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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.

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

Military
Commercial Aerospace
Space
Industry
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)

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**Our certifications**

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

---

**Our memberships**

Member of CMG (Connecting Manufacturing Group) Consortium

---
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
### CUSTOMER EXPERIENCE

You can access our solutions through our global network of sales offices or through our distributors. A partner you can trust.

**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

**Customer Proximity Design Expertise Quality Commitment On Time Delivery**

**Worldwide Distribution Network:** Our range of circular connectors, contacts, fiber optic connectors, PCB connectors and accessories are available through our extensive distribution network. It includes qualified distributors (QPL approved) for assembling MIL-DTL-38999 & derivatives and PT/451 (VG95328) connectors.

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

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.

### OUR HISTORY

<table>
<thead>
<tr>
<th>YEAR</th>
<th>EVENT</th>
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| 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: HES  
          | 1st "licence Bendix" manufactured connectors  
          | 3L Series                                                               |
| 1973     | New factory in Thyez (74) France with 250 people, 13 000m²            |
| 1975     | Production of 38999 connectors                                         |
| 1986     | 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                                                |

**Yeas**

- 1947 - 2022 Today & tomorrow

**New workshops:**
- Cable Assembly & Contact Manufacturing workshop

**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.

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

**Harness in the box solution launch**
MARKETS AND APPLICATIONS

Military vehicles
- Ground radios shelters
- Ground vehicles
- Battlefield
- Communication systems

CSISR
- 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

Navy
- 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
CONCEPT OVERVIEW AND BENEFITS

5 TOP REASONS to use USBFIELD™

#1 Military. Ruggedized. Connectors

Our concept is simple: use standard, well-known, 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 shielding 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. Reparable. 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

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<th>USB3.2 Gen1</th>
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<tr>
<td><strong>Data Rate</strong></td>
<td>480 Mb/s</td>
<td>5 Gb/s</td>
</tr>
<tr>
<td><strong>Voltage</strong></td>
<td>5 V</td>
<td>5 V</td>
</tr>
<tr>
<td><strong>Current</strong></td>
<td>1.5A</td>
<td>1.5A</td>
</tr>
<tr>
<td><strong>Power</strong></td>
<td>2.5 W</td>
<td>2.5 W</td>
</tr>
<tr>
<td><strong>Number of contacts</strong></td>
<td>2 power, 2 signal</td>
<td>2 power, 6 signal</td>
</tr>
<tr>
<td><strong>Max cable length per USB standard</strong></td>
<td>4.80 m</td>
<td>3 m</td>
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### Accessories

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<th>Adaptor and access point</th>
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<td>USB3FTV™ - Stand-off receptacle</td>
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<td>USB3FTV™ - Reduced flange receptacle</td>
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<td>USB3FTV™ - VG96949</td>
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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
- 1000 h with marine bronze shell
- Fire retardant / low smoke: UL94 V0 and EN45545
- Vibrations: 10 - 500 Hz, 10 g, 3 axes: no discontinuity > 1 micro 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

**How to order:** Please refer to page 86

**Back terminations**

<table>
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<tr>
<th>Type 1:</th>
<th>female USB-A</th>
</tr>
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Due to technical modifications, all information provided is subject to change without prior notice

Designed by Amphenol Socapex
Overall dimension

Plug - Shell type 6

Part number type: USB3FTV 6 X

Plug - Shell type 6 - USB-A cordset

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

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 XX X OPEN

Due to technical modifications, all information provided is subject to change without prior notice
Designed by Amphenol Socapex
**Overall dimension**

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

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

Panel Drilling

**Coding A**

**Coding B**

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

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

Panel Drilling

**Coding A**

**Coding B**
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

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

Metal backshell

Due to technical modifications, all information provided is subject to change without prior notice. Designed by Amphenol Socapex.
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 cm^3 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

**ENVIRONMENTAL PROTECTION**
- Sealing (when mated): 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 > 1 micro 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

How to order: Please refer to page 87

Back terminations

<table>
<thead>
<tr>
<th>USB cable end type A</th>
<th>USB cable type «OPEN»</th>
<th>VG96949 Female USB-A</th>
</tr>
</thead>
</table>

Due to technical modifications, all information provided is subject to change without prior notice
Designed by Amphenol Socapex
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 XX X ACROS**  
**USB3FTV 2 S XX X ASTR**

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

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

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

Part number type: **USB3FTV 7 S 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

Due to technical modifications, all information provided is subject to change without prior notice.

Designed by Amphenol Socapex.
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

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

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
Overall dimension

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

<table>
<thead>
<tr>
<th>Part number for coding A</th>
<th>Part number for coding B</th>
<th>Plating</th>
</tr>
</thead>
<tbody>
<tr>
<td>USB3FTV 7S A N F459</td>
<td>USB3FTV 7S B N F459</td>
<td>Nickel</td>
</tr>
<tr>
<td>USB3FTV 7S A G F459</td>
<td>USB3FTV 7S B G F459</td>
<td>Olive drab cadmium</td>
</tr>
<tr>
<td>USB3FTV 7S A ZN F459</td>
<td>USB3FTV 7S B ZN F459</td>
<td>Black zinc nickel</td>
</tr>
</tbody>
</table>
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

<table>
<thead>
<tr>
<th>Part number for coding A</th>
<th>Part number for coding B</th>
<th>Mounting nut option</th>
<th>Plating</th>
</tr>
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<tbody>
<tr>
<td>USB3FTV 7 A N F312</td>
<td>USB3FTV 7 B N F312</td>
<td>Standard castle nut</td>
<td>Nickel ✔</td>
</tr>
<tr>
<td>USB3FTV 7 A G F312</td>
<td>USB3FTV 7 B G F312</td>
<td></td>
<td>Olive drab cadmium</td>
</tr>
<tr>
<td>USB3FTV 7 A ZN F312</td>
<td>USB3FTV 7 B ZN F312</td>
<td></td>
<td>Black zinc nickel ✔</td>
</tr>
<tr>
<td>USB3FTV 7 A N F311</td>
<td>USB3FTV 7 B N F311</td>
<td>Safety castle nut</td>
<td>Nickel ✔</td>
</tr>
<tr>
<td>USB3FTV 7 A G F311</td>
<td>USB3FTV 7 B G F311</td>
<td></td>
<td>Olive drab cadmium</td>
</tr>
<tr>
<td>USB3FTV 7 A ZN F311</td>
<td>USB3FTV 7 B ZN F311</td>
<td></td>
<td>Black zinc nickel ✔</td>
</tr>
</tbody>
</table>

Due to technical modifications, all information provided is subject to change without prior notice.

