on MIL-DTL-38999 series III can only be mated to our USB3FTV™ or USBFTV™ receptacles and is available, as standard, in capacities from 32 to 256Gb. We provide reinforced USB memory keys available in different capacities.

Main features

MAIN CHARACTERISTICS

- Type: USB3.2 Gen1 (capacities 32, 64, 128 & 256 GB)
- Only compatible with USB3FTV and USBFTV receptacle
- UBS-A
- Voltage: 5V DC - 500 mA max

SPECIFIC FEATURES

- Engineering control (Product change notice & end of life Policy)
- Memory type: MLC (3000 read/write cycles)
- Wear Leveling function
- MTBF: 1,000,000 hours

ENVIRONMENTAL PROTECTION

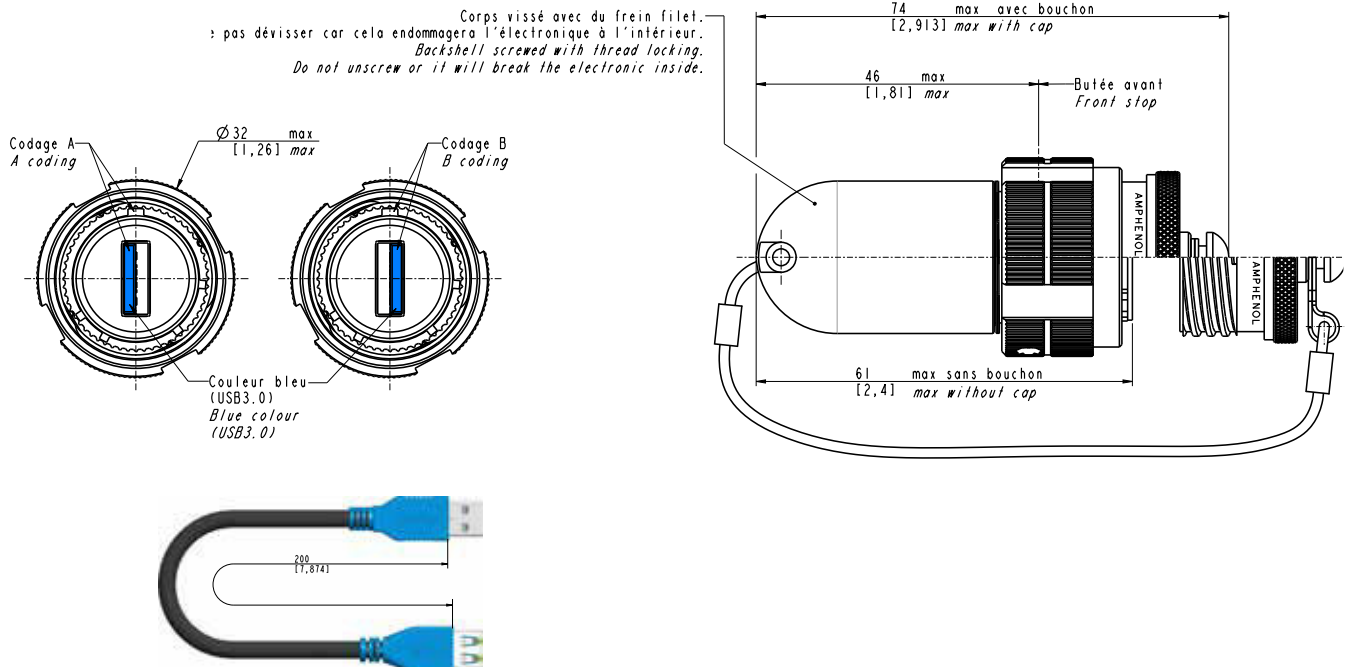
- Sealing: IP68 (when mated)
- Salt spray:
 - 48 h with nickel plating ✓
 - 500 h with olive drab cadmium
 - 500 h with black zinc nickel ✓
 - 500 h with tin-zinc ✓ **NEW**
- Vibrations: MIL-STD-810H method 514.8
- Temperature range: - 40°C / +85°C (MIL-STD-810F)
- Data transmission during vibration & temperature tests

✓: RoHS compliant

How to order : Please refer to page 130

Overall dimension

Part number type: **USB3FTV KEY X XXX X XXX APA UV**



Important note:

- Under request, we can provide you with electronic manufacturer details so you can check if their specific configuration will work with the electronic (please specify memory capacity).
- USB3FTV memory key has to be used with USBFTV receptacle (3.2 Gen1 and 2.0).

USB3FTV™ MEMORY KEY HIGH CAPACITY



Description

The USB3.2 Gen1 reinforced memory key allows you to carry sensitive information in total security. Its design, based on MIL-DTL-38999 series III can only be mated to our USB3FTV™ or USBFTV™ receptacles. The USB3.2 Gen1 reinforced memory key is available in high-capacity 512 Gb.

Main features

MAIN CHARACTERISTICS

- Type: USB3.2 Gen1 (capacities 512 GB)
- Only compatible with USB3FTV and USBFTV receptacle
- UBS-A
- Voltage: 5V DC - 500 mA max

SPECIFIC FEATURES

- Engineering control (Product change notice & end of life Policy)
- Flash technology : 3D-BiSC4 TLC
- Wear Leveling function
- MTBF: 4,000,000 hours

ENVIRONMENTAL PROTECTION

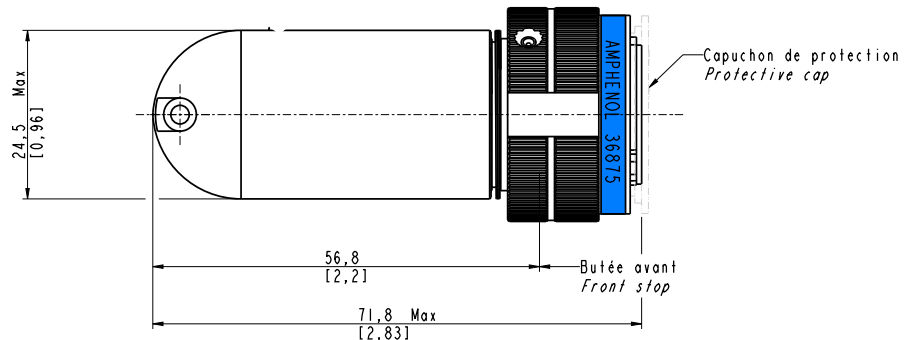
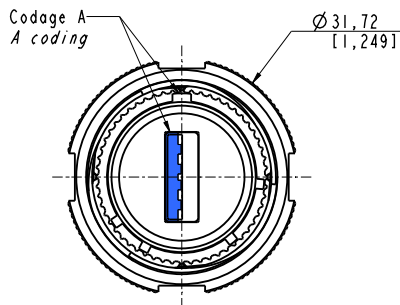
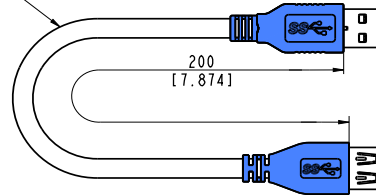
- Sealing: IP68 (when mated)
- Salt spray:
 - 48 h with nickel plating ✓
 - 500 h with olive drab cadmium
 - 500 h with black zinc nickel ✓
- Vibrations: MIL-STD-810H method 514.8
- Temperature range: - 40°C / +85°C (MIL-STD-810F)
- Data transmission during vibration & temperature tests

✓ : RoHS compliant

Overall dimension

Part number type: 36875 X

Cordon mâle / femelle USB3.0
Male / female USB3.0 cordset



Plating

Black zinc nickel ✓
36 875 ZN

Nickel ✓
36 875

Olive drab cadmium
36 875 G

✓ : RoHS compliant

Important note:

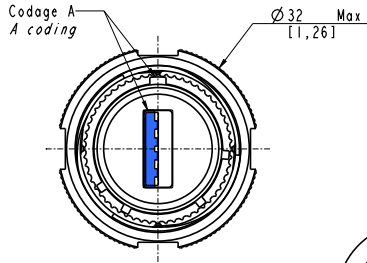
- Under request, we can provide you with electronic manufacturer details so you can check if their specific configuration will work with the electronic (please specify memory capacity).
- USB3FTV memory key has to be used with USBFTV receptacle (3.2 Gen1 and 2.0).

USB3FTV™ MEMORY KEY HIGH CAPACITY

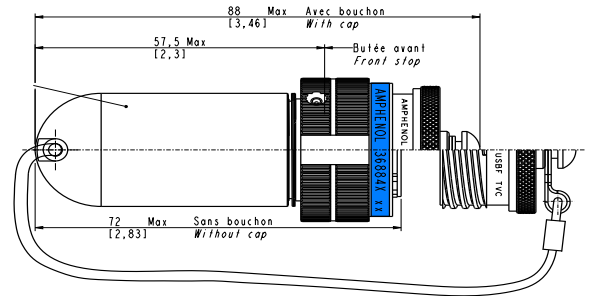
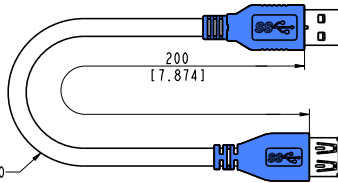


Overall dimension

Part number type: 36884 X



Cordon mâle / femelle USB3.0
Male / female USB3.0 cordset



Plating		
Black zinc nickel ✓	Nickel ✓	Olive drab cadmium
36 884 ZN	36 884 N	36 884 G

✓ : RoHS compliant

ROK - RUGGED OVAL KEY



Description

ROK, Rugged Oval Key is a reinforced memory key that allows you to save and carry your information in total security. This memory key cannot be damaged. It is fire proof and so durable that it can be run over by truck and remain undamaged. This rugged memory key is available in capacities from 16 to 256Gb, fast with a USB3.2 Gen1 transfer rate of 5 Gb/s and can be connected to any USB port.

Main features

MAIN CHARACTERISTICS

- Type: USB3.2 Gen1 (capacities 32, 64, 128 & 256 GB)
- Compatible with any USB port receptacle.
- Black painting ✓

DATA TRANSMISSION

- USB3.2 Gen1 max transfer rate : 5 Gb/s
- Compatible with USB2.0 transfer with 480Mb/s.

ENVIRONMENTAL PROTECTION

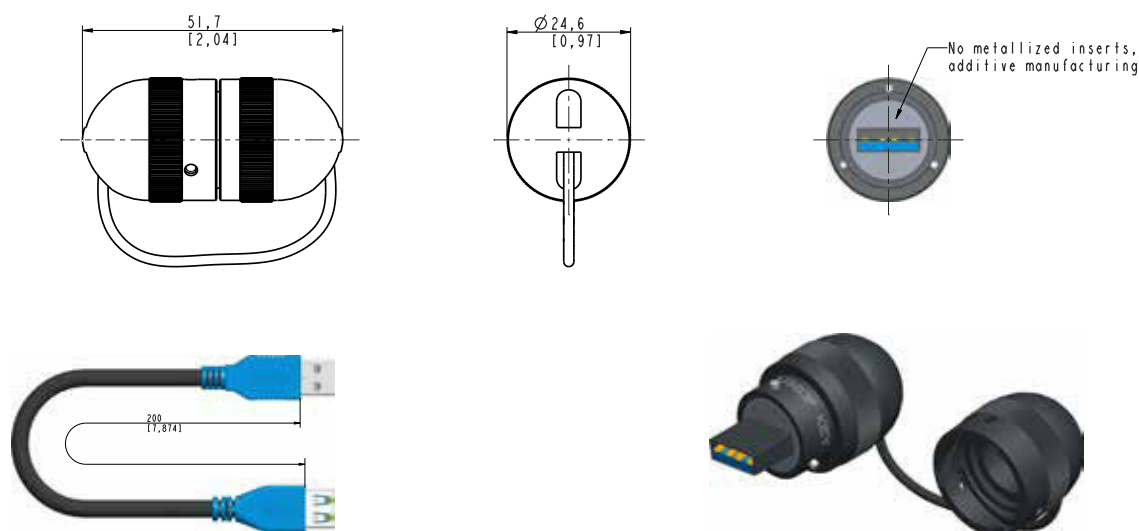
- Resistance against shocks, fire, vibrations.
- Sealed against fluids and dusts : IP68 mated.
- Storage temperature : - 10°C / +70°C.
- Operating temperature : 0°C / +35°C.

✓: RoHS compliant

How to order : Please refer to page 131

Overall dimension

Part number type: **USB3F KEY XXX X**



USB3FTV - USB3.2 GEN 1 AMPLIFIER



Description

The USB3.2 Gen1 protocol is limited to 3 meters. Our USB3.2 Gen1 amplifier allows you to extend the USB3 signal to 11 meters maximum.

