

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

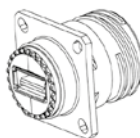
- Battlefield communication systems
- C5ISR
- Data acquisition and transmission in harsh environment
- Navy
- Rail Mass Transit
- Industrial process control
- Robotics
- CNC machines
- Oil & Gas

✓ : RoHS compliant

How to order : Please refer to page 116

Back terminations

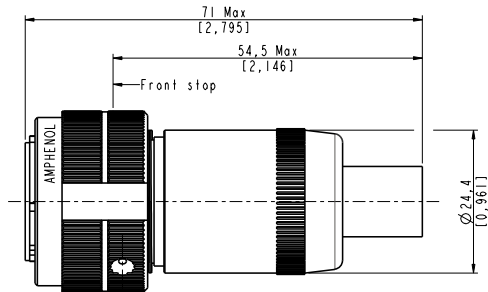
Type 1:
female USB-A



USB3FTV™

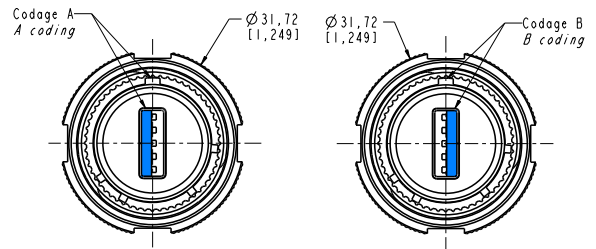
Overall dimension

Plug - Shell type 6

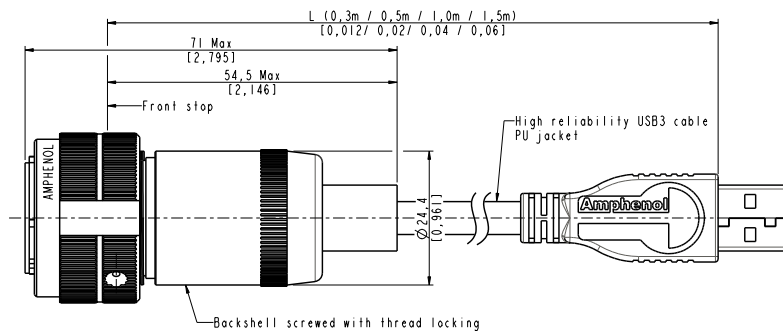
Part number type: **USB3FTV 6 X**

Coding A

Coding B

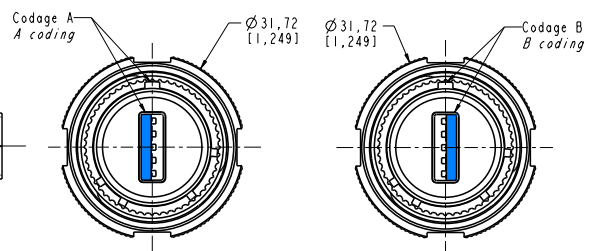


Plug - Shell type 6 - USB-A cordset

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

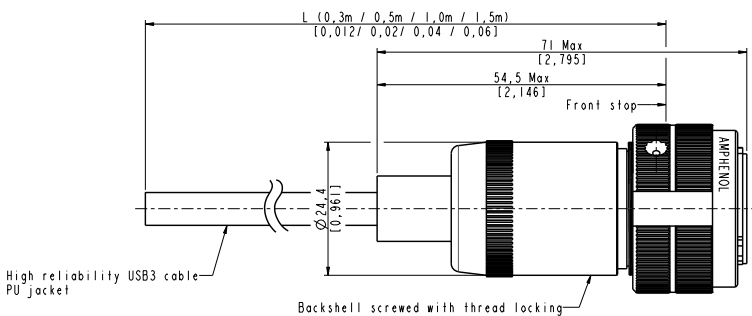
Coding A

Coding B

**Important note:**

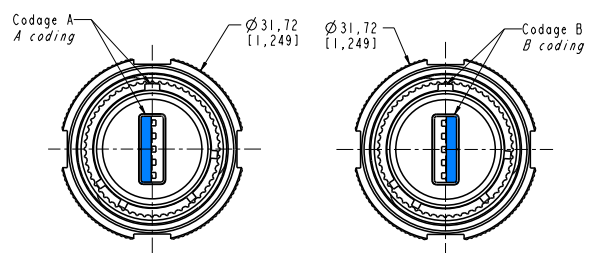
- To define a straight or crossed USB3.2 Gen1 cordset, please refer to "Assembly instructions" page 80

Plug - Shell type 6 - Open USB cordset

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

Coding A

Coding B



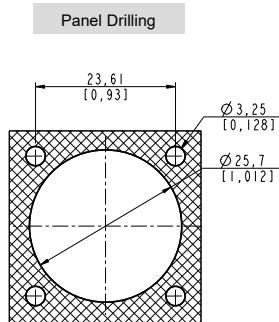
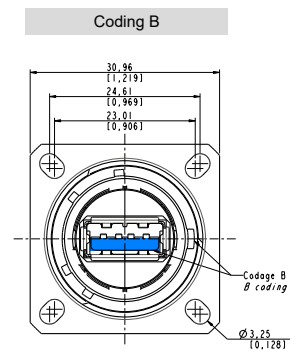
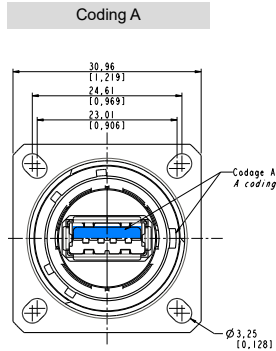
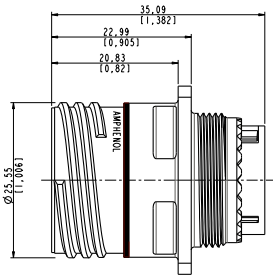
USB3FTV™