Designed by Amphenol Socapex.
USB3FTV™ - REDUCED FLANGE RECEPTACLE

Overall dimension

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

<table>
<thead>
<tr>
<th>Part number for coding A</th>
<th>Part number for coding B</th>
<th>Mounting nut option</th>
<th>Plating</th>
</tr>
</thead>
<tbody>
<tr>
<td>USB3FTV 7 SA N F059</td>
<td>USB3FTV 7 SB N F059</td>
<td>Standard castle nut</td>
<td>Nickel</td>
</tr>
<tr>
<td>USB3FTV 7 SA G F059</td>
<td>USB3FTV 7 SB G F059</td>
<td></td>
<td>Olive drab cadmium</td>
</tr>
<tr>
<td>USB3FTV 7 SA ZN F059</td>
<td>USB3FTV 7 SB ZN F059</td>
<td></td>
<td>Black zinc nickel</td>
</tr>
<tr>
<td>USB3FTV 7 SA N F058</td>
<td>USB3FTV 7 SB N F058</td>
<td></td>
<td>Nickel</td>
</tr>
<tr>
<td>USB3FTV 7 SA G F058</td>
<td>USB3FTV 7 SB G F058</td>
<td></td>
<td>Olive drab cadmium</td>
</tr>
<tr>
<td>USB3FTV 7 SA ZN F058</td>
<td>USB3FTV 7 SB ZN F058</td>
<td>Safety castle nut</td>
<td>Black zinc nickel</td>
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</table>

Panel drilling

PCB Layout - Coding A

PCB Layout - Coding B

Due to technical modifications, all information provided is subject to change without prior notice.

Designed by Amphenol Socapex
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 88

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
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<td>USBBFTV - Transversally sealed receptacle</td>
<td>44</td>
</tr>
<tr>
<td>USBBFTV - Stand-off receptacle</td>
<td>48</td>
</tr>
</tbody>
</table>

### USB2.0

- USBFTV™
  - Transversally sealed and hermetic receptacle
  - Stand-off receptacle
  - Through-bulkhead receptacle
  - Receptacle with 360° EMI backshell
  - Atex Zone 2
- USBBFTV
  - Transversally sealed receptacle
  - Stand-off receptacle

**Note:** Due to technical modifications, all information provided is subject to change without prior notice.

**Designed by Amphenol Socapex**
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
- - 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

How to order: Please refer to page 89

Back terminations

<table>
<thead>
<tr>
<th>Type 1:</th>
<th>Type 2:</th>
</tr>
</thead>
<tbody>
<tr>
<td>female USB-A</td>
<td>solder 4 Tinned holes to solder your cable</td>
</tr>
<tr>
<td></td>
<td>View of the PCB of the Type 2 version with 4 tinned holes for solder termination</td>
</tr>
</tbody>
</table>
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

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

Part number type: USBFTV 2 PE 1 X
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**

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

Panel Drilling
**Overall dimension**

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

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

Panel Drilling

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

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

Panel Drilling
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 cm^3 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

**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 ✓
  - 1000 h with marine bronze shell ✓
- Fire retardant / Low smoke: UL94 V0 and EN45545
- Vibrations: 10 - 500 Hz, 10 g, 3 axes: no discontinuity > 1 micro 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

How to order: Please refer to page 90

Back terminations

| USB cable end type A | USB cable end type «OPEN» | ✓ RoHS compliant |
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**

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

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

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

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

Panel Drilling
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

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**

Panel Drilling
**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

<table>
<thead>
<tr>
<th>Panel drilling</th>
<th>PCB Layout</th>
</tr>
</thead>
<tbody>
<tr>
<td>Φ3.26 (1.280)</td>
<td></td>
</tr>
<tr>
<td>23.51</td>
<td></td>
</tr>
<tr>
<td>10.9261</td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Part number for coding A</th>
<th>Part number for coding B</th>
<th>Plating</th>
</tr>
</thead>
<tbody>
<tr>
<td>USBFTV 2S A 5 N F459</td>
<td>USBFTV 2S B 5 N F459</td>
<td>Nickel</td>
</tr>
<tr>
<td>USBFTV 2S A 5 G F459</td>
<td>USBFTV 2S B 5 G F459</td>
<td>Olive drab cadmium</td>
</tr>
<tr>
<td>USBFTV 2S A 5 ZN F459</td>
<td>USBFTV 2S B 5 ZN F459</td>
<td>Black zinc nickel</td>
</tr>
</tbody>
</table>

Due to technical modifications, all information provided is subject to change without prior notice.

Designed by Amphenol Socapex

RoHS compliant
Overall dimension

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

<table>
<thead>
<tr>
<th>Part number for coding A</th>
<th>Part number for coding B</th>
<th>Plating</th>
</tr>
</thead>
<tbody>
<tr>
<td>USBFTV 7 SA 5 N F459</td>
<td>USBFTV 7S B 5 N F459</td>
<td>Nickel</td>
</tr>
<tr>
<td>USBFTV 7 SA 5 G F459</td>
<td>USBFTV 7S B 5 G F459</td>
<td>Olive drab cadmium</td>
</tr>
<tr>
<td>USBFTV 7 SA 5 ZN F459</td>
<td>USBFTV 7S B 5 ZN F459</td>
<td>Black zinc nickel</td>
</tr>
</tbody>
</table>

Panel drilling

PCB Layout
**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

<table>
<thead>
<tr>
<th>Part number for square flange receptacle</th>
<th>Part number for Jam nut receptacle</th>
<th>Plating</th>
</tr>
</thead>
<tbody>
<tr>
<td>USBFTV B 2 N</td>
<td>USBFTV B 7 N</td>
<td>Nickel ✓</td>
</tr>
<tr>
<td>USBFTV B 2 G</td>
<td>USBFTV B 7 G</td>
<td>Olive drab cadmium</td>
</tr>
<tr>
<td>USBFTV B 2 ZN</td>
<td>USBFTV B 7 ZN</td>
<td>Black zinc nickel ✓</td>
</tr>
</tbody>
</table>

Panel Drilling

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

<table>
<thead>
<tr>
<th>Part number for Square flange receptacle</th>
<th>Part number for Jam nut receptacle</th>
<th>Plating</th>
</tr>
</thead>
<tbody>
<tr>
<td>KIT40263</td>
<td>KIT40245</td>
<td>Nickel ✓</td>
</tr>
<tr>
<td>KIT40263G</td>
<td>KIT40245G</td>
<td>Olive drab cadmium</td>
</tr>
<tr>
<td>KIT40263ZN</td>
<td>KIT40245ZN</td>
<td>Black zinc nickel plating ✓</td>
</tr>
</tbody>
</table>

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 91

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 2 S 2 X XX A

Part number type: USBFTVX 2 S 2 X XX OPEN

Panel drilling

JE15 Panel Gasket

Due to technical modifications, all information provided is subject to change without prior notice

Designed by Amphenol Socapex
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**

Panel drilling

Due to technical modifications, all information provided is subject to change without prior notice

Designed by Amphenol Socapex
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

<table>
<thead>
<tr>
<th>MAIN CHARACTERISTICS</th>
<th>ENVIRONMENTAL PROTECTION</th>
</tr>
</thead>
<tbody>
<tr>
<td>- Sealed against fluids and dusts (IP68)</td>
<td>- Sealing (when mated): IP68 (temporary immersion)</td>
</tr>
<tr>
<td>- Shock, vibration and traction resistant</td>
<td>- Salt spray: - 48 h with nickel plating ✔</td>
</tr>
<tr>
<td>- No cabling operation in field and no tools required</td>
<td>- 500 h with olive drab cadmium ✔</td>
</tr>
<tr>
<td>- Improved EMI protection</td>
<td>- 500 h with black zinc nickel ✔</td>
</tr>
<tr>
<td>- Tri Start Thread coupling mechanism (MIL-DTL-38999 series III type)</td>
<td>- 1000 h with marine bronze shell ✔</td>
</tr>
<tr>
<td>with anti-decoupling device - Shell size 15</td>
<td></td>
</tr>
<tr>
<td>- Plug retention in the receptacle: 100N in the axis</td>
<td>- Fire retardant / Low smoke: UL94 V0 and EN45545</td>
</tr>
<tr>
<td>- Mating cycles: 500 minimum</td>
<td>- Vibrations: 10 - 500 Hz, 10 g, 3 axes: no discontinuity &gt; 1 micro s</td>
</tr>
</tbody>
</table>