We propose a standard range of amplifiers from 3 meters up to 8 meters (see How to order).

Using the USB3 amplifier selection guide below, please consider all your requirements and contact us.

Main features

MAIN CHARACTERISTICS

- An 8 meters USB3 amplifier can be connected with a 3 meters cordset to achieve a maximum length of 11 meters.
- USB3 cordset is provided by Amphenol.
- Shock, vibration and traction resistance
- Improved EMI protection
- Mate with our USB3FTV series (MIL-DTL-38999 series III type) with anti-decoupling device - Shell size 15

ENVIRONMENTAL PROTECTION

- Sealing (when mated): IP68 (temporary immersion)
- Salt spray:
 - 48 h - Aluminum shell with Nickel plating ✓
 - 500 h - Aluminum shell with Black zinc nickel plating ✓
 - 500 h - Aluminum shell with Olive drab cadmium plating
 - 500 h - Aluminum shell with Tin-zinc plating ✓ NEW
 - 500 h - Marine bronze shell ✓
- Humidity: 21 days, 43°C, 98% humidity
- Temperature range: - 40°C / + 85°C

✓: RoHS compliant

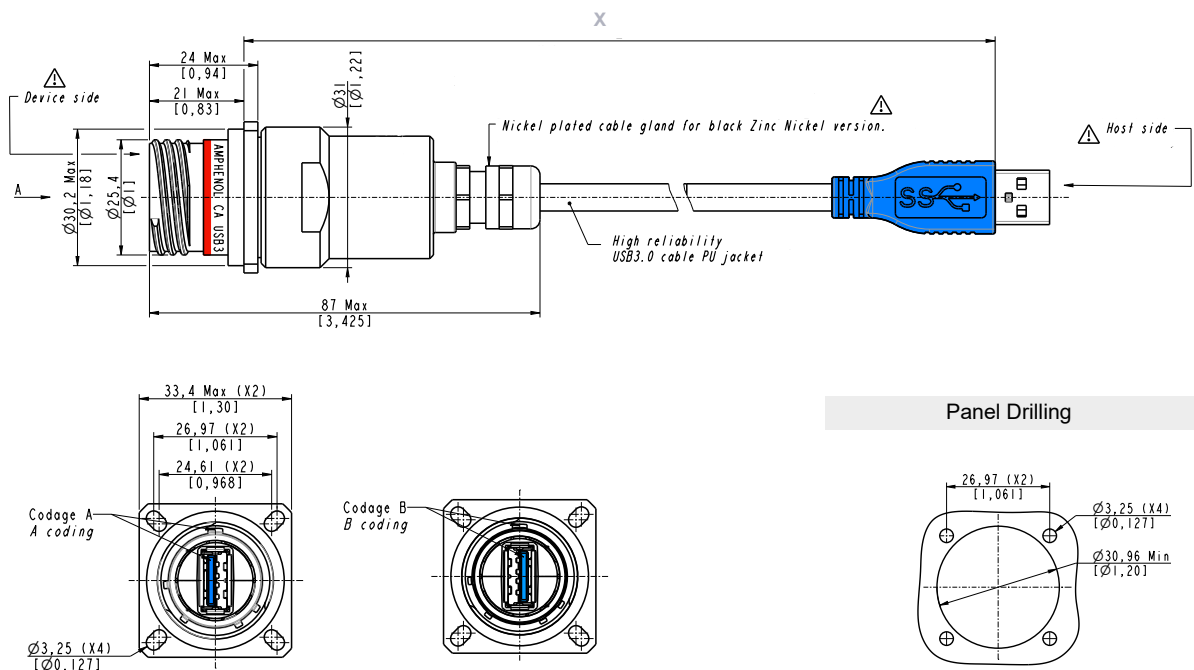
How to order : Please refer to page 132

Overall dimension

Square flange receptacle – Shell type 2 - 4 mounting holes

Part number type: **CA USB3 FTV 2 X X X X**

X: see the How to order to complete your part number



USB3FTV - USB3.2 GEN 1 AMPLIFIER

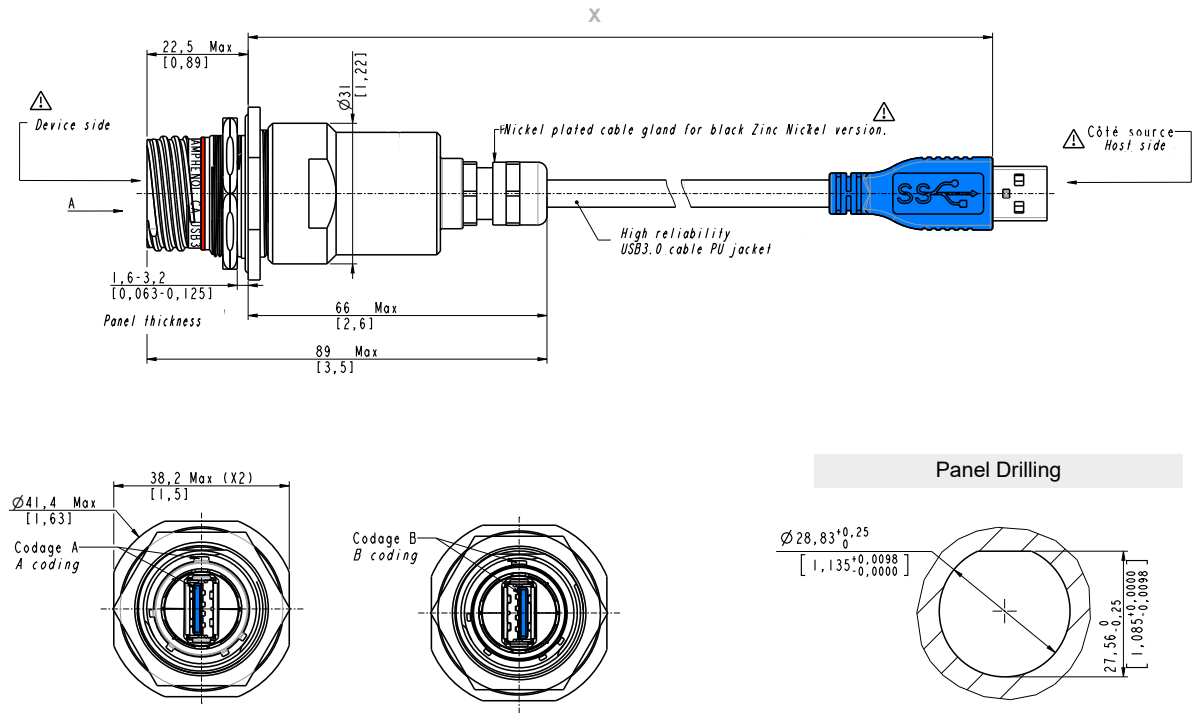


Overall dimension

Jam nut receptacle – Shell type 7 - Hexagonal nut mounting

Part number type: **CA USB3 FTV 7 X X XX**

X: see the How to order to complete your part number

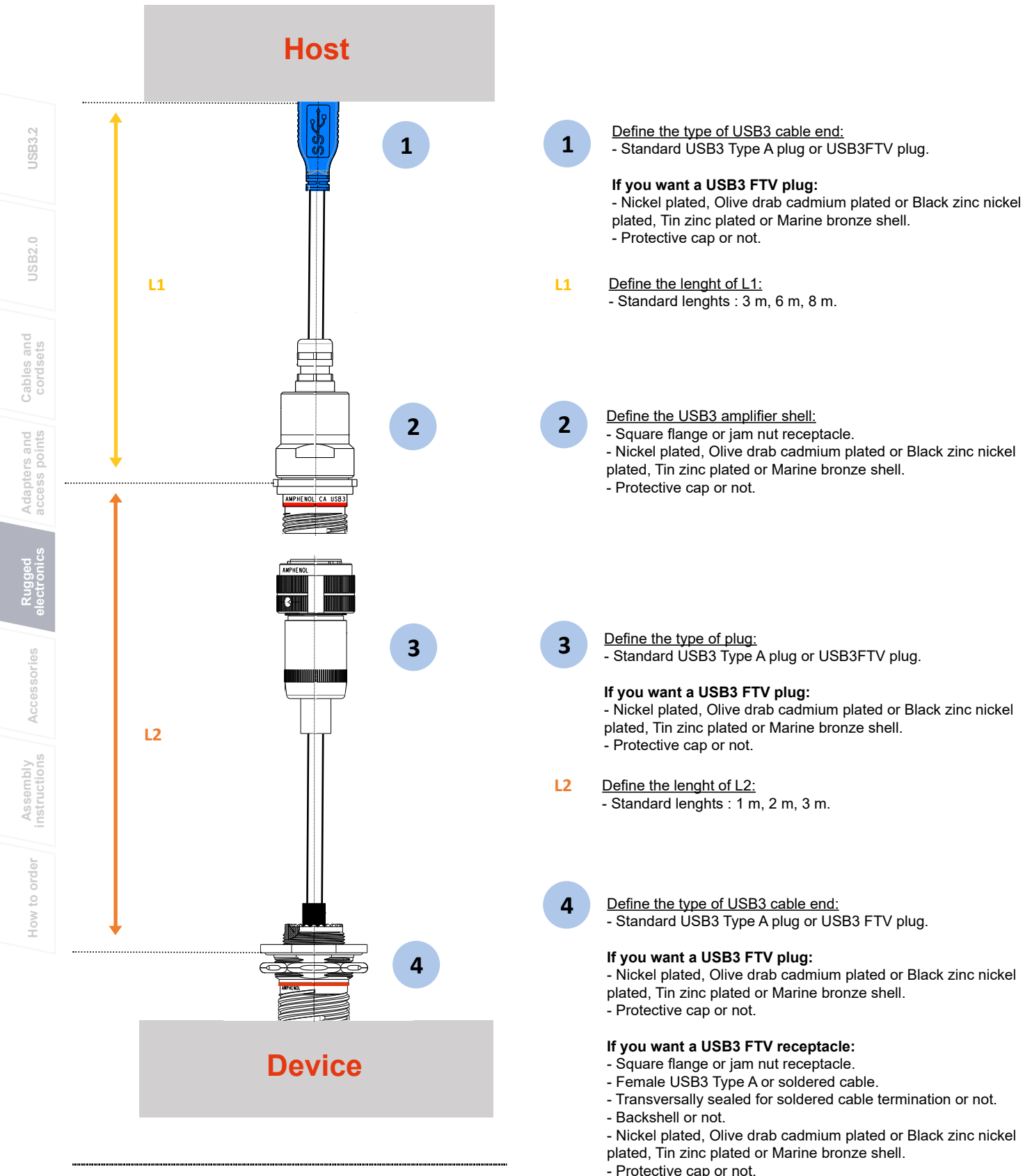


USB3FTV - USB3.2 GEN 1 AMPLIFIER



USB3 Amplifier selection guide

Define your own solution by selecting options in the scheme below



USBFTV - USB2.0 AMPLIFIER



Description

As the USB2.0 protocol is limited to 4.8 meters, the reinforced USB2.0 amplifier enables you to extend your USB signal to five times as much, almost 20 meters. This product is subject to custom design. With the help of the USB amplifier selection guide below, please consider all your requirements and reach out to us with your request.