Overall dimension

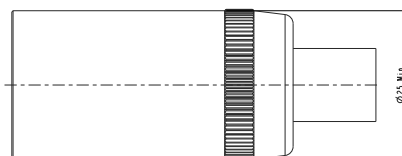
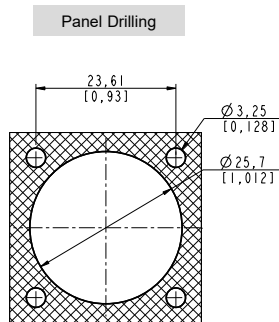
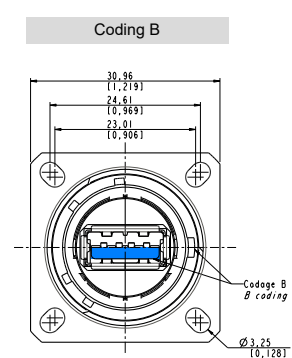
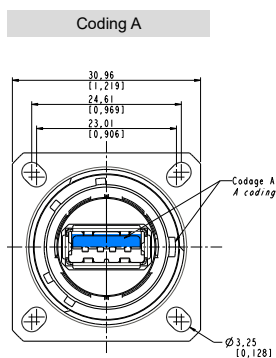
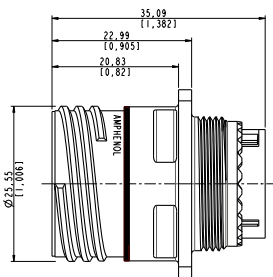
Receptacle - Square flange receptacle - 4 mounting holes - Shell type 2 - Back termination type 1

Part number type: **USB3FTV 2 1 X**



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

Part number type: **USB3FTV 2 X PE 1**



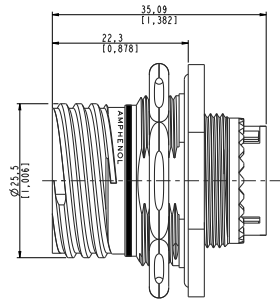
USB3FTV™



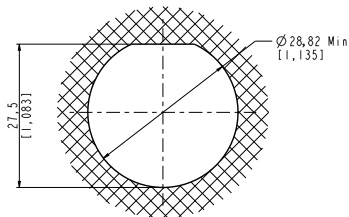
Overall dimension

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

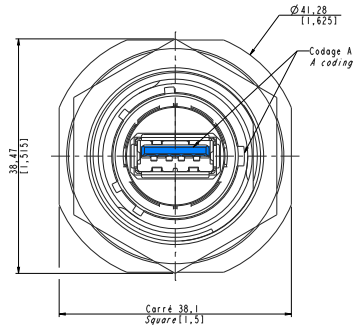
Part number type: **USB3FTV 7 1 X**



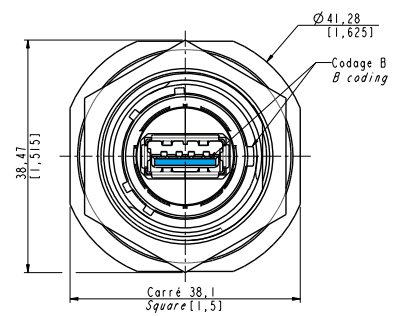
Panel Drilling



Coding A

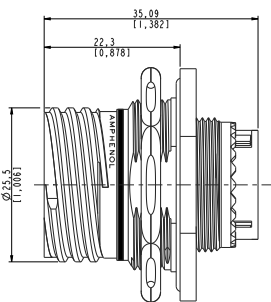


Coding B

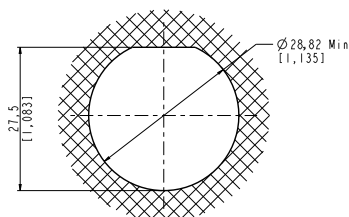


Receptacle - Jam nut receptacle - Hexagonal nut mounting - Shell type 7 - Back termination type 1 - Metal backshell

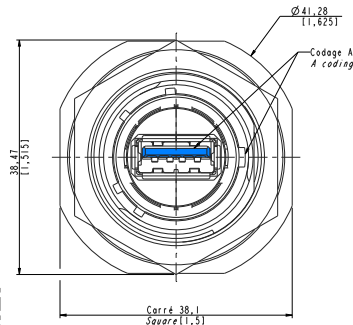
Part number type: **USB3FTV 7 X PE 1**



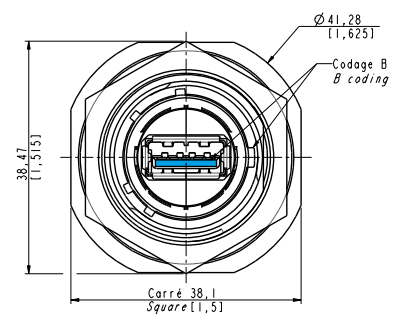
Panel Drilling



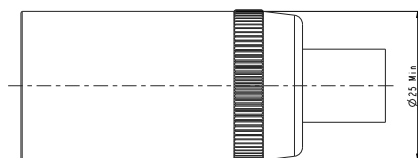
Coding A



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

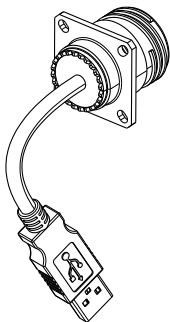
- Battlefield communication systems
- C5ISR
- Data acquisition and transmission in harsh environment
- Navy
- Rail Mass Transit
- Industrial process control
- Robotics
- CNC machines
- Oil & Gas

✓ : RoHS compliant

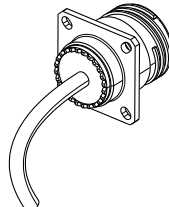
How to order : Please refer to page 117

Back terminations

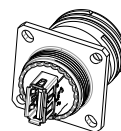
USB cable end type A



USB cable type «OPEN»



VG96949 Female USB-A



USB3FTV™ - TRANSVERSALLY SEALED AND HERMETIC RECEPTACLE

Overall dimension

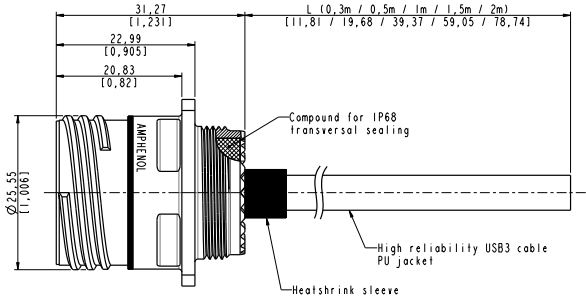
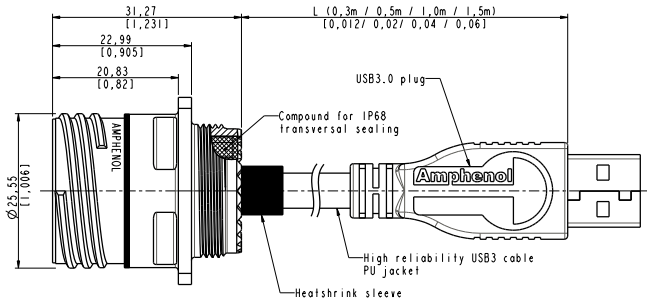
Receptacle - Square flange receptacle - 4 mounting holes - Shell type 2 - USB-A or Open cordset