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 ✔
  - 1000 h with marine bronze shell ✔
- Fire retardant / Low smoke: UL94 V0 and EN45545
- Vibrations: 10 - 500 Hz, 10 g, 3 axes: no discontinuity > 1 micro 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

How to order : Please refer to page 92

Back terminations

<table>
<thead>
<tr>
<th>Type 1:</th>
<th>Type 2:</th>
<th>View of the PCB of the Type 2 version with 4 tinned holes for solder termination</th>
</tr>
</thead>
<tbody>
<tr>
<td>female USB-A</td>
<td>solder 4 Tinned holes to solder your cable</td>
<td></td>
</tr>
</tbody>
</table>

RoHS compliant

Due to technical modifications, all information provided is subject to change without prior notice
Designed by Amphenol Socapex
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`
Overall dimension

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

Due to technical modifications, all information provided is subject to change without prior notice
designed by Amphenol Socapex
### 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 $1.10^{-6}$ cm$^3$ 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

#### 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
- 1000 h with marine bronze shell
- Fire retardant / Low smoke: UL94 V0 and EN45545
- Vibrations: 10 - 500 Hz, 10 g, 3 axes: no discontinuity > 1 micro 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

### How to order

Please refer to page 93

### Back terminations

<table>
<thead>
<tr>
<th>USB cable end type A</th>
<th>USB cable type «OPEN»</th>
</tr>
</thead>
</table>

Due to technical modifications, all information provided is subject to change without prior notice
Designed by Amphenol Socapex
USBBFTV - STAND OFF RECEPTACLE

Description

The USBBFTV enhanced design allows you to mount the connector shell directly on the PC board. Soldering your contacts directly on the board saves 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

<table>
<thead>
<tr>
<th>Part number</th>
<th>Plating</th>
</tr>
</thead>
<tbody>
<tr>
<td>USBBF TV 2 5 N F459</td>
<td>Nickel</td>
</tr>
<tr>
<td>USBBF TV 2 5 G F459</td>
<td>Olive drab cadmium</td>
</tr>
<tr>
<td>USBBF TV 2 5 ZN F459</td>
<td>Black Zinc Nickel</td>
</tr>
</tbody>
</table>
**USBBFTV - STAND OFF RECEPTACLE**

### Overall dimension

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

---

#### Table of Part Numbers and Plating

<table>
<thead>
<tr>
<th>Part number</th>
<th>Plating</th>
</tr>
</thead>
<tbody>
<tr>
<td>USBBF TV 7 5 N F459</td>
<td>Nickel ✓</td>
</tr>
<tr>
<td>USBBF TV 7 5 G F459</td>
<td>Olive drab cadmium</td>
</tr>
<tr>
<td>USBBF TV 7 5 ZN F459</td>
<td>Black Zinc Nickel ✓</td>
</tr>
</tbody>
</table>

---

*Due to technical modifications, all information provided is subject to change without prior notice.*

Designed by Amphenol Socapex

RoHS compliant
CABLES AND CORDSETS

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</thead>
<tbody>
<tr>
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<td>54</td>
</tr>
<tr>
<td>USB2.0 cable and cordset</td>
<td>55</td>
</tr>
</tbody>
</table>

Due to technical modifications, all information provided is subject to change without prior notice.

Designed by Amphenol Socapex.
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 Gen1 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
  
- **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 glossy finish

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
  - 1 250 MHz - 15
  - 2 500 MHz - 25
- **Outer screen resistance**: ≤ 15 Ohm/km
- **Test voltage**: 500 V
- **Impedance**: 90±15% Ohm
- **Attenuation (dB/100m)**
  - 1 MHz - 4,0
  - 4 MHz - 7,8
  - 8 MHz - 11,4
  - 12 MHz - 13,4
  - 24 MHz - 19,0
- **Conductor resistance**: ≤ 85 Ohm/km
- **Insulation resistance**: ≥ 200 MΩm/km
- **Operating voltage**: ≤ 1 000 V
- **Test voltage**: 500 V

**USB2.0 1 X Data Pair**

- **Test voltage**: 500 V
- **Impedance**: 96±15% Ohm
- **Attenuation (dB/100m)**
  - 1 MHz - 4,0
  - 4 MHz - 7,8
  - 8 MHz - 11,4
  - 12 MHz - 13,4
  - 24 MHz - 19,0
  - 48 MHz - 27,0
  - 96 MHz - 36,0
  - 200 MHz - 40,0
  - 400 MHz - 116,0
- **Conductor resistance**: ≤ 85 Ohm/km
- **Insulation resistance**: ≥ 200 MΩm/km

**Power Wire**

- **Conductor resistance**: ≤ 85 Ohm/km
- **Insulation resistance**: ≥ 200 MΩm/km
- **Operating voltage**: ≤ 1 000 V
- **Test voltage**: 500 V

Other characteristics

- Halogen Free Flame Retardant
- Oil resistance acc. to 1584, sec. 480 (60°C)
- Flame retardant acc. to UL 1581, sec. 1090 (H)
- Flame retardant acc. to IEC 60332-1-2
- RoHS compliant (Directive 2011/65/EC)

Resistance to microbial/fungus growth: MIL-STD-810G, method 508.6 = grade 1-2

Min. bending radius allowed: repeated 10 X Ø single 5 X Ø

Permissible temperature range for transport, installation and operating: -40°C up to 85°C

Weight: 46 kg/km

How to order: Please refer from page 94 to 95
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

<table>
<thead>
<tr>
<th>USB2.0</th>
<th>Conductors</th>
<th>2 x 28 AWG Stranded tinned copper wire (Ø0,39mm)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Insulation</td>
<td>Polyethylene (Ø0,9mm)</td>
<td></td>
</tr>
<tr>
<td>Colors</td>
<td>Green and White</td>
<td></td>
</tr>
<tr>
<td>Power 1 X Power Pair</td>
<td>Conductors</td>
<td>2 x 24 AWG Stranded tinned copper wire (Ø0,58mm)</td>
</tr>
<tr>
<td></td>
<td>Insulation</td>
<td>Polyethylene (Ø1,1mm)</td>
</tr>
<tr>
<td></td>
<td>Colors</td>
<td>Red and Black</td>
</tr>
<tr>
<td>Drain Wire</td>
<td>Conductor</td>
<td>26 AWG Stranded tinned copper drain wire</td>
</tr>
<tr>
<td>Overall</td>
<td>Insulation</td>
<td>UV resistant polyurethane (Ø5,1±0,2mm)</td>
</tr>
<tr>
<td></td>
<td>Color</td>
<td>Black</td>
</tr>
</tbody>
</table>

Electrical characteristics at 20°C

<table>
<thead>
<tr>
<th>USB2.0</th>
<th>Test voltage</th>
<th>1000 V</th>
</tr>
</thead>
<tbody>
<tr>
<td>1 X Data Pair</td>
<td>Attenuation (dB/100m)</td>
<td>1 MHz - 4.0</td>
</tr>
<tr>
<td>Power Wire</td>
<td>Conductor resistance</td>
<td>≤ 90 Ohm/km</td>
</tr>
<tr>
<td></td>
<td>Insulation resistance</td>
<td>≥ 20 MΩhm/km</td>
</tr>
<tr>
<td></td>
<td>Operating voltage</td>
<td>≤ 100 V</td>
</tr>
<tr>
<td></td>
<td>Test voltage</td>
<td>1000 V</td>
</tr>
</tbody>
</table>