Main features

MAIN CHARACTERISTICS

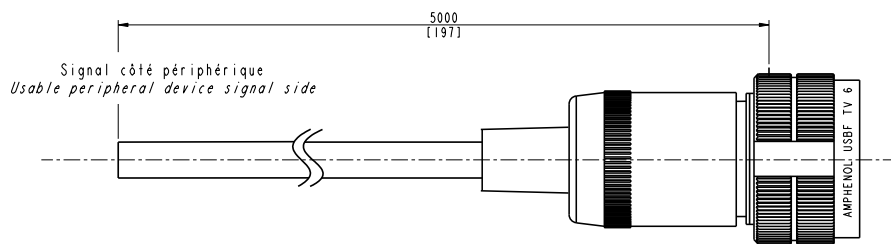
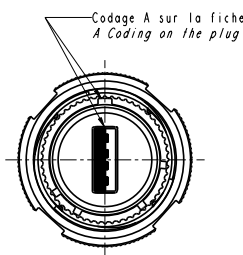
- Maximum 5 USB2.0 amplifier can be connected in order to reach 20 meters.
- USB2.0 cordset is provided by Amphenol.
- Sealed against fluids and dusts (IP68)
- Improved EMI protection
- Mate with our USBFTV™ series (MIL-DTL-38999 series III type) with anti-decoupling device - Shell size 15

ENVIRONMENTAL PROTECTION

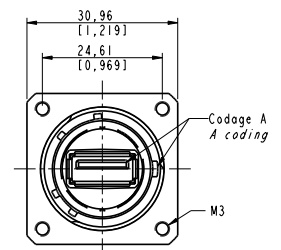
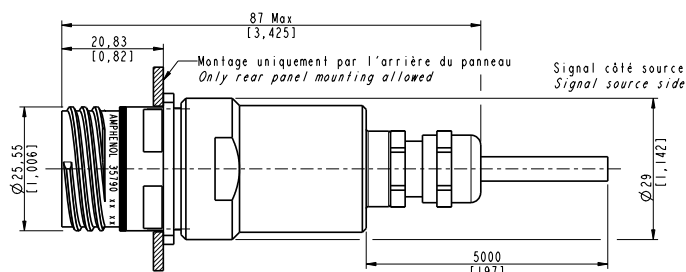
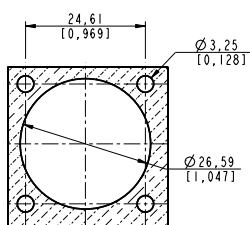
- Sealing (when mated): IP68 (temporary immersion)
- Salt spray:
 - 48 h with nickel plating ✓
 - 500 h with olive drab cadmium
 - 500 h with black zinc nickel ✓
- Humidity: 21 days, 43°C, 98% humidity
- Temperature range: - 40°C / +85°C

✓ : RoHS compliant

Example of configurations



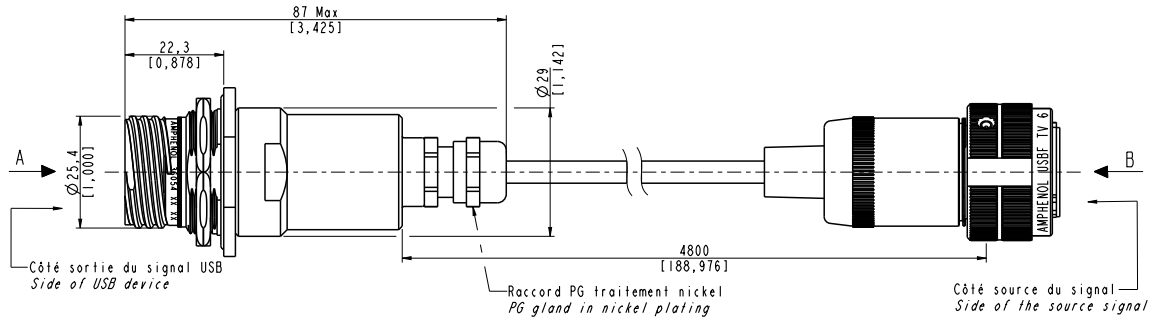
Panel drilling



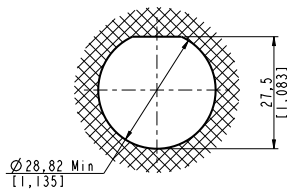
USBFTV - USB2.0 AMPLIFIER



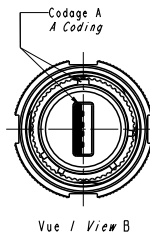
Example of configurations



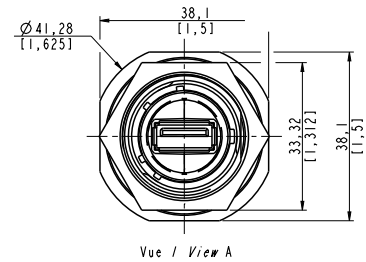
Panel drilling



Coding A



Coding B

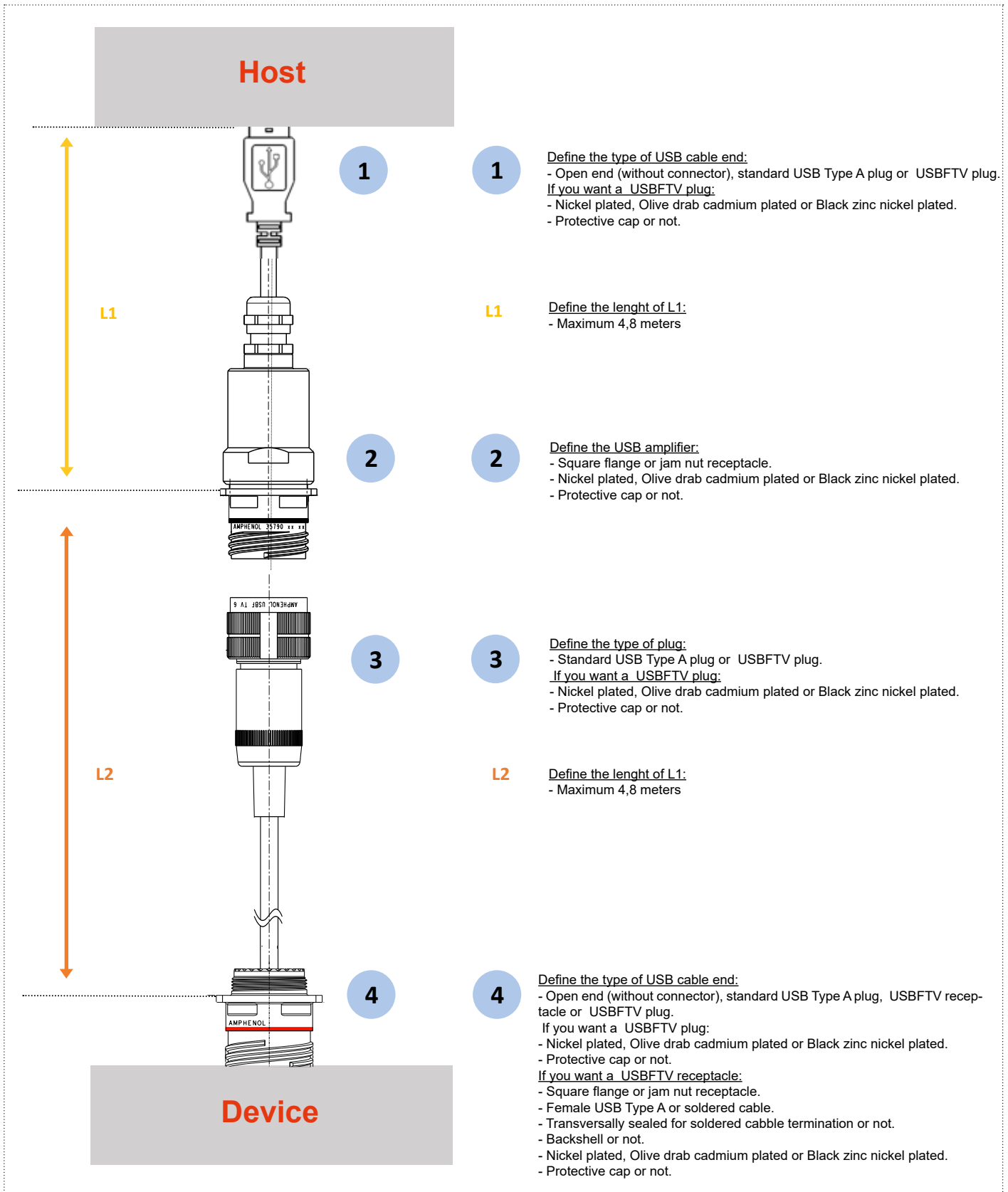


USBFTV - USB2.0 AMPLIFIER



USB amplifier selection guide

Define your own solution by selecting options in the scheme below



USB3.2

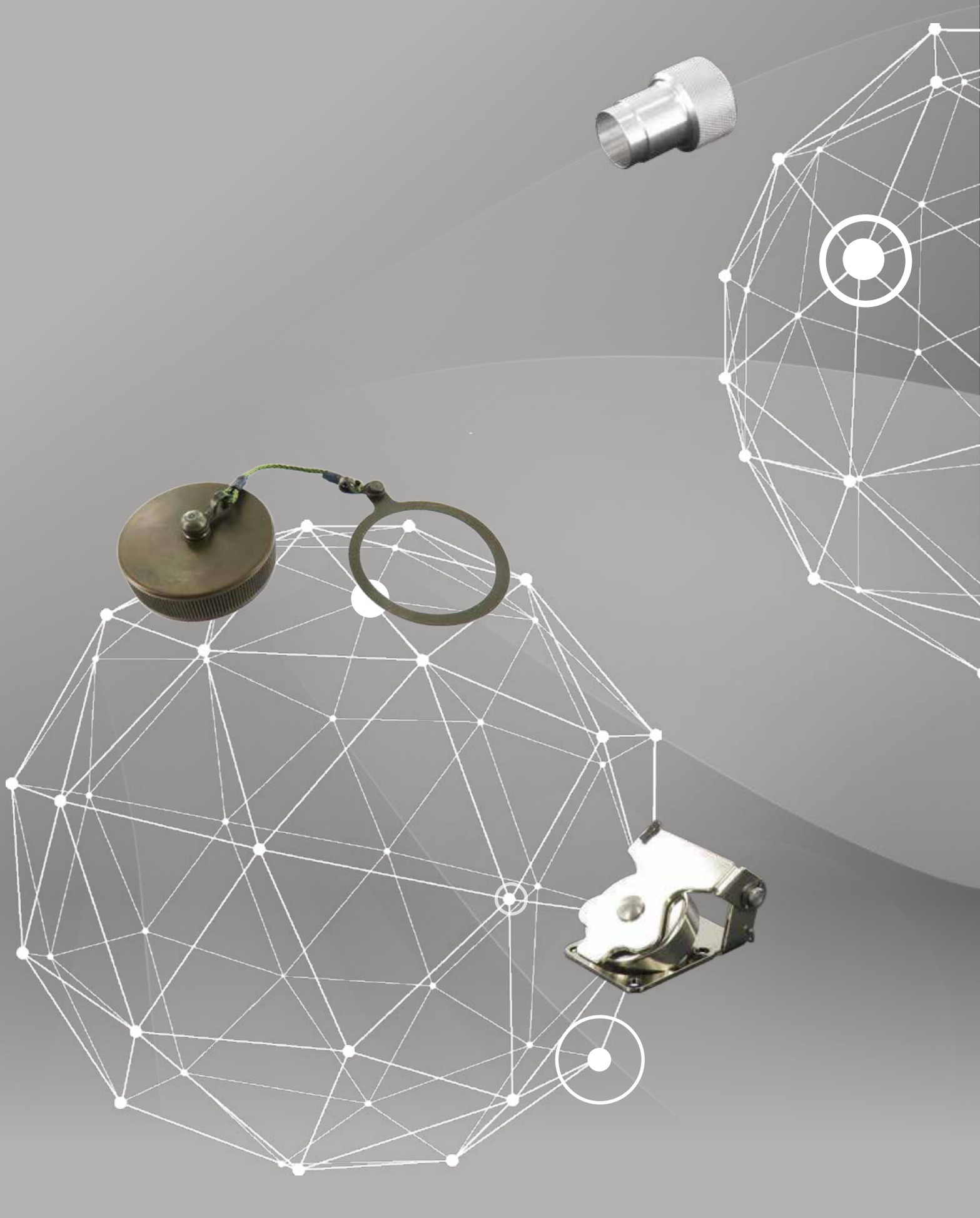
USB2.0

Cables and
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ACCESSORIES



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Panel gasket and tool	105

Compatibility table

	Connectors			
	USB3FTV™	USBFTV™	USBBFTV	USB3CFTV™
STANDARD PROTECTIVE CAP	USBFTV C	USBFTV C	USBFTV C	USBCFTV C
REDUCED FLANGE PROTECTIVE CAP	USBFTV C F057	USBFTV C F057	/	/
METALLIC SELF-CLOSING CAP	USBFTV SCC	USBFTV SCC	USBFTV SCC	TV SCC
PANEL GASKET	JE15	JE15	JE15	JE11
TOOL	USBF ODE	USBF ODE	/	/
REDUCED FLANGE TOOL	809684	/	/	809682