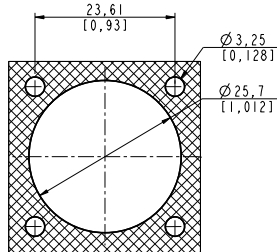
Part number type: **USB3FTV 2 S X XX X ACROS**

USB3FTV 2 S X XX X ASTR

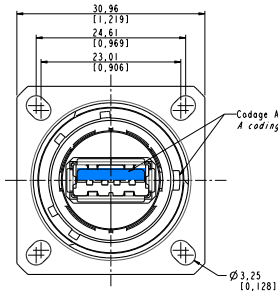
Part number type: **USB3FTV 2 S X XX X OPEN**



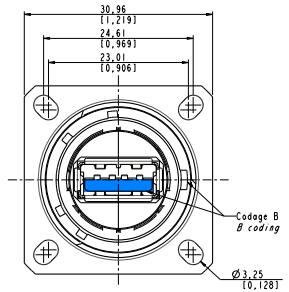
Panel drilling



Coding A



Coding B

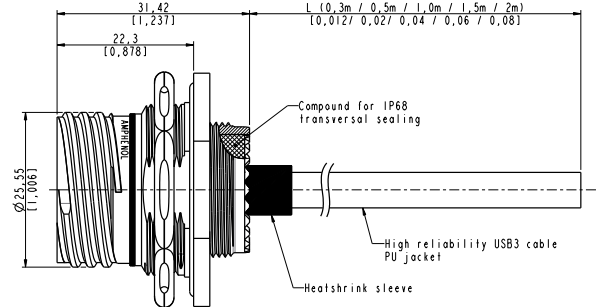
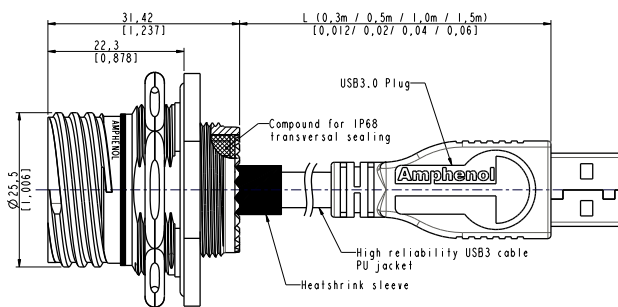


Receptacle - Jam nut receptacle - Hexagonal nut mounting - Shell type 7 - USB-A or Open cordset

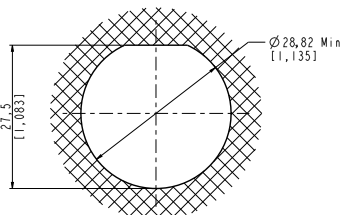
Part number type: **USB3FTV 7 S X XX X ACROS**

USB3FTV 7 S X XX X ASTR

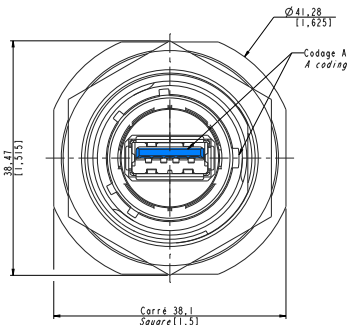
Part number type: **USB3FTV 7 S X XX X OPEN**



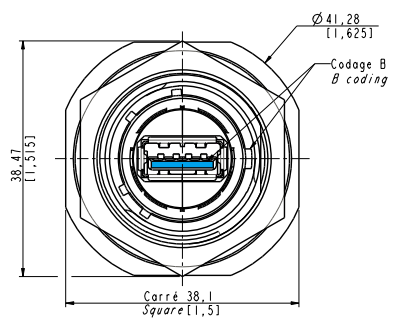
Panel drilling



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

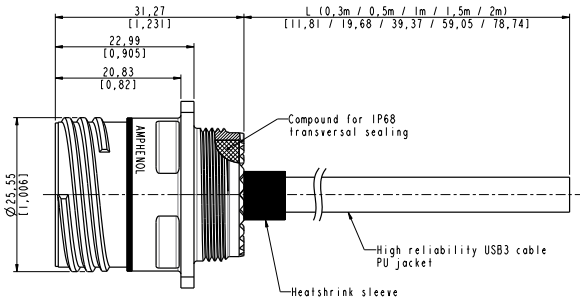
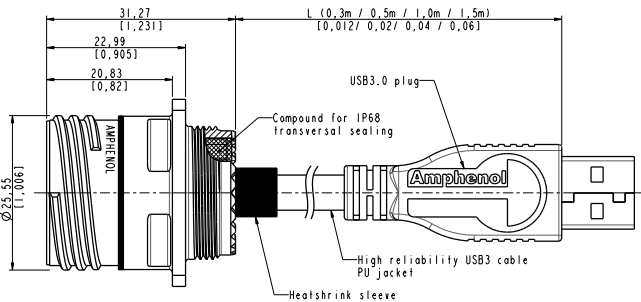
Receptacle - Square flange receptacle - 4 mounting holes - Shell type 2 - USB-A or Open cordset



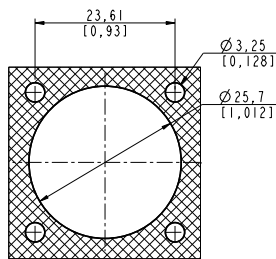
Part number type: **USB3FTV 2 H X XX X ACROS**

USB3FTV 2 H X XX X ASTR

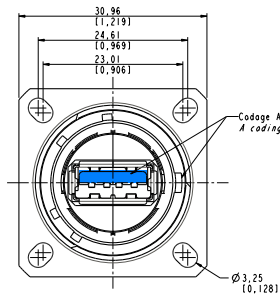
Part number type: **USB3FTV 2 H X XX X OPEN**