Other characteristics

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

How to order: Please refer from page 94 to 95
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</tr>
</thead>
<tbody>
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</tr>
<tr>
<td>Composite USB2.0 access point</td>
<td>60</td>
</tr>
<tr>
<td>USB2.0 to type EN3646 - PT/451 - ABS1547 adaptor</td>
<td>65</td>
</tr>
</tbody>
</table>
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
- USB-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

<table>
<thead>
<tr>
<th>Part number</th>
<th>Plating</th>
<th>Metallized inserts (EMI)</th>
</tr>
</thead>
<tbody>
<tr>
<td>USB3 F 2 B SCC</td>
<td>Black coated ✔</td>
<td>No</td>
</tr>
<tr>
<td>USB3 F 2 N SCC</td>
<td>Nickel plated ✔</td>
<td>Yes</td>
</tr>
<tr>
<td>USB3 F 2 G SCC</td>
<td>Olive drab cadmium plated</td>
<td>Yes</td>
</tr>
<tr>
<td>USB3 F 2 ZN SCC</td>
<td>Black Zinc Nickel ✔</td>
<td>No</td>
</tr>
</tbody>
</table>

Important note:
- The part number included the receptacle and the self-closing cap.
- This version is with USB-A in front and back termination.
USB3.2 GEN1 AND USB2.0 ACCESS POINT

Overall dimension

**USB2.0 access point** - With self-closing cap

<table>
<thead>
<tr>
<th>Part number</th>
<th>Plating</th>
<th>Metallized inserts (EMI)</th>
</tr>
</thead>
<tbody>
<tr>
<td>USB F 2 1 B SCC</td>
<td>Black coated ✓</td>
<td>No (blank insert)</td>
</tr>
<tr>
<td>USB F 2 1 N SCC</td>
<td>Nickel plated ✓</td>
<td>Yes</td>
</tr>
<tr>
<td>USB F 2 1 G SCC</td>
<td>Olive drab cadmium plated ✓</td>
<td>Yes</td>
</tr>
<tr>
<td>USB F 2 1 ZN SCC</td>
<td>Black zinc nickel ✓</td>
<td>No</td>
</tr>
</tbody>
</table>

**USBB access point** - With self-closing cap

<table>
<thead>
<tr>
<th>Part number</th>
<th>Plating</th>
<th>Metallized inserts (EMI)</th>
</tr>
</thead>
<tbody>
<tr>
<td>USBB F 2 1 B SCC</td>
<td>Black coated ✓</td>
<td>No (blank insert)</td>
</tr>
<tr>
<td>USBB F 2 1 N SCC</td>
<td>Nickel plated ✓</td>
<td>Yes</td>
</tr>
<tr>
<td>USBB F 2 1 G SCC</td>
<td>Olive drab cadmium plated ✓</td>
<td>Yes</td>
</tr>
<tr>
<td>USBB F 2 1 ZN SCC</td>
<td>Black Zinc Nickel ✓</td>
<td>No</td>
</tr>
</tbody>
</table>

**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.

**Due to technical modifications, all information provided is subject to change without prior notice.**

**Designed by Amphenol Socapex**
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

<table>
<thead>
<tr>
<th>MAIN CHARACTERISTICS</th>
<th>APPLICATIONS</th>
</tr>
</thead>
<tbody>
<tr>
<td>- Data transmission: USB specification 2.0</td>
<td>- Access point</td>
</tr>
<tr>
<td>- Data rate: up to 480 Mb/s for high speed USB</td>
<td>- Telecom equipments</td>
</tr>
<tr>
<td>- USB-A</td>
<td>- Video control</td>
</tr>
<tr>
<td>- Sealing level: IP54 when not mated</td>
<td>- Robotics</td>
</tr>
<tr>
<td>- Temperature range: -40°C / +85°C</td>
<td>- Industrial process control</td>
</tr>
<tr>
<td>- RoHS compliant</td>
<td>- CNC machines</td>
</tr>
<tr>
<td></td>
<td>- Special machines</td>
</tr>
</tbody>
</table>

Overall dimension

Square flange access point

Part number: USB AP SCC 21
Overall dimension

Square flange access point - USB-A cordset

<table>
<thead>
<tr>
<th>Part number</th>
<th>Cordset length (Meters)</th>
<th>Cordset length (Feet)</th>
</tr>
</thead>
<tbody>
<tr>
<td>USB AP SCC 22 02 A</td>
<td>0.2</td>
<td>0.66</td>
</tr>
<tr>
<td>USB AP SCC 22 03 A</td>
<td>0.3</td>
<td>0.98</td>
</tr>
<tr>
<td>USB AP SCC 22 05 A</td>
<td>0.5</td>
<td>1.65</td>
</tr>
<tr>
<td>USB AP SCC 22 10 A</td>
<td>1.0</td>
<td>3.28</td>
</tr>
</tbody>
</table>
COMPOSITE USB2.0 ACCESS POINT

Overall dimension
Jam nut access point

Part number: USB AP SCC 7 1

<table>
<thead>
<tr>
<th>Part number</th>
<th>Cordset length (Meters)</th>
<th>Cordset length (Feet)</th>
</tr>
</thead>
<tbody>
<tr>
<td>USB AP SCC 7 2 02 A</td>
<td>0.2</td>
<td>0.66</td>
</tr>
<tr>
<td>USB AP SCC 7 2 03 A</td>
<td>0.3</td>
<td>0.98</td>
</tr>
<tr>
<td>USB AP SCC 7 2 05 A</td>
<td>0.5</td>
<td>1.65</td>
</tr>
<tr>
<td>USB AP SCC 7 2 10 A</td>
<td>1.0</td>
<td>3.28</td>
</tr>
</tbody>
</table>
COMPOSITE USB2.0 ACCESS POINT

Overall dimension
USB-A receptacle and plug

Part number: USB AF 7

<table>
<thead>
<tr>
<th>Part number</th>
<th>Cordset length (Meters)</th>
<th>Cordset length (Feet)</th>
</tr>
</thead>
<tbody>
<tr>
<td>USB AF 6A 200</td>
<td>2.0</td>
<td>3.28</td>
</tr>
<tr>
<td>USB AF 6A 500</td>
<td>5.0</td>
<td>16.40</td>
</tr>
</tbody>
</table>
Overall dimension
USB Mini B receptacle and plug

Part number: USB MINI BF 7 PCB

![USB Mini B receptacle and plug diagram](image)

- Panel drilling
- PCB layout
- Detail A
- Pin assignments

Part number: USB MINI BF 7 PCB 90

![USB Mini B receptacle and plug diagram](image)

- Panel drilling
- PCB layout
- Detail A
- Pin assignments

Part number type: USB MINI BF 6 XXX OPEN

![USB Mini B receptacle and plug diagram](image)

- Panel drilling
- PCB layout
- Detail A
- Pin assignments

<table>
<thead>
<tr>
<th>Part number</th>
<th>Cordset length (Meters)</th>
<th>Cordset length (Feet)</th>
</tr>
</thead>
<tbody>
<tr>
<td>USB MINI BF 6 200 OPEN</td>
<td>2.0</td>
<td>3.28</td>
</tr>
<tr>
<td>USB MINI BF 6 500 OPEN</td>
<td>5.0</td>
<td>16.40</td>
</tr>
</tbody>
</table>

Due to technical modifications, all information provided is subject to change without prior notice.