STANDARD PROTECTIVE CAP - USBFTV™

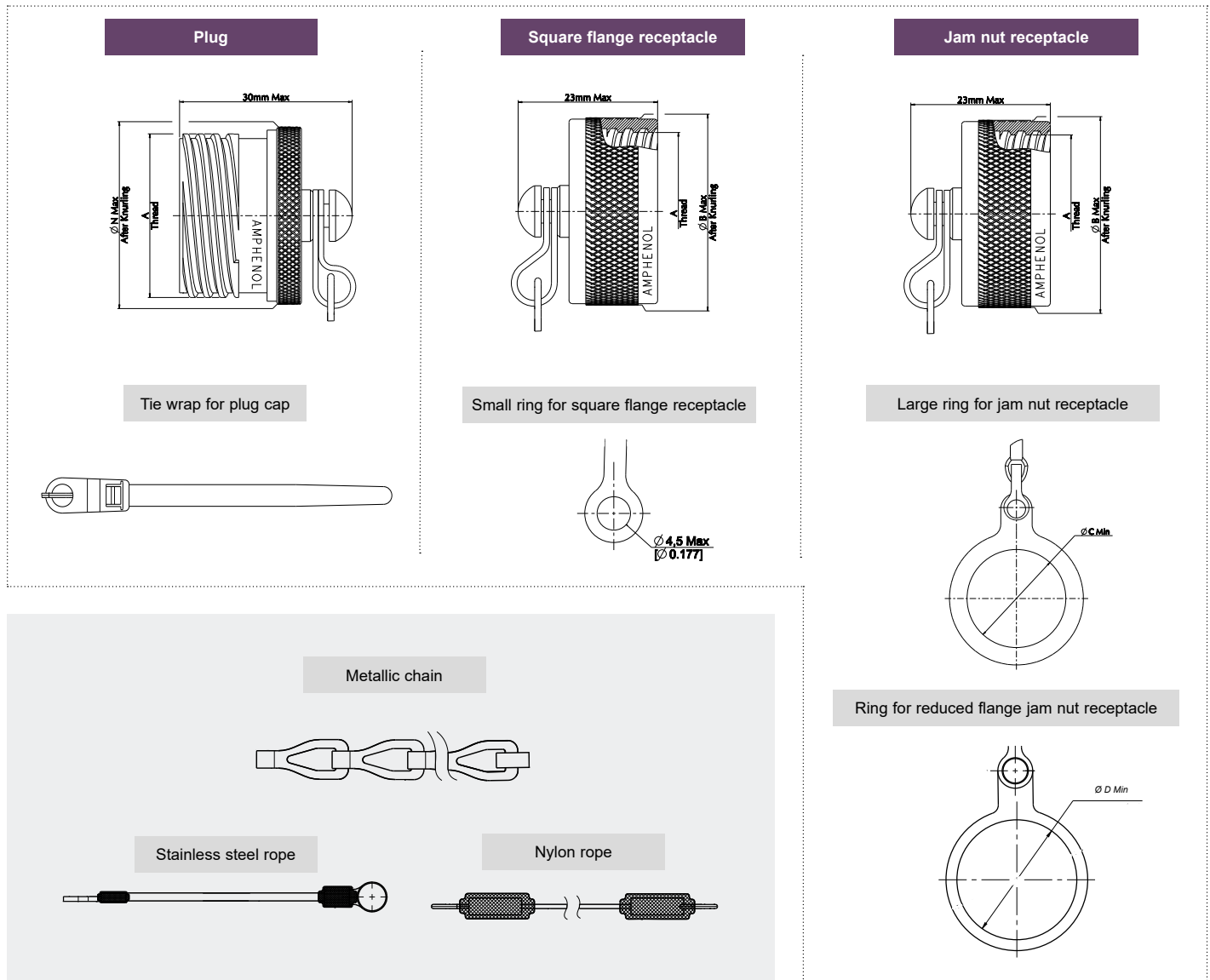


Standard protective cap

This standard protective cap derivate from MIL-DTL-38999 series III provide you a permanent sealing for plugs or receptacles.

How to order : Please refer to page 133 & 134

Overall dimension



Shell size	Lanyard lenght		A Thread Class 2A (External) Class 2B (Internal) (inch)	ØB ^(+0.3)	ØN ^(-0.3)	ØC _{MIN}	ØD _{MIN}
	Plug	Receptacles					
11	160±5	127 (+13,-7)	.7500 0.1P-0.3L-TS	22.60	20.50	21.97	20.70
15			1.0000 0.1P-0.3L-TS	28.90	27.40	29.92	27.70

✓: RoHS compliant

SILICONE PROTECTIVE CAP - TVUCOM-USB3.2

Silicone protective cap

Silicone protective caps against dust and water.

Main features

- Compatible with Jam nut and Square flange receptacles
- IP67 (1m, 1 hour sealing)
- Protection against dust and water
- Silicone 200°C
- Nylon cord
- No noise (rubber material)

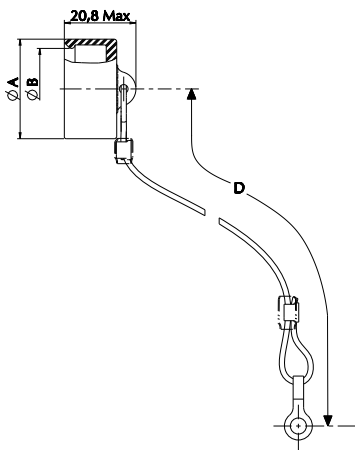


How to order : Please refer to page 135

Overall dimensions

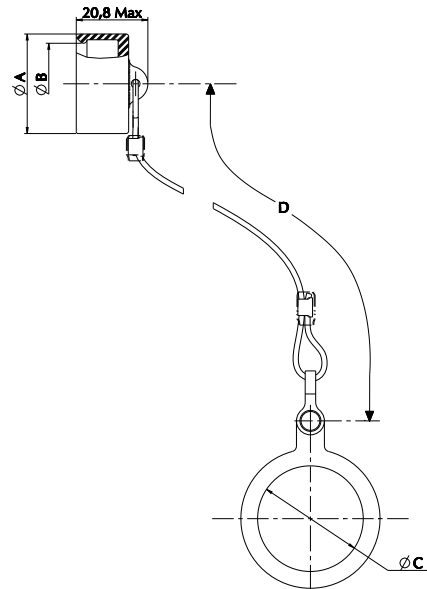
For Square flange receptacle

Part number : **RC00N11**



For Jam nut receptacle

Part number : **RC07N11**



Size	Ø C +0,25 0	Ø A Max	Ø BMax	D Max
11	22,63	22,55	17,2	140

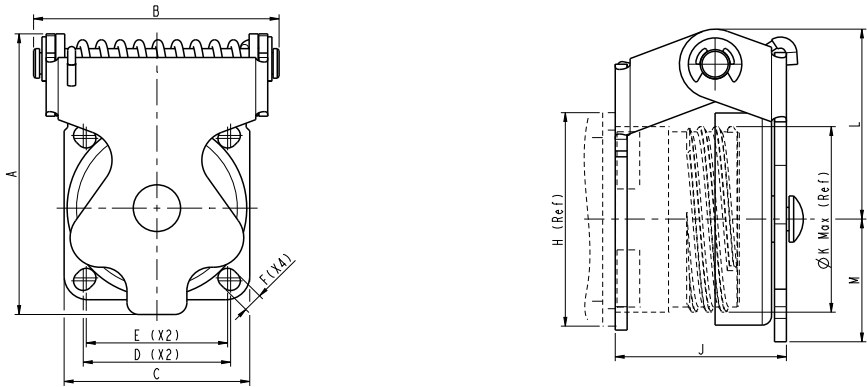
SELF-CLOSING CAP - USBFTV™



Metallic Self-Closing cap

With the metallic self-closing cap, your standard receptacles are protected with an IP67 and EMI protection with an integrated self-closing function.

Overall dimension



Size	A	B	C	D	E	F	H	J	ØK _{MAX}	L	M	N	ØP _{MIN}	ØQ + 0.13
11	43.0	27.2	27.2	20.62	18.26	3.25	26.19	31.2	19.05	27.0	16.0	20.62	15.88	3.25
15	47.5	41.0	31.0	24.61	23.61		30.96	30.9	25.4	29.5	18.0	24.61	23.01	

Size		Plating			
		Black coating ✓	Nickel ✓	Olive drab cadmium	Black Zinc Nickel ✓
11	Jam nut receptacle	/	TV 07 SCC 11 F	TV 07 SCC 11 W	TV 07 SCC 11 ZN
	Square flange receptacle	/	TV SCC 11 F	TV SCC 11 W	TV SCC 11 ZN
15	Jam nut receptacle	USBFTV 7 SCC B	USBFTV 7 SCC N	USBFTV 7 SCC G	USBFTV 7 SCC ZN
	Square flange receptacle	USBFTV SCC B	USBFTV SCC N	USBFTV SCC G	USBFTV SCC ZN

✓: RoHS compliant

Important note:
- Metallic self-closing cap must be used with a reinforced plug

Caps

IP68 metallic cap

X to be replaced by

B for Black electrophoresis plating

G for Olive drab cadmium plating

U for Unplated brass

joint torique
O-ring seal

2 férules métalliques serties
2 crimped metallic ferrules

cordelle nylon noire
black nylon cord

31057 **X**

31139 **X**

Ø4,1
[0,161]

Ø12
[0,48]

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

Cap in neoprene
Part number: **31092**

A black neoprene cap with a long, thin handle and a circular loop at the end. The cap is shown against a white background.

Cap in neoprene
Part number: **31093**

A black neoprene cap with a long, thin, flexible strap and a small loop at the end. The cap is shown against a white background.[illegible]

Crimp Pin (10 pcs)
Part number: **31537**

Crimp Socket (10 pcs)
Part number: 31074

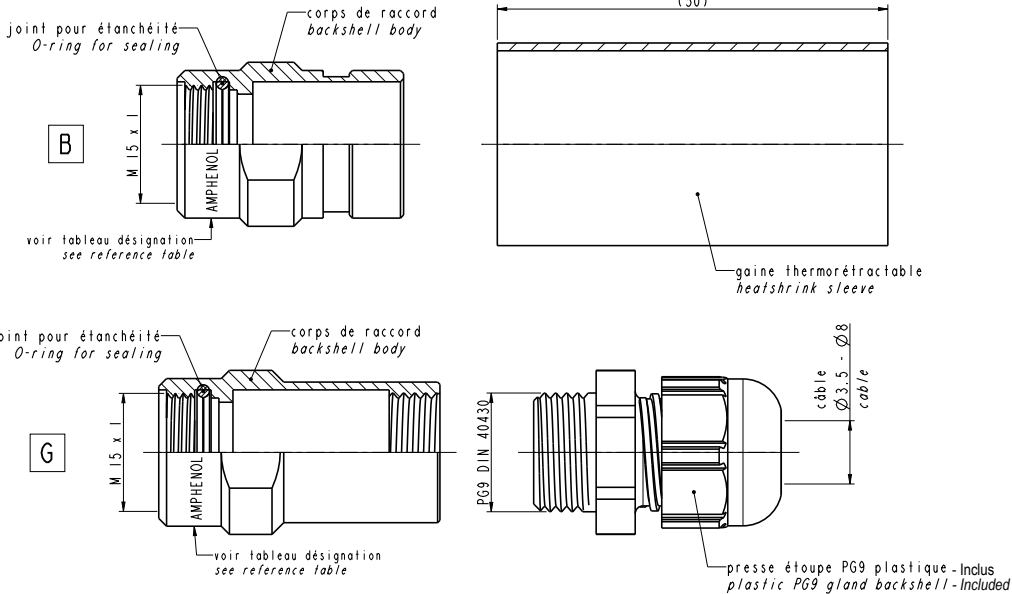
ACCESSORIES - TVUCOM-USB3.2



Accessories

Special Backshells

Part number type: **TV UCOM X X**



Spares

Crimp Pin (10 pcs)
Part number: **31537**



Part number: JE11
(thickness: 0,8 mm [.031])



Crimp Socket (10 pcs)
Part number: **31074**



Panel Gasket for TVP00

PANEL GASKET AND TOOL

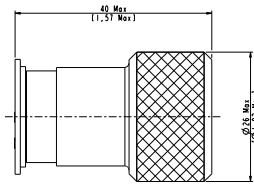


Panel gasket for square flange receptacle

Part number	Thickness (mm)	Color	Picture
JE15	0.6	Blue	
JE11 (USB3CFTV)			

Tools - USBFTV

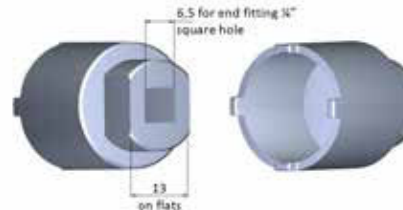
Part number: **USBF ODE**



Important note:

- USBF ODE is used to remove the module of the receptacle. Insert the slot face part of the USBF ODE part into the front of the receptacle and push.
- For more details, please refer to "Assembly instructions" page 80 to 82.

Part number: **809684**



Important note:

- This tool is used to tighten the castle nut of the reduced flange receptacle.
- Insert the four teeth face of the tool into the castle nut and tighten at the recommended force.
- For more details, please refer to "Assembly instructions" page 80 to 82.