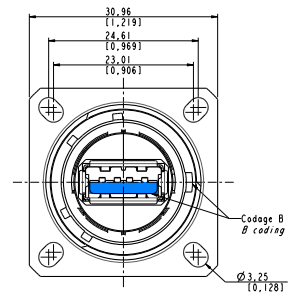
Panel drilling



Coding A



Coding B

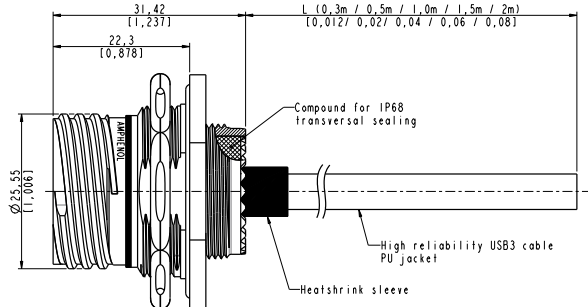
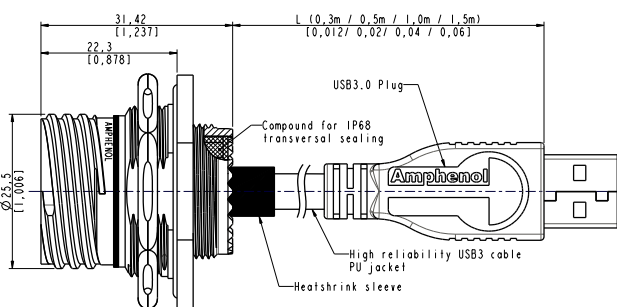


Receptacle - Jam nut receptacle - Hexagonal nut mounting - Shell type 7 - USB-A or Open cordset

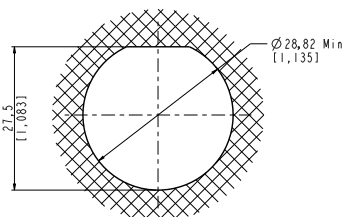
Part number type: **USB3FTV 7 H X XX X ACROS**

USB3FTV 7 H X XX X ASTR

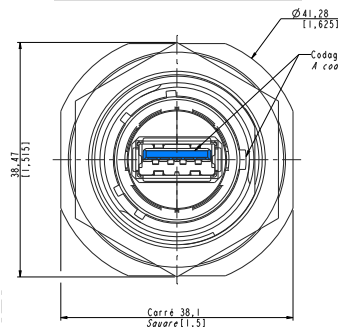
Part number type: **USB3FTV 7 H X XX X OPEN**



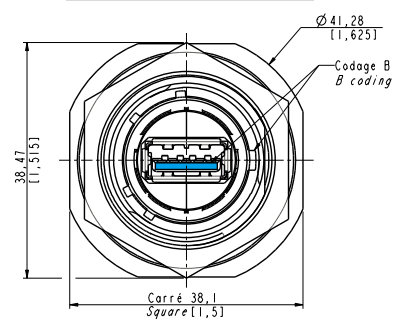
Panel drilling



Coding A



Coding B



Important note:

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

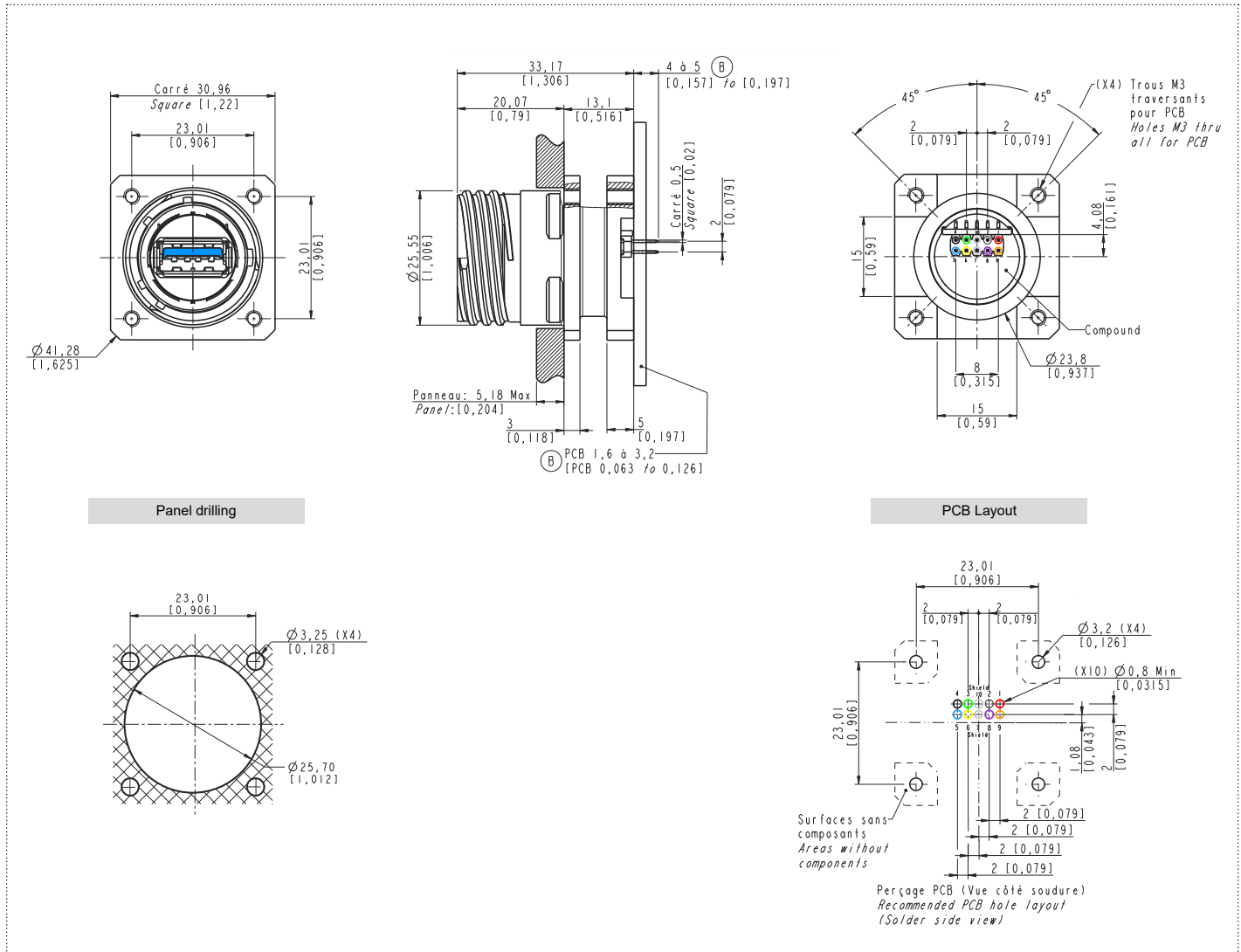
USB3FTV™ - STAND OFF RECEPTACLE

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



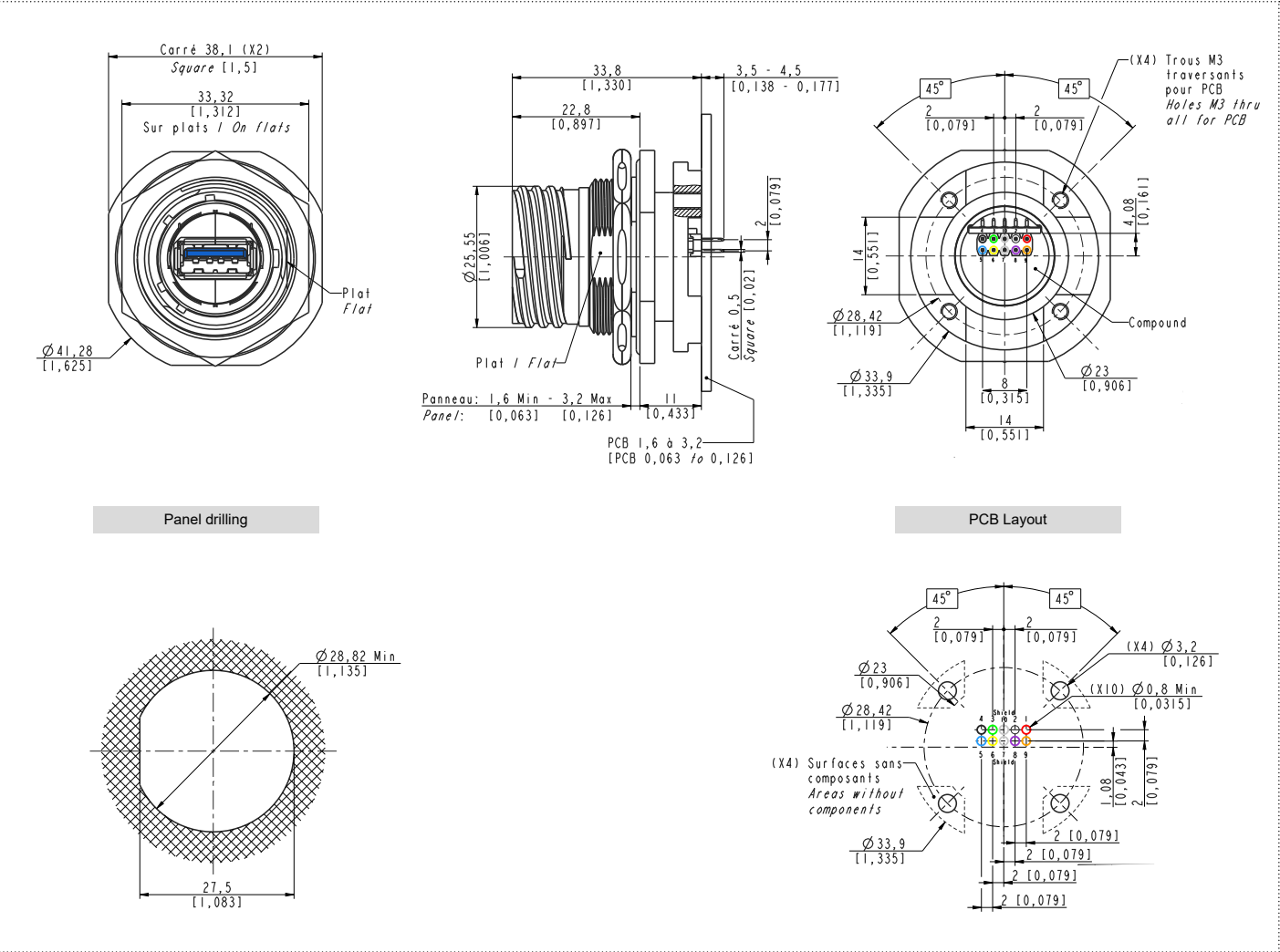
Part number for coding A	Part number for coding B	Plating
USB3FTV 2S A N F459	USB3FTV 2S B N F459	Nickel ✓
USB3FTV 2S A G F459	USB3FTV 2S B G F459	Olive drab cadmium
USB3FTV 2S A ZN F459	USB3FTV 2S B ZN F459	Black zinc nickel ✓