Designed by Amphenol Socapex
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

<table>
<thead>
<tr>
<th>Part number</th>
<th>ABS1547 part number</th>
<th>Plating</th>
<th>Coding</th>
<th>Self-closing cap</th>
</tr>
</thead>
<tbody>
<tr>
<td>35608N</td>
<td>ABS1547-003A02N</td>
<td>Black anodized</td>
<td>N</td>
<td>No</td>
</tr>
<tr>
<td>35615W</td>
<td>ABS1547-003A02W</td>
<td></td>
<td>W</td>
<td></td>
</tr>
<tr>
<td>35616N</td>
<td>ABS1547-003A03N</td>
<td></td>
<td>N</td>
<td>Yes</td>
</tr>
<tr>
<td>35617</td>
<td>ABS1547-003A03W</td>
<td></td>
<td>W</td>
<td></td>
</tr>
</tbody>
</table>
# Table of contents

<table>
<thead>
<tr>
<th>RUGGED ELECTRONICS</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>USB3FTV™ Memory key</td>
<td>68</td>
</tr>
<tr>
<td>ROK - Rugged Oval Key</td>
<td>69</td>
</tr>
<tr>
<td>USBFTV™ - USB2.0 amplifier</td>
<td>70</td>
</tr>
</tbody>
</table>

Due to technical modifications, all information provided is subject to change without prior notice.

Designed by Amphenol Socapex
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 ✔
- Vibrations: MIL-STD-810H method 514.8
- Temperature range: - 40°C / +85°C (MIL-STD-810F)
- Data transmission during vibration & temperature tests

How to order:

Please refer to page 96

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).
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

<table>
<thead>
<tr>
<th>MAIN CHARACTERISTICS</th>
<th>ENVIRONMENTAL PROTECTION</th>
</tr>
</thead>
<tbody>
<tr>
<td>- Type: USB3.2 Gen1 (capacities 32, 64, 128 &amp; 256 GB)</td>
<td>- Resistance against shocks, fire, vibrations.</td>
</tr>
<tr>
<td>- Compatible with any USB port receptacle.</td>
<td>- Sealed against fluids and dusts : IP68 mated.</td>
</tr>
<tr>
<td>- Black painting</td>
<td>- Storage temperature : -10°C / +70°C.</td>
</tr>
<tr>
<td>DATA TRANSMISSION</td>
<td>- Operating temperature : 0°C / +35°C.</td>
</tr>
<tr>
<td>- USB3.2 Gen1 max transfer rate : 5 Gb/s</td>
<td></td>
</tr>
<tr>
<td>- Compatible with USB2.0 transfer with 480Mb/s.</td>
<td></td>
</tr>
</tbody>
</table>

How to order: Please refer to page 97

Overall dimension

Part number type: USB3F KEY XXX X

Due to technical modifications, all information provided is subject to change without prior notice

Designed by Amphenol Socapex
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

Example of configurations

Panel drilling

Panel drilling

RoHS compliant

Due to technical modifications, all information provided is subject to change without prior notice
Designed by Amphenol Socapex

70
USBFTV - USB2.0 AMPLIFIER

Example of configurations

USB amplifier selection guide

Define your own solution by selecting options in the scheme below

1. Define the type of USB cable end:
   - Open end (without connector), standard USB Type A plug or USBFTV plug.
   - If you want a USBFTV plug:
     - Nickel plated, Olive drab cadmium plated or Black zinc nickel plated.
     - Protective cap or not.

   Define the length of L1:
   - Maximum 4.8 meters

2. Define the USB amplifier:
   - Square flange or jam nut receptacle.
   - Nickel plated, Olive drab cadmium plated or Black zinc nickel plated.
   - Protective cap or not.

3. Define the type of plug:
   - Standard USB Type A plug or USBFTV plug.
   - If you want a USBFTV plug:
     - Nickel plated, Olive drab cadmium plated or Black zinc nickel plated.
     - Protective cap or not.

   Define the length of L1:
   - Maximum 4.8 meters

Define the type of USB cable end:
- Open end (without connector), standard USB Type A plug, USBFTV receptacle or USBFTV plug.
- If you want a USBFTV receptacle:
  - Square flange or jam nut receptacle.
  - Female USB Type A or soldered cable.
  - Transversally sealed for soldered cable termination or not.
  - Backshell or not.
  - Nickel plated, Olive drab cadmium plated or Black zinc nickel plated.
  - Protective cap or not.

For any specific configuration please contact us: technicalsupport@amphenol-socapex.fr
<table>
<thead>
<tr>
<th>Type</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Cables and cordsets</td>
<td>Cables and cordsets</td>
</tr>
<tr>
<td>Adapters and access points</td>
<td>Adapters and access points</td>
</tr>
</tbody>
</table>

Due to technical modifications, all information provided is subject to change without prior notice.

Designed by Amphenol Socapex.
ACCESSORIES

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</tr>
</thead>
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<td></td>
</tr>
<tr>
<td>Self-closing cap - USBFTV™</td>
<td>74</td>
</tr>
<tr>
<td>Panel gasket and tool</td>
<td></td>
</tr>
</tbody>
</table>

Compatibility table

<table>
<thead>
<tr>
<th></th>
<th>Connectors</th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>USB3FTV™</td>
<td>USBFTV™</td>
<td>USBBFTV</td>
</tr>
<tr>
<td>STANDARD PROTECTIVE</td>
<td>USBFTV C</td>
<td>USBFTV C</td>
<td>USBFTV C</td>
</tr>
<tr>
<td>CAP</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>REDUCED FLANGE</td>
<td>USBFTV C F057</td>
<td>USBFTV C F057</td>
<td>/</td>
</tr>
<tr>
<td>PROTECTIVE CAP</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>METALLIC SELF-CLOSING</td>
<td>USBFTV SCC</td>
<td>USBFTV SCC</td>
<td>USBFTV SCC</td>
</tr>
<tr>
<td>CAP</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>PANEL GASKET</td>
<td>JE15</td>
<td>JE15</td>
<td></td>
</tr>
<tr>
<td>TOOL</td>
<td>USBF ODE</td>
<td>USBF ODE</td>
<td>/</td>
</tr>
<tr>
<td>REDUCED FLANGE TOOL</td>
<td>809684</td>
<td>/</td>
<td>/</td>
</tr>
</tbody>
</table>

Due to technical modifications, all information provided is subject to change without prior notice
Designed by Amphenol Socapex
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 98

Overall dimension

<table>
<thead>
<tr>
<th>Cap type</th>
<th>Metallic chain length (mm)</th>
<th>Nylon cord length (mm)</th>
<th>Stainless steel rope length (mm)</th>
</tr>
</thead>
<tbody>
<tr>
<td>USBFTV C 2 &amp; USBFTV C 7</td>
<td>127 (+13,-7)</td>
<td>127 (+13,-7)</td>
<td></td>
</tr>
<tr>
<td>USBFTV C 6</td>
<td>160±5</td>
<td>160±5</td>
<td></td>
</tr>
</tbody>
</table>
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