Tools - µCom-USB3.2



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



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



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

Other tools:

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

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

Tools - TVµCom-USB3.2



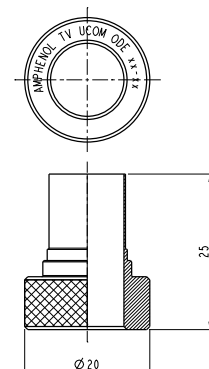
- Insertion tool for crimp contacts
Part number: **31056**



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

Removal tool

Part number: **TV UCOM ODE**



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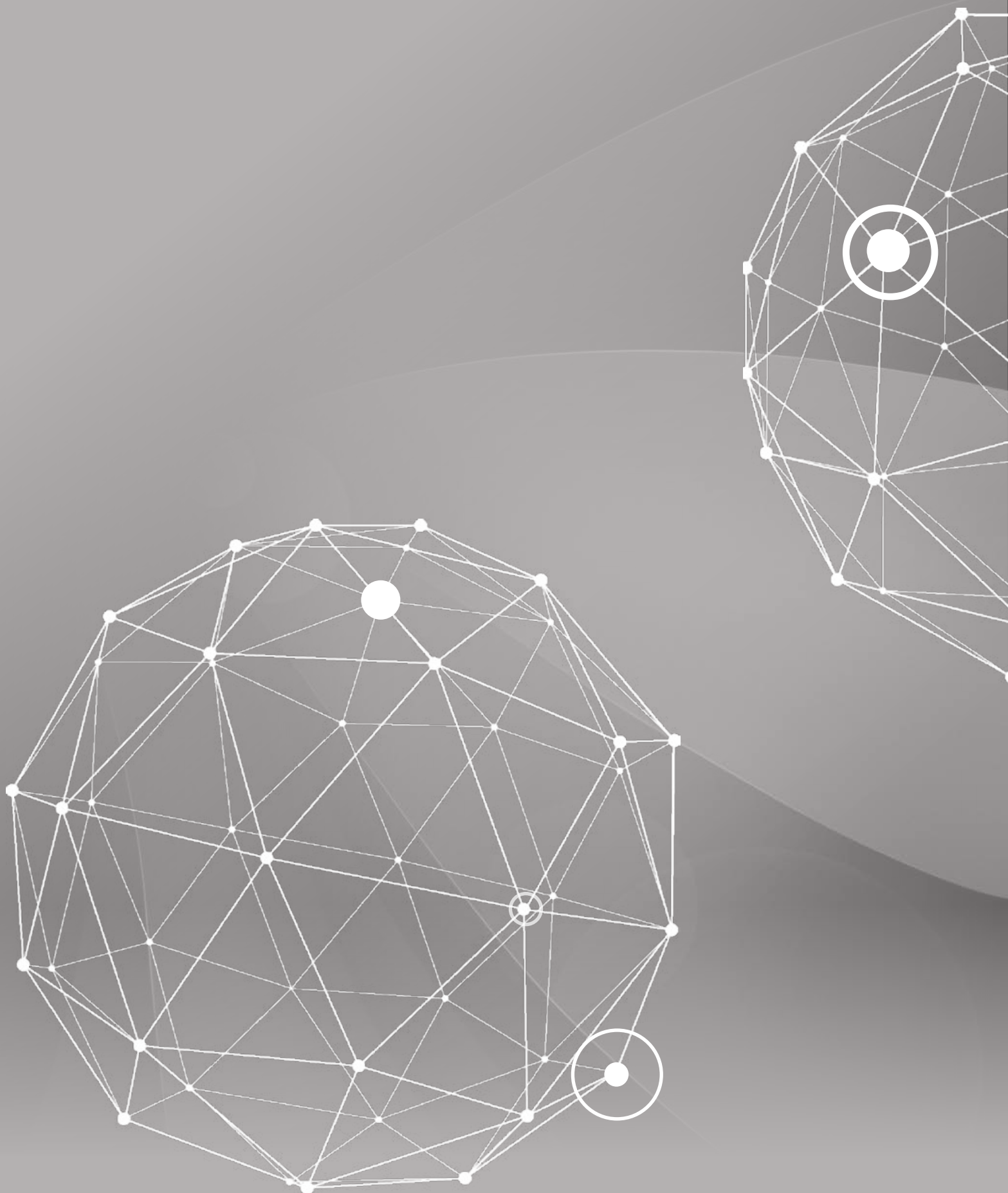
Rugged electronics

Adapters and access points

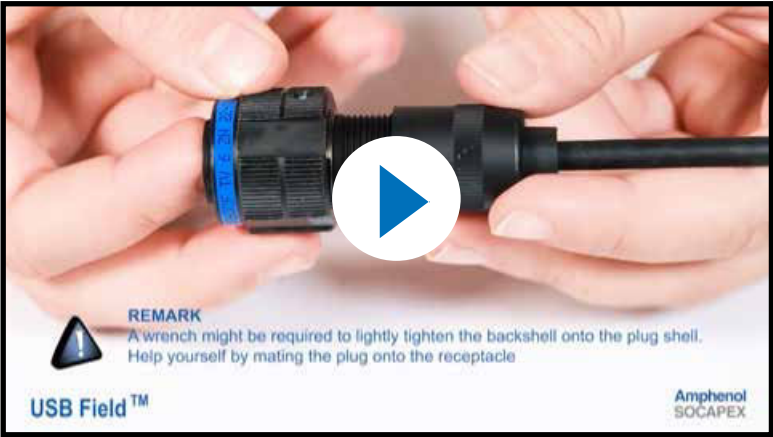
Cables and cordsets

USB2.0

USB3.0



ASSEMBLY INSTRUCTIONS



USB Field Assembly



USB Type-C Assembly



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USB2.0

Cables and
cordsets

Adapters and
access points

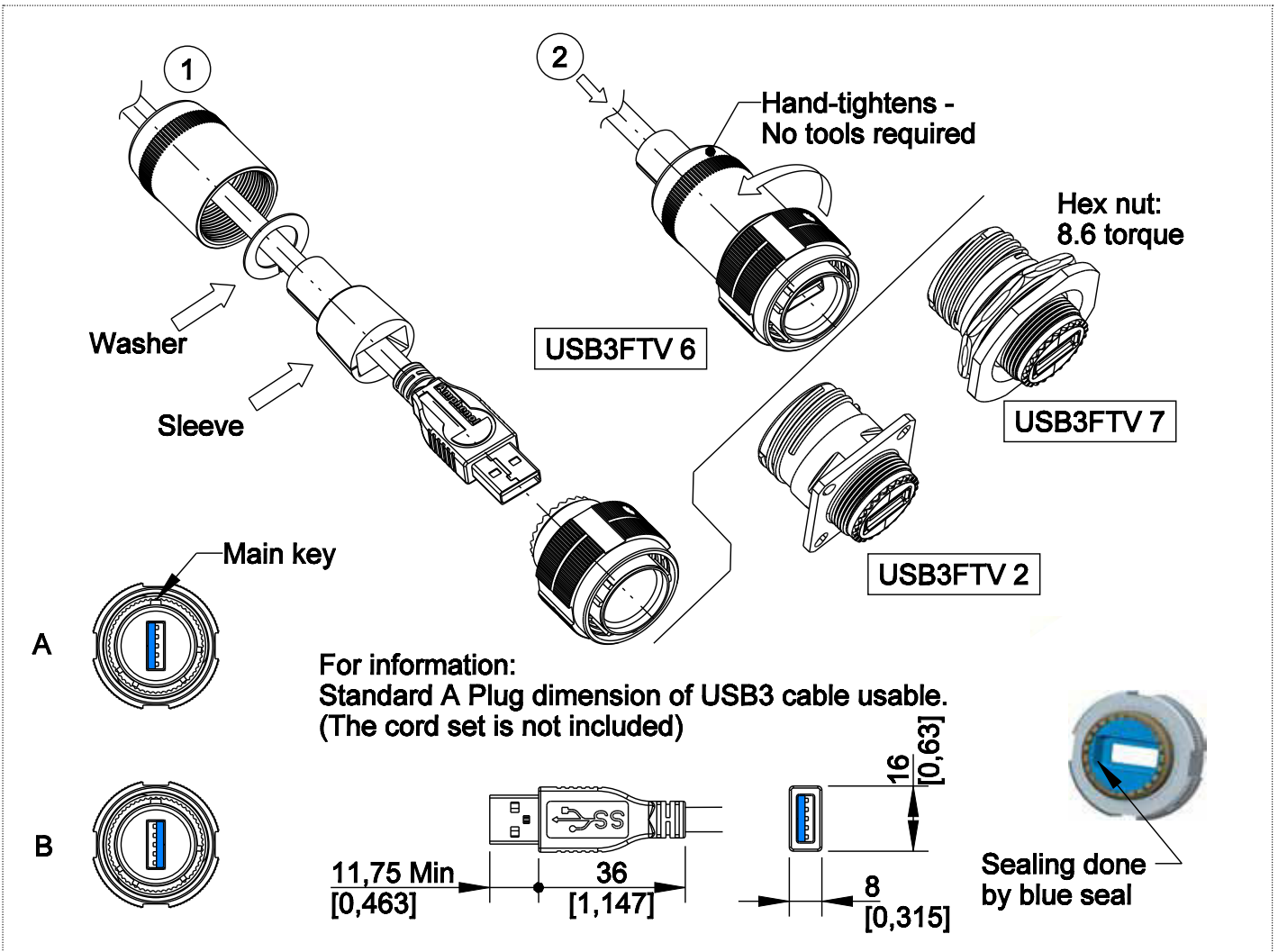
Rugged
electronics

Accessories

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ASSEMBLY INSTRUCTION - USB3FTV™



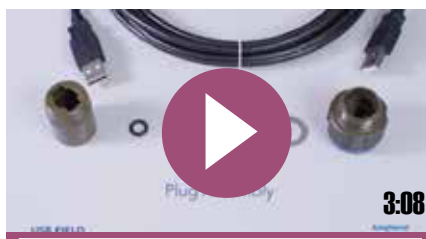
Notes:

- Can be assemble with all standard USB cordset.
- No tool required.

Recommend Torque value:

		Body	Gland	Hex-nut
Plug	USB3FTV 6	/	Hand-tightens - No tool required	/
	USB3FTV 2 PE	/	Hand-tightens - No tool required	/
Receptacle	USB3FTV 2 PEM	7.5 Nm	2.5 to 3 Nm max	/
	USB3FTV 7	/	/	86Nm
	USB3FTV 7 PE	/	Hand-tightens - No tool required	86Nm
	USB3FTV 7 PEM	7.5 Nm	2.5 to 3 Nm max	86Nm

Assembly video

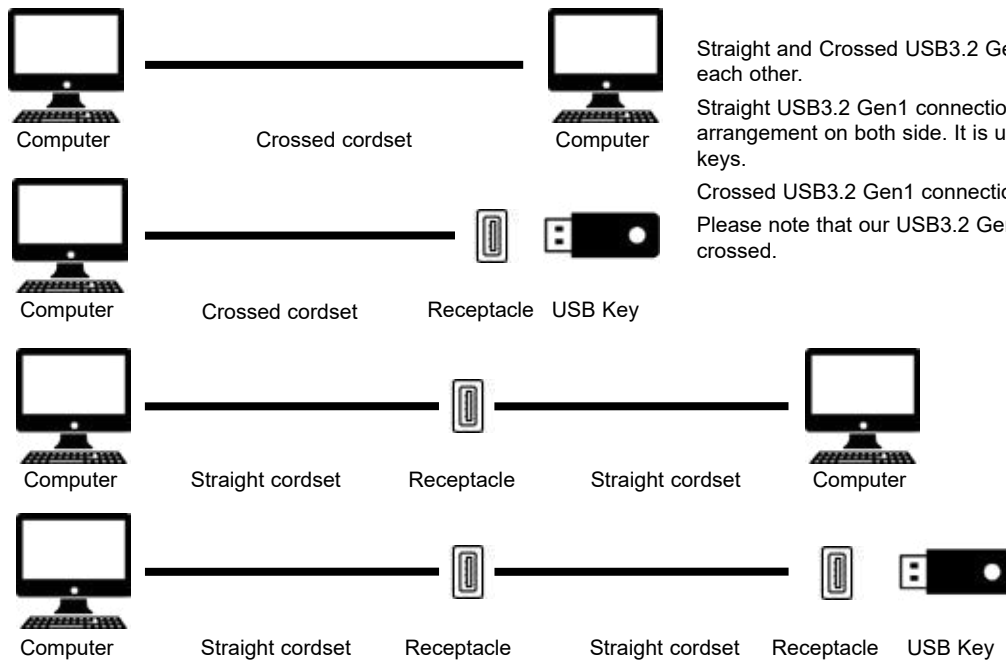


See our assembly video on youtube :
www.youtube.com/AmphenolSocapex

- Amphenol USBFIELD assembly - Rugged USB connector

ASSEMBLY INSTRUCTION - USB3FTV™

Crossed or straight



Straight and Crossed USB3.2 Gen1 cables are wired differently from each other.