✓ : 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

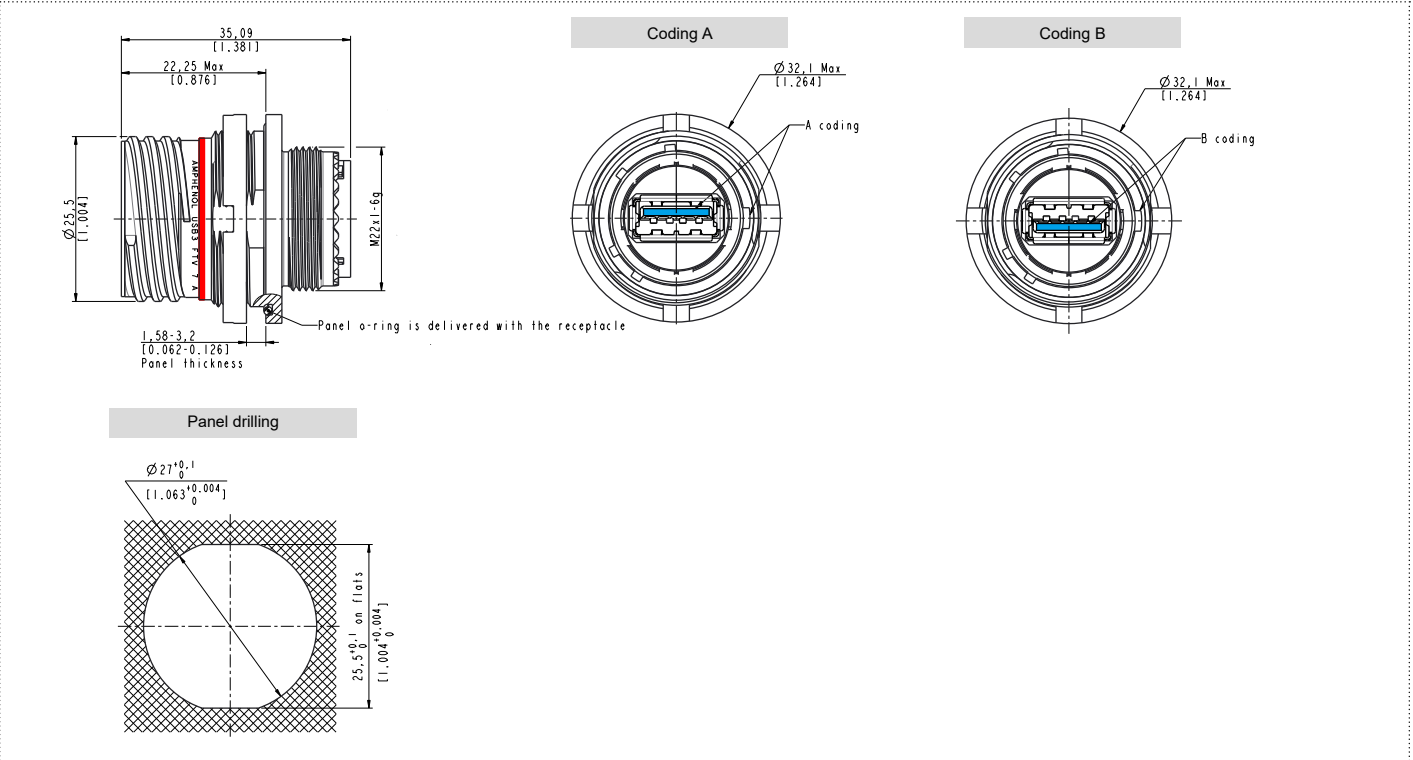


Description

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 ✓

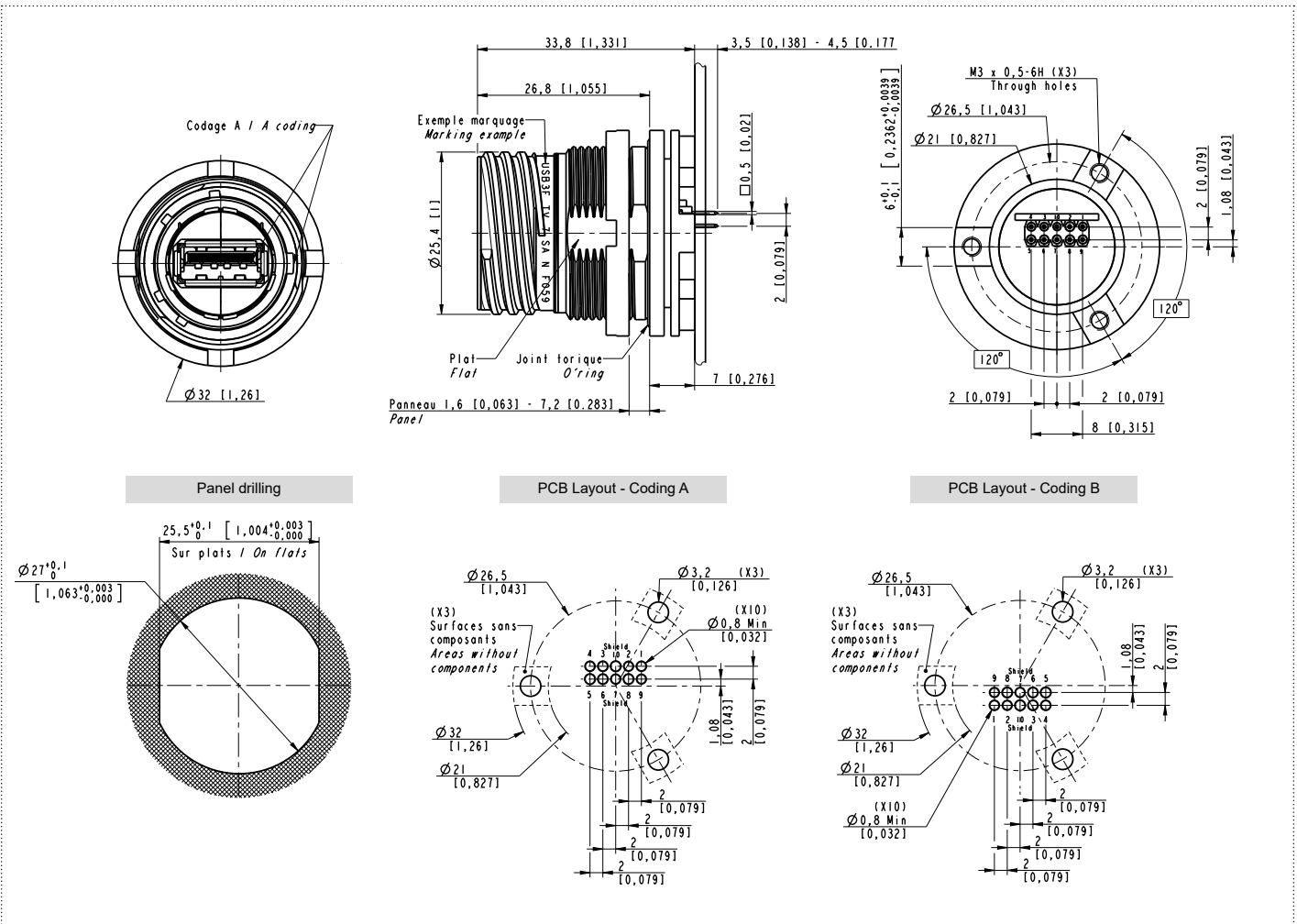
✓ : RoHS compliant

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

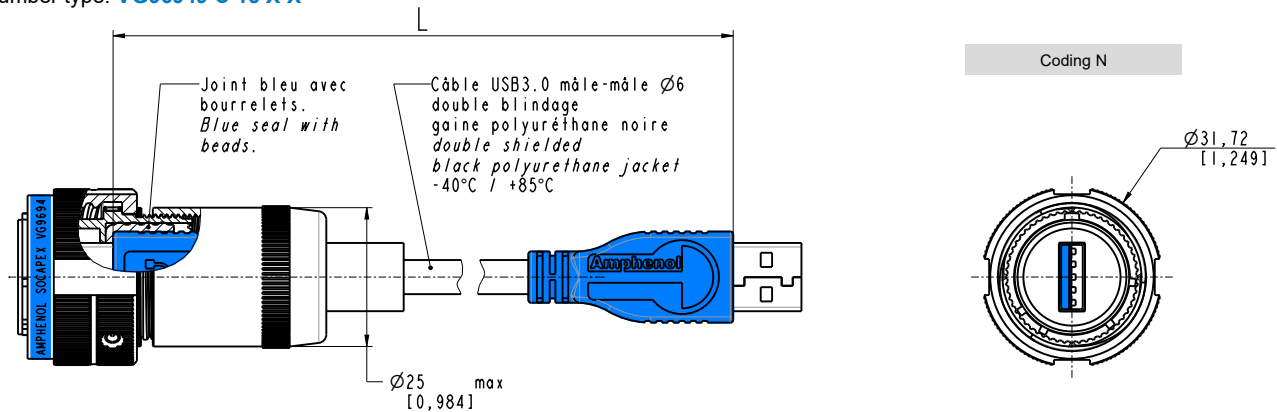
This version of our USB3FTV™ is qualified VG96949. According to this standard, receptacles are compounded, the panel nut of the jamnut receptacle version is according to VG95319 and the treatment is Tin Zinc RoHS.