<table>
<thead>
<tr>
<th>Part number</th>
<th>Plating</th>
</tr>
</thead>
<tbody>
<tr>
<td>USBFTV SCC B</td>
<td>Black coating</td>
</tr>
<tr>
<td>USBFTV SCC N</td>
<td>Nickel</td>
</tr>
<tr>
<td>USBFTV SCC G</td>
<td>Olive drab cadmium</td>
</tr>
<tr>
<td>USBFTV SCC ZN</td>
<td>Black Zinc Nickel</td>
</tr>
</tbody>
</table>

RoHS compliant
Panel gasket for square flange receptacle

<table>
<thead>
<tr>
<th>Part number</th>
<th>Thickness (mm)</th>
<th>Color</th>
<th>Picture</th>
</tr>
</thead>
<tbody>
<tr>
<td>JE15</td>
<td>0.6</td>
<td>Blue</td>
<td></td>
</tr>
<tr>
<td>JE18</td>
<td>0.6</td>
<td>Black</td>
<td></td>
</tr>
</tbody>
</table>

Tool

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 theeth 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.
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<td>82</td>
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</table>
ASSEMBLY INSTRUCTION - USB3FTV™

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

Recommended Torque value:

<table>
<thead>
<tr>
<th></th>
<th>Body</th>
<th>Gland</th>
<th>Hex-nut</th>
</tr>
</thead>
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<tr>
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<td></td>
<td></td>
</tr>
<tr>
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<td>Hand-tightens</td>
<td></td>
</tr>
<tr>
<td>USB3FTV 2 PE</td>
<td></td>
<td>Hand-tightens</td>
<td></td>
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<tr>
<td>USB3FTV 2 PEM</td>
<td>7.5 Nm</td>
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</tr>
<tr>
<td><strong>Receptacle</strong></td>
<td></td>
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<tr>
<td>USB3FTV 7</td>
<td></td>
<td>Hand-tightens</td>
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<tr>
<td>USB3FTV 7 PE</td>
<td></td>
<td>Hand-tightens</td>
<td>8.6 Nm</td>
</tr>
<tr>
<td>USB3FTV 7 PEM</td>
<td>7.5 Nm</td>
<td>2.5 to 6.5 Nm</td>
<td>8.6 Nm</td>
</tr>
</tbody>
</table>

Assembly video

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

- Amphenol USBFIELD assembly - Rugged USB connector
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.
ASSEMBLY INSTRUCTION - USBFTV™ AND USBBFTV

Notes:
- Can be assembled with all standard USB cordsets.
- No tool required.

### Recommend Torque Value:

<table>
<thead>
<tr>
<th>Assembly</th>
<th>Body</th>
<th>Gland</th>
<th>Hex-nut</th>
</tr>
</thead>
<tbody>
<tr>
<td>Plug</td>
<td>USBFTV 6</td>
<td>/</td>
<td>/</td>
</tr>
<tr>
<td></td>
<td>USBFTV 2 PE</td>
<td>/</td>
<td>/</td>
</tr>
<tr>
<td></td>
<td>USBFTV 2 PEM</td>
<td>7.5 Nm</td>
<td>2.5 to 6.5 Nm</td>
</tr>
<tr>
<td>Receptacle</td>
<td>USBFTV 7</td>
<td>/</td>
<td>8.6 Nm</td>
</tr>
<tr>
<td></td>
<td>USBFTV 7 PE</td>
<td>/</td>
<td>8.6 Nm</td>
</tr>
<tr>
<td></td>
<td>USBFTV 7 PEM</td>
<td>7.5 Nm</td>
<td>2.5 to 6.5 Nm</td>
</tr>
</tbody>
</table>

### Assembly Video

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

- Amphenol USBFIELD assembly - Rugged USB connector
## HOW TO ORDER

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*Due to technical modifications, all information provided is subject to change without prior notice.*

*Designed by Amphenol Socapex*
## HOW TO ORDER - USB3FTV™ PLUG AND RECEPTACLE

<table>
<thead>
<tr>
<th>1. Series</th>
<th>2. Shell type</th>
<th>3. Coding (for plug with cordset only)</th>
<th>4. Cordset length (for plug with cordset only)</th>
<th>5. Backshell (for receptacle only)</th>
<th>6. Shells material &amp; finish</th>
<th>7. Type of cable (for plug with cordset only)</th>
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</thead>
<tbody>
<tr>
<td>USB3FTV</td>
<td>6</td>
<td>A</td>
<td>03</td>
<td>G</td>
<td>PE</td>
<td>ACROS</td>
</tr>
</tbody>
</table>

### 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 length (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]

### 5. Backshell (for receptacle only)
- **Without backshell**
- **Metal backshell**

### 6. Shells material & finish
- **G**: Aluminium shell
- **N**: Nickel plating
- **ZN**: Black Zinc Nickel plating
- **BZ**: Marine bronze shell

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

### Examples:

<table>
<thead>
<tr>
<th>Part number</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>USB3FTV6A10GOPEN</td>
<td>USB3FTV, plug, coding A, olive drab cadmium plating, 1.0m cordset with open end</td>
</tr>
<tr>
<td>USB3FTV2APEG</td>
<td>USB3FTV, square flange receptacle with metal backshell, coding A, olive drab cadmium plating</td>
</tr>
<tr>
<td>USB3FTV7AZN</td>
<td>USB3FTV, jam nut receptacle, coding A, black zinc nickel plating</td>
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</table>
## HOW TO ORDER - USB3FTV™ - TRANSVERSALLY SEALED AND HERMETIC RECEPTACLE

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<thead>
<tr>
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<th></th>
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</thead>
<tbody>
<tr>
<td>USB3FTV</td>
<td>2S</td>
<td>A</td>
<td>03</td>
<td>G</td>
<td>ACROS</td>
</tr>
</tbody>
</table>

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

### 2. Shell type
- **2S**: Square flange receptacle
- **2H**: Transversely sealed
- **7S**: Jam nut receptacle
- **7H**: Hermetic

### 3. Coding
- **A**: Coding A
- **B**: Coding B

### 4. Cordset length
- **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]

### 5. Shell material and finish
- **G**: Aluminium shell
- **N**: Nickel plating
- **ZN**: Black Zinc Nickel plating
- **BZ**: Marine bronze shell

### 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

### Examples:

<table>
<thead>
<tr>
<th>Part number</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>USB3FTV2SA03ZOPEN</td>
<td>USB3FTV, transversally sealed square flange receptacle, coding A, black zinc nickel plating, 0.3m cable with open end</td>
</tr>
<tr>
<td>USB3FTV7HA055GASTR</td>
<td>USB3FTV, hermetic jam nut receptacle, coding A, olive drab cadmium plating, 0.5m straight USB3.0 cable with USB-A plug at the end</td>
</tr>
<tr>
<td>USB3FTV2HA15NACROS</td>
<td>USB3FTV, hermetic square flange receptacle, coding A, nickel plating, 1.5m crossed USB3.0 cable with USB-A plug at the end</td>
</tr>
</tbody>
</table>
HOW TO ORDER - USB3FTV™ - VG96949

1. Series
   VG96949-03

2. Shell type
   C Plug
   A Square flange receptacle
   B Jam nut receptacle

3. Shell size
   15 Shell size 15

4. Coding
   N Coding N

5. Shell material & finish
   A Olive Drab Cadmium plating
   HI Aluminium shell
   J Tin Zinc plating
   B Marine bronze shell