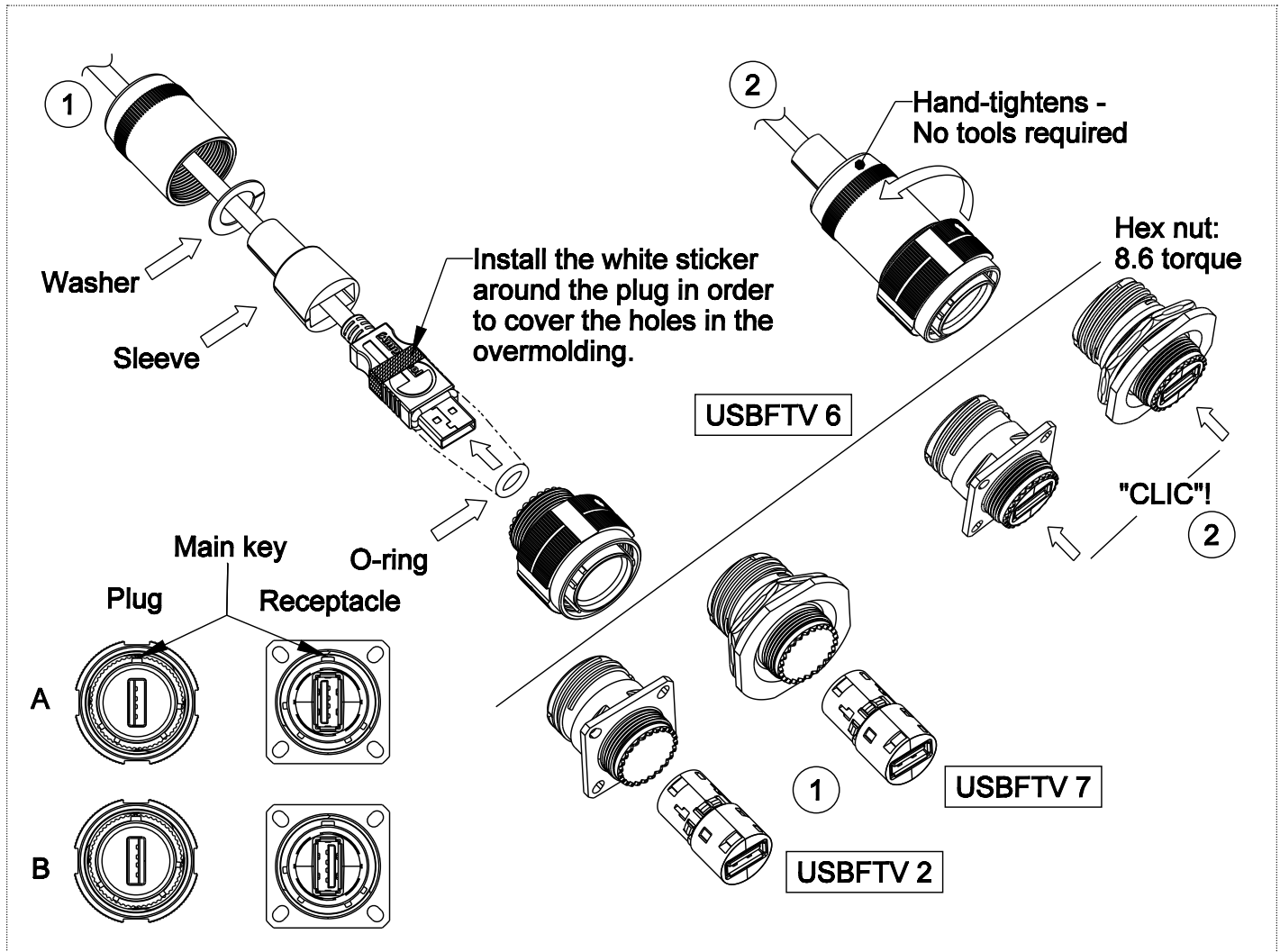
Straight USB3.2 Gen1 connection has the exact same wire arrangement on both side. It is used to connect computers to USB keys.

Crossed USB3.2 Gen1 connection is used to connect two computers.

Please note that our USB3.2 Gen1 receptacle are, by conception, crossed.

 : Amphenol receptacle is always crossed.

ASSEMBLY INSTRUCTION - USBFTV™ AND USBBFTV



Notes:

- Can be assembled with all standard USB cordset.
- No tool required.

Recommend Torque value:

		Body	Gland	Hex-nut
Plug	USBFTV 6	/	Hand-tightens - No tool required	/
	USBFTV 2 PE	/	Hand-tightens - No tool required	/
Receptacle	USBFTV 2 PEM	7.5 Nm	2.5 to 3 Nm max	/
	USBFTV 7	/	/	8.6 Nm
	USBFTV 7 PE	/	Hand-tightens - No tool required	8.6 Nm
	USBFTV 7 PEM	7.5 Nm	2.5 to 3 Nm max	8.6 Nm

Assembly video



See our assembly video on Youtube :
www.youtube.com/AmphenolSocapex

- Amphenol USBFIELD assembly - Rugged USB connector

NOTES

USB3.2

USB2.0

Cables and
cordsets

Adapters and
access points

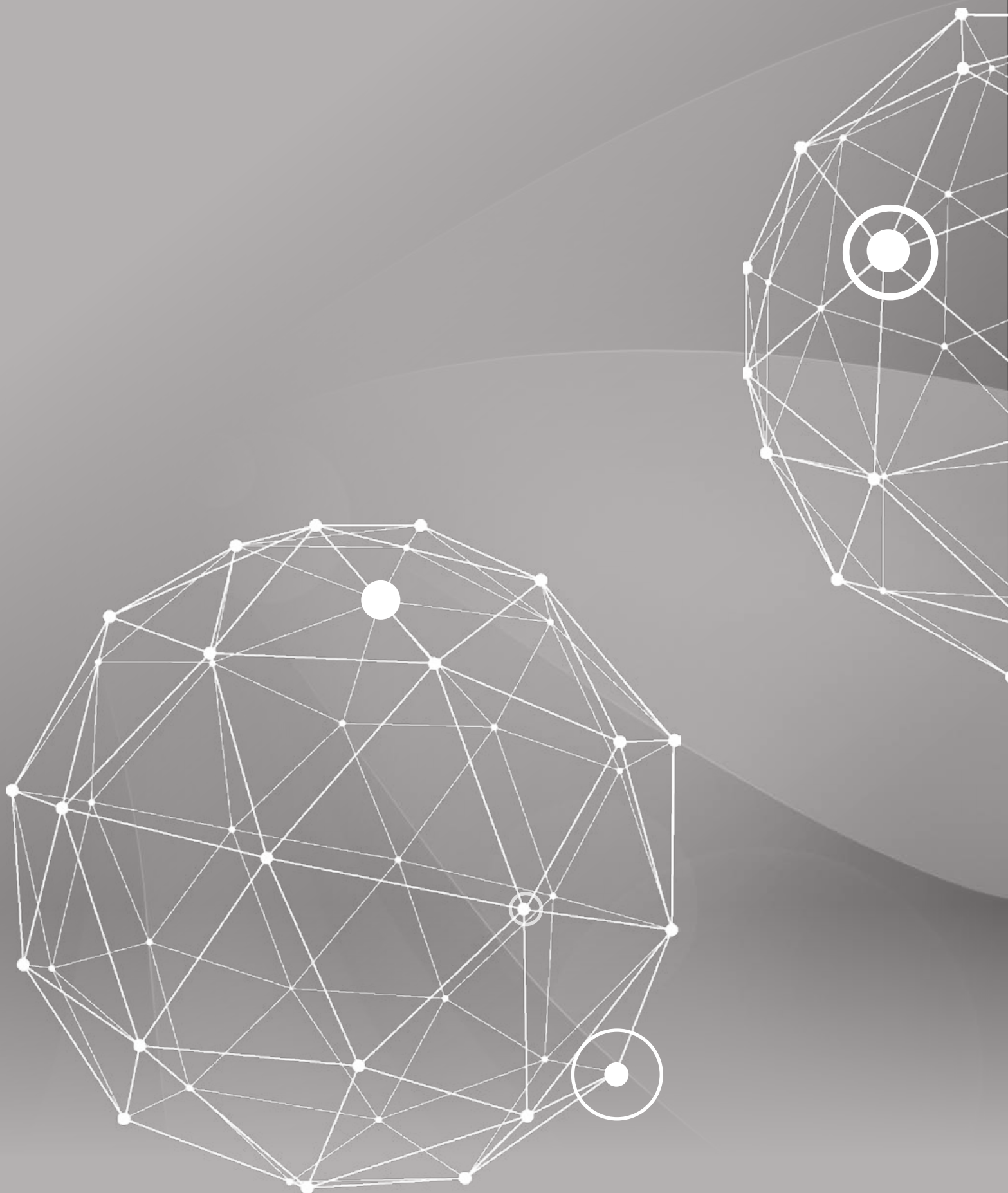
Rugged
electronics

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Notes section with horizontal lines for writing.



HOW TO ORDER

HOW TO ORDER

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HOW TO ORDER - USB3CFTV™ PLUG AND RECEPTACLE

1.	2.	3.	4.	5.	6.
Series	Shell type	USB output	Material and platings	Cordset length	Deviation
USB3CFTV	7		G	100	F312

1. Series

USB3CFTV USB3CFTV series

2. Shell type

6	Plug
2	Square flange receptacle
7	Jam nut receptacle

3. USB output (only for receptacle)

2	Male USB type-C termination
Blank	Cordset or PC tail contacts

4. Material and platings

	Shell material	Shell plating
G	Aluminum	Olive drab cadmium
N		Nickel ✓
ZN		Black zinc nickel ✓
TZ		Tin Zinc ✓ 
BZ	Bronze ✓	
S	Stainless steel	Passivated ✓

5. Cordset length (for receptacle with cordset only)

015	0,15 m [5.9 inches]
030	0,30 m [11.81 inches]
050	0,50 m [19.69 inches]
100	1,0 m [39.37 inches]

6. Deviation (only for receptacle)

F459	Stand-off receptacle for PCB with PC tail contacts
F312	Reduced flange receptacle
F311	Reduced flange receptacle with safety castle nut
F059	Stand-off Reduced flange receptacle for PCB with PC tail contacts
F058	Stand-off Reduces flange receptacle with safety castle nut

✓ RoHS compliant

Examples :

Part number	Description
USB3CFTV6ZN	USB3CFTV serie, plug, aluminum shell with black zinc nickel plating
USB3CFTV72BZF312	USB3CFTV serie, jam nut receptacle with reduced flange, male USB type-C termination, bronze shell
USB3CFTV2G100	USB3CFTV serie, square flange receptacle, aluminium shell with olive drab cadmium plating, 1-meter cordset with USB-C male plug
USB3CFTV7NF059	USB3CFTV serie, jam nut receptacle, aluminium shell with nickel plating, stand-off reduced flange receptacle for PCB.

HOW TO ORDER - USB3FTV™ PLUG AND RECEPTACLE

1.

2.

3.

4.

5.

6.

7.