How to order : Please refer to page 118

Overall dimension

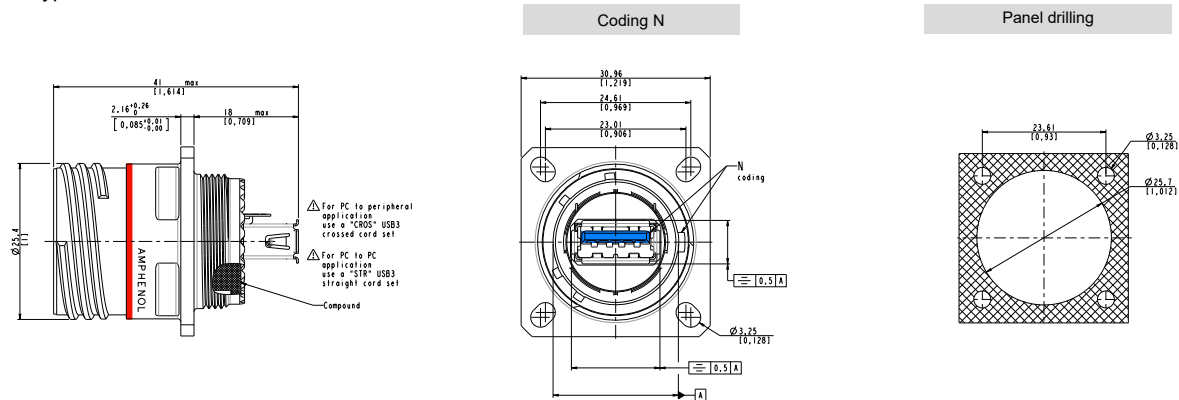
Plug - Shell type 6

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



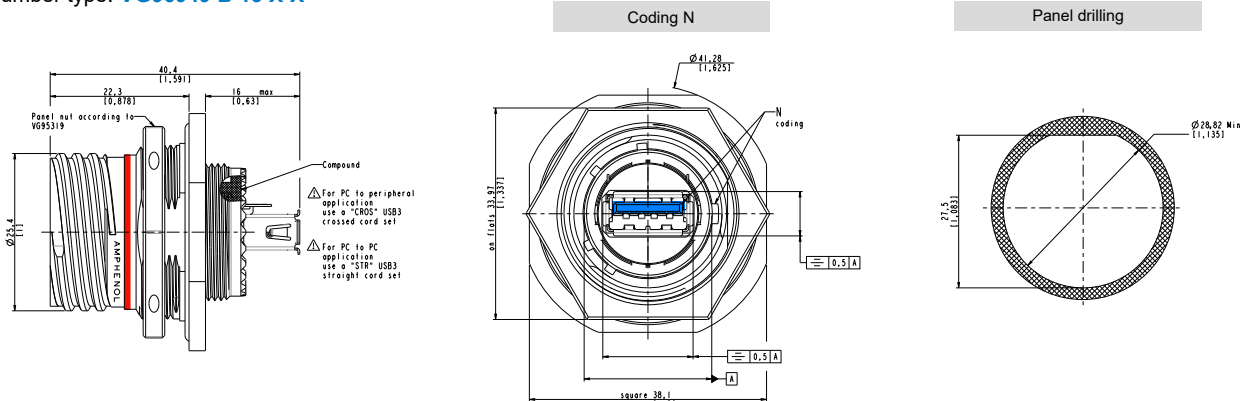
Receptacle - Square flange receptacle - 4 mounting holes - Shell type 2 - Compounded

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



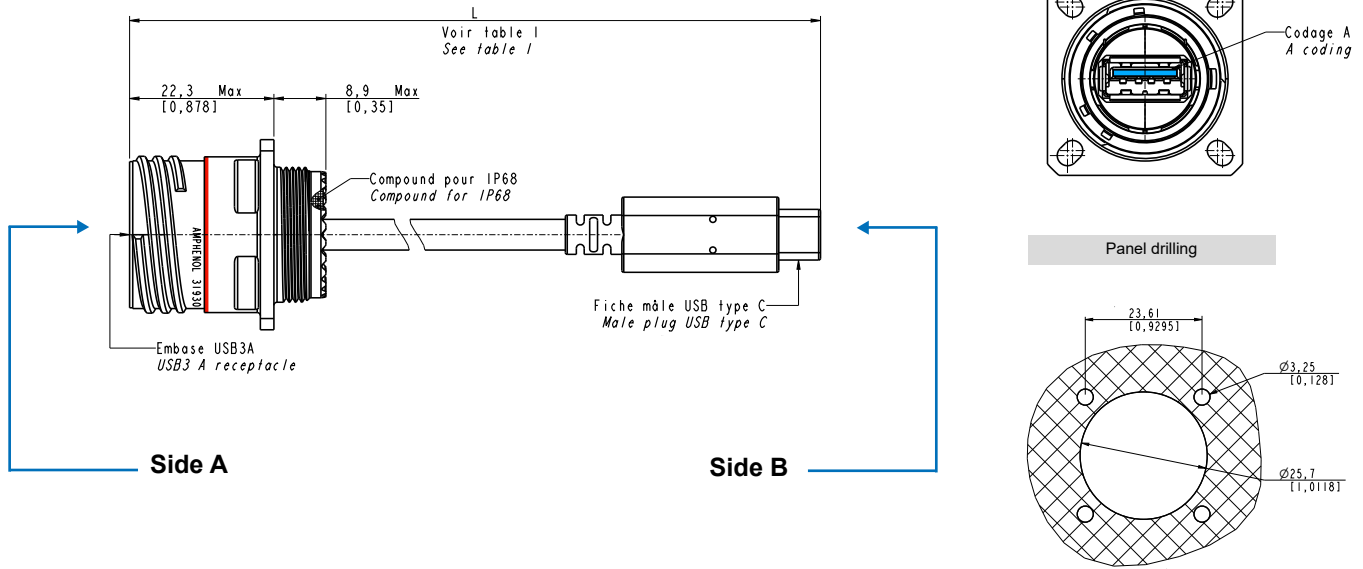
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Overall dimension

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.