Examples:

<table>
<thead>
<tr>
<th>Part number</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>VG96949-03C15NJ</td>
<td>VG96949-03 USB3FTV, plug, coding N, tin zinc plating</td>
</tr>
<tr>
<td>VG96949-03A15N</td>
<td>VG96949-03 USB3FTV, square flange receptacle , coding N, olive drab cadmium plating</td>
</tr>
<tr>
<td>VG96949-03B15NB</td>
<td>VG96949-03 USB3FTV, jam nut receptacle, coding N, marine bronze shell</td>
</tr>
</tbody>
</table>

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Designed by Amphenol Socapex
HOW TO ORDER - USBFTV™ - PLUG AND RECEPTACLE

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<table>
<thead>
<tr>
<th></th>
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<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>USBFTV</td>
<td>7</td>
<td>PEM</td>
<td>2</td>
<td>G</td>
</tr>
</tbody>
</table>

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)**
   - PE: Plastic gland
   - PEM: Metal backshell

4. **Back terminations (receptacle only)**
   - 1: Female USB-A
   - 2: Solder (4 tinned holes)

5. **Shells material & finish**
   - G: Olive Drab Cadmium plating
   - N: Aluminium shell
   - ZN: Black Zinc Nickel
   - BZ: Marine bronze shell

**Examples:**

<table>
<thead>
<tr>
<th>Part number</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>USBFTV6G</td>
<td>USBFTV, plug, olive drab cadmium plating</td>
</tr>
<tr>
<td>USBFTV2PE2N</td>
<td>USBFTV, square flange receptacle with metal backshell and plastic gland, solder back termination, nickel plating</td>
</tr>
<tr>
<td>USBFTV7PEM2N</td>
<td>USBFTV, jam nut receptacle with metal backshell and metal gland, solder back termination, nickel plating</td>
</tr>
</tbody>
</table>

Due to technical modifications, all information provided is subject to change without prior notice.

Designed by Amphenol Socapex
## HOW TO ORDER - USBFTV™ - TRANSVERSALLY SEALED AND HERMETIC RECEPTACLE

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<thead>
<tr>
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<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>USBFTV</td>
<td></td>
<td></td>
<td>S</td>
<td>A</td>
<td>2</td>
<td>G</td>
<td>03</td>
<td>OPEN</td>
</tr>
</tbody>
</table>

### 1. Series
- **USBFTV**: USB2.0 Field Series (USB-A)

### 2. Shell type
- **2**: Square flange receptacle
- **7**: Jam nut receptacle

### 3. Backshell
- **PE**: Without backshell
- **PEM**: Metal backshell
- **Plastic gland**: Plastic gland
- **Metal gland**: Metal gland

### 4. Sealing type
- **S**: Transversally sealed receptacle
- **H**: Hermetic receptacle

### 5. Coding
- **A**: Coding A
- **B**: Coding B

### 6. Back terminations
- **2**: USB2.0 cable

### 7. Shell material & finish
- **G**: Olive Drab Cadmium plating
- **N**: Nickel plating
- **ZN**: Black Zinc Nickel

### 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]

### 9. USB Cable end
- **A**: USB-A plug
- **OPEN**: Open USB2.0 cable without plug at the end

### Examples:
- **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
- **USBFTV2PMSA2N03A**: 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

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<th>4. Back terminations (for receptacle only)</th>
<th>5. Shell material &amp; finish</th>
<th>6. Cordset length (for receptacle only)</th>
<th>7. USB Cable end (for receptacle only)</th>
</tr>
</thead>
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<td>2S</td>
<td>A</td>
<td>2</td>
<td>G</td>
<td>03</td>
<td>A</td>
</tr>
</tbody>
</table>

### 1. Series
- USBFTVX: USB2.0 Field Series (USB-A) for ATEX Zone 2

### 2. Shell type
- 6: Plug
- 2S: Square flange receptacle
- 7S: Jam 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: Aluminium shell
- N: Nickel plating
- ZN: Black Zinc Nickel
- BZ: Marine bronze shell

### 6. Cordset length (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

### Examples:

<table>
<thead>
<tr>
<th>Part number</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>USBFTVX6G</td>
<td>USBFTV for ATEX zone 2, plug, olive drab cadmium plating</td>
</tr>
<tr>
<td>USBFTVX7SA2G03A</td>
<td>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</td>
</tr>
<tr>
<td>USBFTVX7SA2N03OPEN</td>
<td>USBFTV for ATEX zone 2, transversally sealed jam nut receptacle, coding A, nickel plating, 0.3m USB2.0 cable with open end</td>
</tr>
</tbody>
</table>
# HOW TO ORDER - USBBFTV - PLUG AND RECEPTACLE

<table>
<thead>
<tr>
<th>Series</th>
<th>Shell type</th>
<th>Backshell (receptacle only)</th>
<th>Back terminations (receptacle only)</th>
<th>Shell material &amp; finish</th>
</tr>
</thead>
<tbody>
<tr>
<td>USBBFTV</td>
<td>7</td>
<td>PEM</td>
<td>2</td>
<td>G</td>
</tr>
</tbody>
</table>

### 1. Series

<table>
<thead>
<tr>
<th>Series</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>USBBFTV</td>
<td>USB2.0 Field Series (USB-B)</td>
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</table>

### 2. Shell type

<table>
<thead>
<tr>
<th>Shell type</th>
<th>Description</th>
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<tbody>
<tr>
<td>6</td>
<td>Plug</td>
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<tr>
<td>2</td>
<td>Square flange receptacle</td>
</tr>
<tr>
<td>7</td>
<td>Jam nut receptacle</td>
</tr>
</tbody>
</table>

### 3. Backshell (receptacle only)

<table>
<thead>
<tr>
<th>Backshell</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Without backshell</td>
<td>Plastic gland</td>
</tr>
<tr>
<td>Metal backshell</td>
<td>Metal gland (back termination 2 only)</td>
</tr>
</tbody>
</table>

### 4. Back terminations (receptacle only)

<table>
<thead>
<tr>
<th>Back terminations</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Female USB-A</td>
</tr>
<tr>
<td>2</td>
<td>Solder (4 tinned holes)</td>
</tr>
</tbody>
</table>

### 5. Shell material and finish

<table>
<thead>
<tr>
<th>Shell material &amp; finish</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>G</td>
<td>Olive Drab Cadmium plating</td>
</tr>
<tr>
<td>N</td>
<td>Aluminium shell</td>
</tr>
<tr>
<td>ZN</td>
<td>Nickel plating</td>
</tr>
<tr>
<td>BZ</td>
<td>Marine bronze shell</td>
</tr>
</tbody>
</table>

### Examples:

<table>
<thead>
<tr>
<th>Part number</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>USBBFTV6ZN</td>
<td>USBBFTV, plug, black zinc nickel plating</td>
</tr>
<tr>
<td>USBBFTV2PE1N</td>
<td>USBBFTV, square flange receptacle with metal backshell and plastic gland, female USB-A back termination, nickel plating</td>
</tr>
<tr>
<td>USBBFTV2ZN</td>
<td>USBBFTV, square flange receptacle, solder back termination, nickel plating</td>
</tr>
</tbody>
</table>

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Due to technical modifications, all information provided is subject to change without prior notice.