Series	Shell type	Coding (for plug with cordset only)	Cordset lenght (for plug with cordset only)	Backshell (for receptacle only)	Shells material & finish	Type of cable (for plug with cordset only)
USB3FTV	6	A	03		G	CROS

1. Series

USB3FTV

USB3.2 Gen1 Field Series (USB-A)

2. Shell type

6

Plug

2

Square flange receptacle

7

Jam nut receptacle

3. Coding (avoid for plug without cordset)

A

Coding A

B

Coding B

4. Cordset lenght (for plug with cordset only)

03

0,3 m [11.81 inches]

05

0,5 m [19.68 inches]

10

1,0 m [39.37 inches]

15

1,5 m [59.05 inches]

20

2,0 m [78.74 inches]

25

2,5 m [98.43 inches]

30

3,0 m [118.11 inches]

5. Backshell (for receptacle only)

Without backshell

PE

Metal backshell

6. Shell material and finish

G

Olive Drab Cadmium plating

N

Aluminium shell

Nickel plating ✓

ZN

Aluminium shell

Black Zinc Nickel plating ✓

TZ

Aluminium shell

Tin Zinc ✓ 

BZ

Marine bronze shell ✓

S

Stainless steel

Passivated ✓

7. Type of cable (for plug with cordset only)

CROS

Crossed USB3.0 cable - USB-A plug

STR

Straight USB3.0 cable - USB-A plug

OPEN

Open USB3.0 cable without plug at the end

✓ : RoHS compliant

Examples :

Part number	Description
USB3FTV6A10GOPEN	USB3FTV, plug, coding A, olive drab cadmium plating, 1,0m cordset with open end
USB3FTV2APEG	USB3FTV, square flange receptacle with metal backshell, coding A, olive drab cadmium plating
USB3FTV7AZN	USB3FTV, jam nut receptacle, coding A, black zinc nickel plating

HOW TO ORDER - USB3FTV™ - TRANSVERSALLY SEALED AND HERMETIC RECEPTACLE

1.	2.	3.	4.	5.	6.
Series	Shell type	Coding	Cordset lenght	Shells material & finish	Type of cable
USB3FTV	2S	A	03	G	ACROS

1. Series	
USB3FTV	USB3.2 Gen1 Field Series (USB-A)

2. Shell type		
2S	Square flange receptacle	Transversally sealed
2H		Hermetic
7S	Jam nut receptacle	Transversally sealed
7H		Hermetic

3. Coding	
A	Coding A
B	Coding B

4. Cordset lenght	
03	0,3 m [11.81 inches]
05	0,5 m [19.68 inches]
10	1,0 m [39.37 inches]
15	1,5 m [59.05 inches]
20	2,0 m [78.74 inches]
25	2,5 m [98.43 inches]
30	3,0 m [118.11 inches]

5. Shell material and finish		
G	Aluminium shell	Olive Drab Cadmium plating
N		Nickel plating ✓
ZN		Black Zinc Nickel plating ✓
TZ		Tin Zinc ✓ 
BZ	Marine bronze shell ✓	
S	Stainless steel	Passivated ✓

6. Type of cable	
ACROS	Crossed USB3.0 cable - USB-A plug
ASTR	Straight USB3.0 cable - USB-A plug
OPEN	Open USB3.0 cable without plug at the end

✓ : RoHS compliant

Examples :

Part number	Description
USB3FTV2SA03ZNOPEN	USB3FTV, transversally sealed square flange receptacle, coding A, black zinc nickel plating, 0,3m cable with open end
USB3FTV7HA05GASTR	USB3FTV, hermetic jam nut receptacle, coding A, olive drab cadmium plating, 0,5m straight USB3.0 cable with USB-A plug at the end
USB3FTV2HA15NACROS	USB3FTV, hermetic square flange receptacle, coding A, nickel plating, 1,5m crossed USB3.0 cable with USB-A plug at the end

HOW TO ORDER - USB3FTV™ - VG96949

1.

2.

3.

4.

5.

Series	Shell type	Shell size	Coding	Shell material & finish
VG96949-03	A	15	A	HI

1. Series

VG96949-03

VG96949-03 standard

4. Coding

N

Coding N

2. Shell type

C

Plug

A

Square flange receptacle

B

Jam nut receptacle

5. Shell material and finish

A

Olive Drab Cadmium plating

HI

Aluminium shell

Black Zinc Nickel plating ✓

J

Tin Zinc plating ✓

NEW

B

Marine bronze shell ✓

✓ : RoHS compliant

Examples :

Part number	Description
VG96949-03C15NJ	VG96949-03 USB3FTV, plug, coding N, tin zinc plating
VG96949-03A15NA	VG96949-03 USB3FTV, square flange receptacle , coding N, olive drab cadmium plating
VG96949-03B15NB	VG96949-03 USB3FTV, jam nut receptacle, coding N, marine bronze shell

HOW TO ORDER - UCOM-USB3.2 & TVUCOM-USB3.2

How to order UCOM- USB3.2 Gen1

1.	2.	3.	4.	5.
Series	Shell type	Contact type (avoid for RP shell type)	Shells material and finish	Backshell type (avoid for receptacle)
UCOM-USB3	PT	C	B	B

1. Series
UCOM-USB3 µcom for USB3.0

2. Shells type
PT Plug Thread version
PP Push-pull version
L In line receptacle
R Panel mount receptacle
RP PCB receptacle for printed circuit board

3. Contact type (avoid for RP shell type)
C Crimp version
S Solder version

4. Shell material & finish
B Black Nickel ✓
G Brass shell Olive drab cadmium
U Unplated brass ✓

5. Backshell type (avoid for receptacle)
B Banding platform
GA Gland backshell

✓ : RoHS compliant

How to order TVUCOM- USB3.2 Gen1

1.	2.	3.	4.	5.	6.	7.	8.
Shell type	Series	Contact type	Shells material and finish	Shell size	Contact gender	Coding	Deviation (only for TV07 shell type)
TV06	UCOM-USB3	C	W	11	P	-	-

1. Shells type
TV06 Plug
TV07 Jam nut
TVP00 Receptacle Square flange

2. Series
UCOM-USB3 µcom for USB3.0

3. Contact type (avoid for RP shell type)
C Crimp version
S Solder version
CI PCB contact (only with TV07 shell type and F059 deviation)

4. Shells material and finish
W Olive Drab Cadmium plating
F Nickel plating ✓
ZN Aluminium shell Black Zinc Nickel ✓
TZ Tin zinc ✓ 
B Marine bronze shell ✓
K Passivated stainless steel ✓

5. Shell size
11 Shells size 11

6. Contact gender
P Pin contact
S Socket contact

7. Coding
Coding N C Coding C
A Coding A D Coding D
B Coding B E Coding E

8. Deviation (only for TV07 shell type)
F312 Jam nut Reduced flange receptacle with banding platform
F059 Stand off - Jam nut Reduced flange receptacle for PCB (mandatory with CI contact type)

✓ : RoHS compliant

HOW TO ORDER - UCOM-USB3.2 & TVUCOM-USB3.2

How to order - Special Backshells

1.

2.

3.

Series	Shell material and finish	Backshell type
TVUCOM	W	B

1. Series	3. Contact gender
TVUCOM Backshell	B Backshell for heatshrink sleeve
	G Backshell for PG gland

2. Shells material and finish		
W		Olive Drab Cadmium plating
F	Aluminium shell	Nickel plating ✓
ZN		Black Zinc Nickel ✓
TZ		Tin Zinc ✓ 
B	Marine bronze shell ✓	

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HOW TO ORDER - USBFTV™ - PLUG AND RECEPTACLE

1.	2.	3.	4.	5.
Series	Shell type	Backshell (receptacle only)	Back terminations (receptacle only)	Shells material & finish
USBFTV	7	PEM	2	G

1. Series

USBFTV	USB2.0 Field Series (USB-A)
--------	-----------------------------

2. Shell type

6	Plug
2	Square flange receptacle
7	Jam nut receptacle

3. Backshell (receptacle only)

	Without backshell
PE	Plastic gland
PEM	Metal backshell Metal gland (back termination 2 only)

4. Back terminations (receptacle only)

1	Female USB-A
2	Solder (4 tinned holes)

5. Shell material & finish

G		Olive Drab Cadmium plating
N	Aluminium shell	Nickel plating ✓
ZN		Black Zinc Nickel ✓
TZ		Tin Zinc ✓ 
BZ	Marine bronze shell ✓	
S	Stainless steel	Passivated ✓

✓ : RoHS compliant

Examples :

Part number	Description
USBFTV6G	USBFTV, plug, olive drab cadmium plating
USBFTV2PE2N	USBFTV, square flange receptacle with metal backshell and plastic gland, solder back termination, nickel plating
USBFTV7PEM2N	USBFTV, jam nut receptacle with metal backshell and metal gland, solder back termination, nickel plating

HOW TO ORDER - USBFTV™ - TRANSVERSALLY SEALED AND HERMETIC RECEPTACLE

1.	2.	3.	4.	5.	6.	7.	8.	9.
Series	Shell type	Backshell	Sealing type	Coding	Back terminations	Shells material and finish	Cordset lenght	USB Cable end
USBFTV	2	PE	S	A	2	G	03	OPEN

1. Series

USBFTV

USB2.0 Field Series (USB-A)

6. Back terminations

2

USB2.0 cable

2. Shell type

2

Square flange receptacle

7

Jam nut receptacle

7. Shell material & finish

G

N

ZN

TZ

BZ

S

Aluminium shell

Marine bronze shell ✓

Stainless steel

Olive Drab Cadmium plating

Nickel plating ✓

Black Zinc Nickel ✓

Tin Zinc ✓

NEW

Passivated ✓

8. Cordset lenght

03

0,3 m [11.81 inches]

05

0,5 m [19.68 inches]

10

1,0 m [39.37 inches]

15

1,5 m [59.05 inches]

20

2,0 m [inches]

30

3,0 m [inches]

40

4,0 m [inches]

9. USB Cable end

A

USB-A plug

OPEN

Open USB2.0 cable without plug at the end

✓: RoHS compliant

Examples :

Part number	Description
USBFTV2SA2G03OPEN	USBFTV, transversally sealed square flange receptacle, coding A, olive drab cadmium plating, 0,3m USB2.0 cable with open end
USBFTV2PESA2N05A	USBFTV, transversally sealed square flange receptacle with metal backshell and plastic gland, coding A, nickel plating, 0,5m USB2.0 cable with USB-A plug at the end
USBFTV2PEMSA2N03A	USBFTV, transversally sealed square flange receptacle with metal backshell and metal gland, coding A, nickel plating, 0,3m USB2.0 cable with USB-A plug at the end

HOW TO ORDER - USBFTV™ - ATEX ZONE 2

1.	2.	3.	4.	5.	6.	7.
Series	Shell type	Coding (for receptacle only)	Back terminations (for receptacle only)	Shell material and finish	Cordset lenght (for receptacle only)	USB Cable end (for receptacle only)
USBFTVX	2S	A	2	G	03	A

1. Series

USBFTVX USB2.0 Field Series (USB-A) for Atex Zone 2

2. Shell type

6	Plug	
2S	Square flange receptacle	Transversally sealed
7S	Jamp nut receptacle	

3. Coding (for receptacle only)

A	Coding A
B	Coding B

4. Back terminations (for receptacle only)

2	USB2.0 cable
----------	--------------

5. Shell material & finish

G		Olive Drab Cadmium plating
N	Aluminium shell	Nickel plating ✓
ZN		Black Zinc Nickel ✓
BZ	Marine bronze shell ✓	

6. Corset lenght (for receptacle only)

03	0,3 m [11.81 inches]
05	0,5 m [19.68 inches]
10	1,0 m [39.37 inches]
15	1,5 m [59.05 inches]

7. USB Cable end (for receptacle only)

A	USB-A plug
OPEN	Open USB 2.0 cable without plug at the end

✓ : RoHS compliant

Examples :

Part number	Description
USBFTVX6G	USBFTV for atex zone 2, plug, olive drab cadmium plating
USBFTVX7SA2G03A	USBFTV for atex zone 2, transversally sealed jam nut receptacle, coding A, olive drab cadmium plating, 0,3m USB2.0 cable with USB-A plug at the end
USBFTVX7SA2N03OPEN	USBFTV for atex zone 2, transversally sealed jam nut receptacle, coding A, nickel plating, 0,3m USB2.0 cable with open end

HOW TO ORDER - USBBFTV - PLUG AND RECEPTACLE

1.

2.

3.

4.

5.