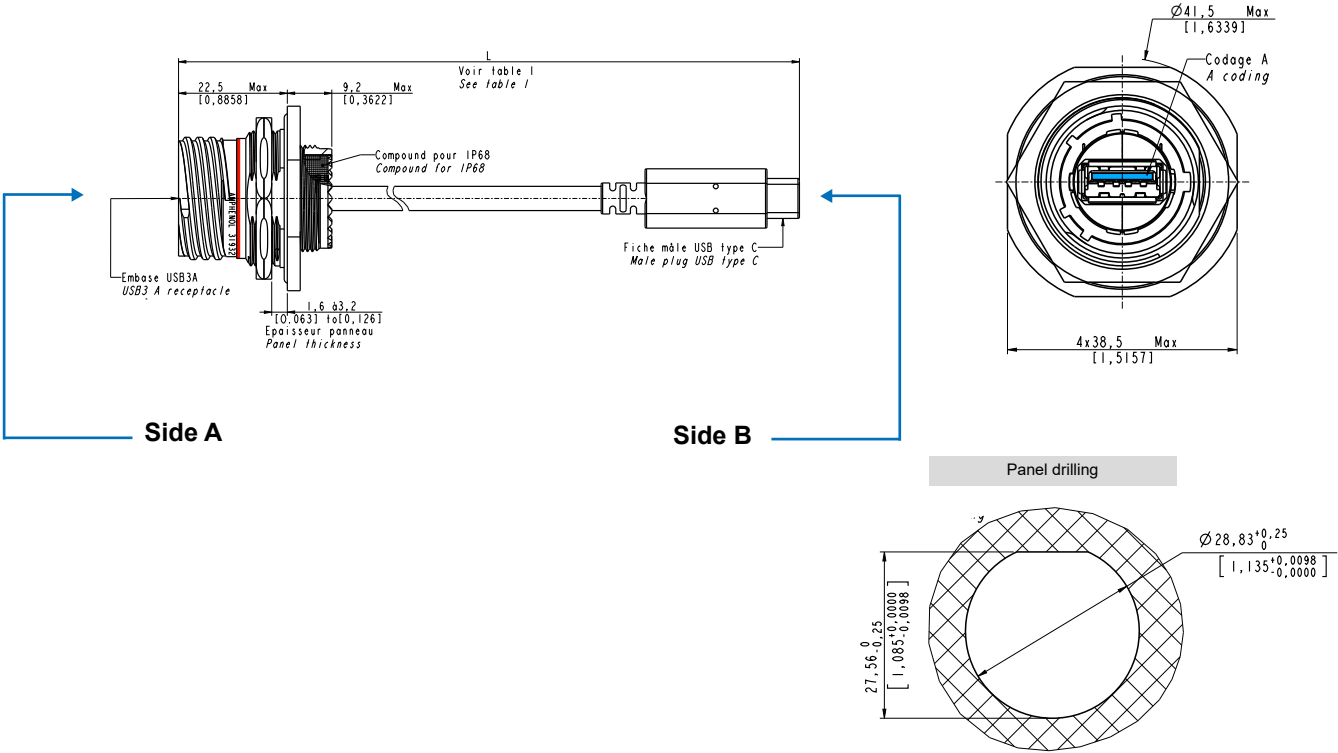
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Overall dimension

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:
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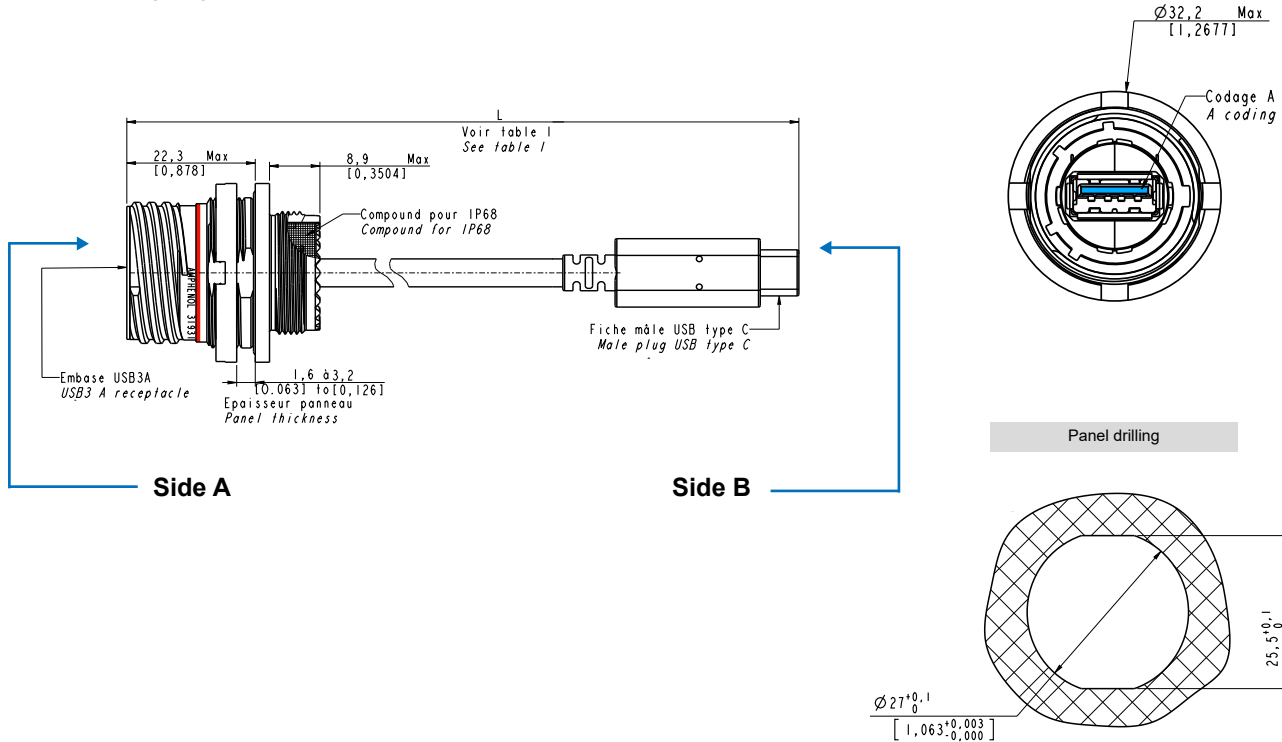


Overall dimension

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.

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USB3 Adapter selection guide

Define your own solution by selecting options in the scheme below