Designed by Amphenol Socapex
# HOW TO ORDER - USBBFTV - TRANSVERSALLY SEALED RECEPTACLE

<table>
<thead>
<tr>
<th></th>
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<th></th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>USBBFTV</td>
<td>2</td>
<td>PE</td>
<td>S</td>
<td>2</td>
<td>G, N</td>
<td>03, 05, 10, 15</td>
<td>A</td>
</tr>
</tbody>
</table>

### 1. Series
- **USBBFTV**: USB2.0 Field Series (USB-B)

### 2. Shell type
- 2: Square flange receptacle
- 7: Jam nut receptacle

### 3. Backshell
- PE: Metal backshell
- PEM: Plastic gland
- Without backshell

### 4. Sealing type
- S: Transversally sealed receptacle

### 5. Back terminations
- 2: USB2.0 cable

### 6. Shell material & finish
- G: Aluminium shell
- N: Nickel plating
- ZN: Black Zinc Nickel
- BZ: Marine bronze shell

### 7. Corset length
- 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

## Examples:

<table>
<thead>
<tr>
<th>Part number</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>USBBFTV7S2N03A</td>
<td>USBBFTV, transversally sealed jam nut receptacle, nickel plating, 0.3m USB2.0 cable with USB-A plug at the end</td>
</tr>
<tr>
<td>USBBFTV2S2G05OPEN</td>
<td>USBBFTV, transversally sealed square flange receptacle, olive drab cadmium plating, 0.5m USB2.0 cable with open end</td>
</tr>
<tr>
<td>USBBFTV7S2G10A</td>
<td>USBBFTV, transversally sealed jam nut receptacle, olive drab cadmium plating, 1.0m USB2.0 cable with USB-A plug at the end</td>
</tr>
</tbody>
</table>
## HOW TO ORDER - CABLE

<table>
<thead>
<tr>
<th>Part number</th>
<th>USB</th>
<th>Length</th>
</tr>
</thead>
<tbody>
<tr>
<td>191-030943-00</td>
<td>USB3.2 Gen1</td>
<td>300m</td>
</tr>
<tr>
<td>190-040567-00</td>
<td>USB2.0</td>
<td>300m</td>
</tr>
</tbody>
</table>

Due to technical modifications, all information provided is subject to change without prior notice.

Designed by Amphenol Socapex
### HOW TO ORDER - CORDSET

<table>
<thead>
<tr>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>USB3</td>
<td>AA</td>
<td>CROSSING</td>
<td>050</td>
<td>PU HFFR</td>
</tr>
<tr>
<td>USB2</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

**1. Series**
- USB3: USB3.2 Gen1 Cordset
- USB2: USB2.0 Cordset

**2. Shell type**
- AA: Cordset with overmolded USB type A plug on each end

**3. Wiring (USB3.0 cordset only)**
- CROSSING: 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 cordset will be out of his specification over 3.00m length.
- USB2.0 cordset will be out of his specification over 4.80m length.

**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:**

<table>
<thead>
<tr>
<th>Part number</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>USB2AA450PUHFFR</td>
<td>USB2.0 cordset with overmolded USB type A plug on each end, 4.5m length</td>
</tr>
<tr>
<td>USB3AACROSSED150PUHFFR</td>
<td>USB3.2 Gen1 cordset with overmolded USB type A plug on each end, 1.5m length with crossed wiring</td>
</tr>
<tr>
<td>USB3AASTRAIGHT200PUHFFR</td>
<td>USB3.2 Gen1 cordset with overmolded USB type A plug on each end, 2.0m length with straight wiring</td>
</tr>
</tbody>
</table>

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Designed by Amphenol Socapex.
## HOW TO ORDER - USB3FTV™ MEMORY KEYS

<table>
<thead>
<tr>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>USB3FTVKEY6</td>
<td>A</td>
<td>64</td>
<td>G</td>
<td>CAP</td>
<td>APA UV</td>
</tr>
</tbody>
</table>

### 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. Shells material and finish
- G: Olive Drab Cadmium plating
- N: Aluminium shell, Nickel plating
- ZN: Marine bronze shell
- BZ: Black Zinc Nickel

### 5. Cap
- Without protective cap: CAP
- With protective cap: Mandatory

### 6. Mandatory
- APA UV: Mandatory

### Examples:

<table>
<thead>
<tr>
<th>Part number</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>USB3FTVKEY6A64GCAPAPAUV</td>
<td>USB3FTV memory key, coding A, 64Gb capacity, olive drab cadmium plating, with protective cap</td>
</tr>
<tr>
<td>USB3FTVKEY6A128NAPAUV</td>
<td>USB3FTV memory key, coding A, 128Gb capacity, nickel plating, without protective cap</td>
</tr>
<tr>
<td>USB3FTVKEY6A256ZNCAPAPAUV</td>
<td>USB3FTV memory key, coding A, 256Gb capacity, black zinc nickel plating, with protective cap</td>
</tr>
</tbody>
</table>
## HOW TO ORDER - ROK - RUGGED OVAL KEY

<table>
<thead>
<tr>
<th>Series</th>
<th>Capacity</th>
<th>Plating</th>
</tr>
</thead>
<tbody>
<tr>
<td>USB3FKEY</td>
<td>16</td>
<td>B</td>
</tr>
</tbody>
</table>

**1. Series**
- **USB3FKEY**: Rugged Oval Key

**2. Shell type**
- 16 Gb
- 32 Gb
- 64 Gb
- 128 Gb
- 256 Gb

**3. Series**
- **B**: Black painting

### Examples:

<table>
<thead>
<tr>
<th>Part number</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>USB3FKEY16B</td>
<td>Rugged Oval Key, 16Gb capacity, black painting</td>
</tr>
<tr>
<td>USB3FKEY64B</td>
<td>Rugged Oval Key, 64Gb capacity, black painting</td>
</tr>
<tr>
<td>USB3FKEY256B</td>
<td>Rugged Oval Key, 256Gb capacity, black painting</td>
</tr>
</tbody>
</table>

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Designed by Amphenol Socapex
### HOW TO ORDER - STANDARD PROTECTIVE CAP

<table>
<thead>
<tr>
<th>Series</th>
<th>Connector type</th>
<th>Rope type</th>
<th>Shells material and finish</th>
<th>Deviation</th>
</tr>
</thead>
<tbody>
<tr>
<td>USBFTVC</td>
<td></td>
<td>7</td>
<td>G</td>
<td>F057</td>
</tr>
</tbody>
</table>

1. **Series**
   - USBFTVC: USBFTV standard protective cap

2. **Connector type**
   - 6: Plug
   - 2: Square flange receptacle
   - 7: Jam nut receptacle

3. **Rope type**
   - M: Nylon cord
   - MR: Metallic chain
   - BMR: 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

### Examples:

<table>
<thead>
<tr>
<th>Part number</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>USBFTVC2N</td>
<td>USBFTV protective cap for square flange receptacle, nylon cord, nickel plating</td>
</tr>
<tr>
<td>USBFTVC2MRN</td>
<td>USBFTV protective cap for square flange receptacle, stainless steel rope with teflon jacket, nickel plating</td>
</tr>
<tr>
<td>USBFTVC6ZN</td>
<td>USBFTV protective cap for plug, nylon cord, black zinc nickel plating</td>
</tr>
</tbody>
</table>
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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