Series	Shell type	Backshell (receptacle only)	Back terminations (receptacle only)	Shell material & finish
USB BFTV	7	PEM	2	G

1. Series

USB BFTV	USB2.0 Field Series (USB-B)
----------	-----------------------------

2. Shell type

6	Plug
2	Square flange receptacle
7	Jam nut receptacle

3. Backshell (receptacle only)

	Without backshell	
PE	Metal backshell	Plastic gland
PEM		Metal gland (back termination 2 only)

4. Back terminations (receptacle only)

1	Female USB-A
2	Solder (4 tinned holes)

5. Shell material and finish

G		Olive Drab Cadmium plating
N	Aluminium shell	Nickel plating ✓
ZN		Black Zinc Nickel ✓
TZ		Tin Zinc ✓ NEW
BZ	Marine bronze shell ✓	
S	Stainless steel	Passivated ✓

✓ : RoHS compliant

Examples :

Part number	Description
USB BFTV6ZN	USB BFTV, plug, black zinc nickel plating
USB BFTV2PE1N	USB BFTV, square flange receptacle with metal backshell and plastic gland, female USB-A back termination, nickel plating
USB BFTV22N	USB BFTV, square flange receptacle, solder back termination, nickel plating

HOW TO ORDER - USBBFTV - TRANSVERSALLY SEALED RECEPTACLE

1.	2.	3.	4.	5.	6.	7.	8.
Series	Shell type	Backshell	Sealing type	Back terminations	Shells material and finish	Cordset lenght	USB Cable end
USB BFTV	2	PE	S	2	G	03	A

1. Series

USB BFTV	USB2.0 Field Series (USB-B)
----------	-----------------------------

2. Shell type

2	Square flange receptacle
7	Jam nut receptacle

3. Backshell

	Without backshell	
PE	Metal backshell	Plastic gland
PEM		Metal gland

4. Sealing type

S	Transversally sealed receptacle
---	---------------------------------

5. Back terminations

2	USB2.0 cable
---	--------------

6. Shell material & finish

G	Aluminium shell	Olive Drab Cadmium plating
N		Nickel plating ✓
ZN		Black Zinc Nickel ✓
TZ		Tin Zinc ✓ 
BZ	Marine bronze shell ✓	
S	Stainless steel	Passivated ✓

7. Corset lenght

03	0,3 m [11.81 inches]
05	0,5 m [19.68 inches]
10	1,0 m [39.37 inches]
15	1,5 m [59.05 inches]

8. USB Cable end

A	USB-A plug
OPEN	Open USB 2.0 cable without plug at the end

✓ : RoHS compliant

Examples :

Part number	Description
USB BFTV7S2N03A	USB BFTV, transversally sealed jam nut receptacle, nickel plating, 0,3m USB2.0 cable with USB-A plug at the end
USB BFTV2S2G05OPEN	USB BFTV, transversally sealed square flange receptacle, olive drab cadmium plating, 0,5m USB2.0 cable with open end
USB BFTV7S2G10A	USB BFTV, transversally sealed jam nut receptacle, olive drab cadmium plating, 1,0m USB2.0 cable with USB-A plug at the end

HOW TO ORDER - CABLE

Part number	USB	Lenght
191-030943-00	USB3.2 Gen1	300m
190-040567-00	USB2.0	300m

✓ : RoHS compliant

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HOW TO ORDER - CORDSET

1.

2.

3.

4.

5.

Series	Type	USB3.0 wiring	Lenght	Mandatory
USB3	AA	CROSSED	050	PU HFFR

1. Series	
USB3	USB3.2 Gen1 Cordset
(No available for µCom-USB3.2 & TVµCom-USB3.2)	
USB2	USB2.0 Cordset
2. Shell type	
AA	Cordset with overmoldded USB type A plug on each end
3. Wiring (USB3.0 cordset only)	
CROSSED	Crossed wiring
STRAIGHT	Straight wiring

Important note:

- Cordsets are with USB-A plug overmolded on each end.
- To define a crossed or straight USB3.2 Gen1 cordset, please refer to page 81.
- Crossed cordset will have a black overmolding while straight cordset will have a blue overmolding.

● USB3.2 Gen1 : Exceeded 3m we don't guarantee the performance because cordset is out of standard.

● USB2.0 : Exceeded 4,80m we don't guarantee the performance because cordset is out of standard.

4. Lenght		
050	0.5 m / 1.64 ft	● ●
100	1 m / 3.28 ft	● ●
150	1.50 m / 4.92 ft	● ●
180	1.80 m / 5.91 ft	● ●
200	2 m / 6.56 ft	● ●
250	2.50 m / 8.2 ft	● ●
300	3 m / 9.84 ft	● ●
350	3.50 m / 11.48 ft	● ●
400	4 m / 13.12 ft	● ●
450	4.5 m / 14.76 ft	● ●
500	5 m / 16.40 ft	● ●
600	6 m / 19.68 ft	● ●
700	7 m / 22.96 ft	● ●
800	8 m / 26.24 ft	●
900	9 m / 29.52 ft	●
1000	10 m / 32.80 ft	●

5. Mandatory	
PU HFFR	Black polyurethane jacket

Examples :

Part number	Description
USB2AA450PUHFFR	USB2.0 cordset with overmoldded USB type A plug on each end, 4,5m lenght
USB3AACROSSED150PUHFFR	USB3.2 Gen1 cordset with overmoldded USB type A plug on each end, 1,5m lenght with crossed wiring
USB3AASTRAIGHT200PUHFFR	USB3.2 Gen1 cordset with overmoldded USB type A plug on each end, 2,0m lenght with straight wiring

HOW TO ORDER - COMPOSITE USB3.2 GEN 1 ACCESS POINT

1.	2.	3.	4.	5.
Series	Shell type	USB output	Cordset lenght	Cordset termination
USB3APSCC	2	2	15	A

USB3.2

USB2.0

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1. Series

USB3APSCC USB3 Access Point series

2. Shell type

2 Square flange receptacle
7 Jam nut receptacle

3. USB output

1 Female - female coupler
2 Cordset termination

4. Cordset length (only for cordset termination)

	Meters	Inch
03	0,3 m	11,82
05	0,5 m	19,69
10	1 m	39,38
15	1,5 m	59,06
18	1,8 m	70,87
20	2 m	78,75

5. Cordset termination (only for cordset termination)

A USB3 Type-A plug

Examples :

Part number	Description
USB3APSCC7210A	USB3 Access Point series, jam nut receptacle, cordset termination, 1 meter cordset lenght, USB Type-A plug.
USB3APSCC2120	USB3 Access Point series, square flange receptacle, female - female coupler, 2 meters cordset lenght.

HOW TO ORDER - USB3CFTV MEMORY KEYS

1.	2.	3.	4.
Series	Capacity	Material and plating	Protective cap
USB3F TV KEY 6	32	G	

1. Series
USB3F TV KEY 6 USB3 FTV Memory Keys

2. Capacity
16 16 Gb
32 32 Gb
64 64 Gb
128 128 Gb
256 256 Gb

3. Material and plating		
	Shell material	Shell finish
G	Aluminum	Olive drab cadmium
N		Nickel ✓
ZN		Black zinc nickel ✓
TZ		Tin Zinc ✓ 
BZ	Marine bronze shell ✓	

4. Protective cap	
	Without Cap
CAP	With Cap

✓ : RoHS compliant

Examples :

Part number	Description
USB3FTVKEY6128TZ	USB3FTV memory key, 128 Gb capacity, tin zinc plating.
USB3FTVKEY632GCAP	USB3FTV memory key, 32 Gb capacity, olive drab cadmium plating, with protective cap.
USB3FTVKEY6256N	USB3FTV memory key, 256 Gb capacity, nickel plating.

HOW TO ORDER - USB3FTV™ MEMORY KEYS

1.

2.

3.

4.

5.

6.

Series	Coding	Capacity	Shells material and finish	Protective cap	Mandatory
USB3FTVKEY6	A	64	G	CAP	APA UV

1. Series

USB3FTVKEY6 USB3.2 Gen1 Memory Keys

2. Coding

A Coding A
B Coding B

3. Capacity

32 32 Gb
64 64 Gb
128 128 Gb
256 256 Gb

4. Shell material and finish

G Olive Drab Cadmium plating
N Nickel plating ✓
ZN Black Zinc Nickel ✓
TZ Tin zinc ✓ 
BZ Marine bronze shell ✓

5. Cap

Without protective cap
CAP With protective cap

6. Mandatory

APA UV Mandatory

✓ : RoHS compliant

Examples :

Part number	Description
USB3FTVKEY6A64GCAPAPAUV	USB3FTV memory key, coding A, 64Gb capacity, olive drab cadmium plating, with protective cap
USB3FTVKEY6A128NAPAUV	USB3FTV memory key, coding A, 128Gb capacity, nickel plating, without protective cap
USB3FTVKEY6A256ZNCAPAPAUV	USB3FTV memory key, coding A, 256Gb capacity, black zinc nickel plating, with protective cap

HOW TO ORDER - ROK - RUGGED OVAL KEY

1.

2.

3.

Series	Capacity	Plating
USB3FKEY	16	B

1. Series

USB3FKEY	ROK - Rugged Oval Key
----------	-----------------------

3. Series

B	Black painting
---	----------------

2. Shell type

16	16 Gb
32	32 Gb
64	64 Gb
128	128 Gb
256	256 Gb

Examples :

Part number	Description
USB3FKEY16B	Rugged Oval Key, 16Gb capacity, black painting
USB3FKEY64B	Rugged Oval Key, 64Gb capacity, black painting
USB3FKEY256B	Rugged Oval Key, 256Gb capacity, black painting

HOW TO ORDER - USB3FTV™ USB3.2 GEN 1 AMPLIFIER

1.	2.	3.	4.	5.
Series	Shell type	Coding (for plug with cordset only)	Material and platings	Cordset length (for plug with cordset only)
CA USB3F TV	2	A	G	30

1. Series

CA USB3F TV USB3.2 Gen1 Field Series copper amplifier (USB3-A)

2. Shell type

2 Square flange receptacle
7 Jam nut receptacle

3. Coding (for plug with cordset only)

A Coding A
B Coding B

4. Material and platings

	Shell material	Shell plating
G	Aluminum	Olive drab cadmium
N		Nickel ✓
ZN		Black zinc nickel ✓
TZ	Bronze ✓	Tin Zinc ✓ 
BZ		

5. Cordset length with plug USB3 type A

30	3 m [118,11]
40	4 m [157,48]
50	5 m [196,85]
60	6 m [236,22]
70	7 m [275,59]
80	8 m [314,96]

✓ : RoHS compliant

USB3.2

USB2.0

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HOW TO ORDER - STANDARD PROTECTIVE CAP

1.	2.	3.	4.	5.
Series	Connector type	Rope type	Shells material and finish	Deviation
USBFTV C	7		G	F057

1. Series

USBFTVC	USBFTV standard protective cap (size 15)
USB3CFTVC	USB3CFTV standard protective cap (size 11)

2. Connector type

6	Plug
2	Square flange receptacle
7	Jam nut receptacle

3. Rope type

	Nylon cord
M	Metallic chain
MR	Stainless Steel rope - Transparent teflon jacket
BMR	Stainless Steel rope - Black teflon jacket

4. Shell material and finish

N	Nickel plating ✓
G	Olive drab cadmium
ZN	Black zinc nickel plating ✓

5. Deviation

F057	Reduced flange ring
------	---------------------

✓ : RoHS compliant

Examples :

Part number	Description
USBFTVC2N	USBFTV protective cap for square flange receptacle, nylon cord, nickel plating
USBFTVC2MRN	USBFTV protective cap for square flange receptacle, stainless steel rope with teflon jacket, nickel plating
USBFTVC6ZN	USBFTV protective cap for plug, nylon cord, black zinc nickel plating

HOW TO ORDER - STANDARD PROTECTIVE CAP - TVUCOM-USB3.2

1.	2.	3.	4.	5.	6.	7.
Series	Protection cap type	Wire type	Connector type	Material and finish	Corresponding connector shell size	Deviation
B	EC	N	TV	W	11	-

1. Series

B Cap

2. Protection cap type

EC For square flange receptacle

ER For jam nut receptacle

F For plug

3. Wire type

- Blank for metallic chain

N Nylon cord

R Jacketed stainless steel rope

RO Jacketed stainless steel rope with washer end (only for plug)

4. Connector type

TV Cap

5. Material and finish

W Olive Drab Cadmium plating on aluminium (175°C)

ZN Black zinc nickel plated on aluminium (175°C) ✓

F Electroless nickel plated on aluminium (200°C) ✓

B Marine bronze (200°C) ✓

Z Green zinc cobalt plated on aluminium (175°C) ✓

6. Corresponding connector shell size

11 Shell size 11

7. Deviation (only for Jam nut Reduced flange receptacle)

F057 For Jam nut Reduced flange receptacle

✓: RoHS compliant

USB3.2

USB2.0

Cables and
cordsets

Adapters and
access points

Rugged
electronics

Accessories

Assembly
instructions

How to order

HOW TO ORDER - SILICONE PROTECTIVE CAP - TVUCOM-USB3.2

1.	2.	3.	4.
Series	Protection cap type	Wire type	Shell size
RC	00	N	11

1. Series

RC	Rubber caps
----	-------------

2. Protection cap type

00	For square flange receptacle
07	For jam nut receptacle

3. Wire type

N	Nylon cord
---	------------

4. Shell size

11	Shell size 11
----	---------------

USB3.2
USB2.0
Cables and cordsets
Adapters and access points
Rugged electronics
Accessories
Assembly instructions
How to order

NOTES



NOTES

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NOTES

NOTES

Notes section with horizontal lines for writing.

ABOUT AMPHENOL

Founded in 1932, **Amphenol** is one of the largest manufacturers of interconnect products in the world. The company designs, manufactures, and markets electrical, electronic, and fiber optic connectors, interconnect systems, and coaxial and specialty cables.

Amphenol has a diversified presence as a leader in high growth areas of the interconnect industry and provides solutions for customers in the automotive, broadband, industrial, information technology and data communications, military and aerospace, mobile devices, and mobile networks markets.

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