



**ITT**

Interconnect Solutions

## Audio XL



*Engineered for life*

# Cannon, VEAM, BIW

## A Historical Achievement of Technology Leadership

### Defining and Championing Innovation

Showcasing a portfolio of creativity, ITT's "Engineered For Life" execution embraces products which have become ubiquitous in a broad collection of markets including: Military/Aerospace, Civil Aircraft, Industrial Instrumentation, Medical, Oil & Gas, Energy, Transportation, Telecom/Handset, Computer, Consumer, and Automotive.

ITT's rich interconnect history embraces contributions to both technological breakthroughs and social movements. With one of the industry's broadest product offerings, ITT's interconnect products have supported:

- Every Free World space mission, bringing the universe to our doorstep.
- Motion picture, radio, and television equipment, serving laughter and entertainment to millions.
- Commercial and military communications systems, linking the voices of the world.
- Computerized tools, reshaping the information highway.
- Aircraft, rapid transit, and automobiles, mobilizing our expanding society.
- Oil and natural gas production, powering the world's economies.
- Agricultural equipment, attacking the roots of world hunger.



# ITT Interconnect Solutions

ITT Interconnect Solutions is a division of the multi-national ITT Corporation, a \$7.8 billion dollar global enterprise representing the brands Cannon, VEAM, and BIW. Our connector portfolio remains the most extensive in the industry offering the most reliable and cost effective range of interconnect solutions. These innovations have enabled ITT to provide products and technologies to such markets as:

- Automotive
- Computer/Consumer
- Industrial/Instrumentation
- Military/Aerospace
- Oil Fields
- Telecom/Handset
- Transportation

When you specify a Cannon, VEAM or BIW connector, you can rely on a product designed, developed, and manufactured to the highest quality and reliability standards. This tradition of excellence is based on ITT's corporate culture of operating its businesses under the principles of Six Sigma. At ITT, Six Sigma is not just a quality philosophy but a complete corporate culture that drives the entire business. Our Value Based Management and Value Based Product Development systems are two cornerstones that allow for the development of both leadership and product engineering principles, ensuring the correct industry leading products are developed to the accepted market driven lead times. These principles have allowed ITT to become the market leader in all of our business portfolios.

## Six Sigma Manufacturing

ITT operates manufacturing facilities in the United States, Germany, Italy, Mexico, China, Japan and the UK, all of which have particular product area strengths allowing ITT to offer a truly global footprint to our customers. Our facilities are world class and accommodate full vertical integration utilizing the latest manufacturing technologies including: automated and robotic machining centers, Super Market manufacturing cells, Kanban pull systems, and automated electrical, mechanical, and optical test and inspection equipment. The combination of our manufacturing strength and our

advanced manufacturing facilities allows ITT to offer products at market driven prices. Our capabilities, especially in robotics, computerized precision tooling, Kaizen Project Management, Six Sigma tools, and testing, give ITT the most optimized global manufacturing footprint in the interconnect industry.

## The Custom Difference

As the industry leader in harsh environment interconnect applications, ITT's world class engineering teams will work directly with our customers to design and develop cost effective solutions for their applications. In many cases we may modify one of our standard designs to ensure a highly reliable solution where timing is critical. Yet, in those cases where a complete custom interconnect solution is required, ITT will work with our customer's Engineers to design an interconnect solution which will be cost effective yet highly reliable. As professional consultants, our Engineering teams will provide a thorough systems and mechanical analysis of any proposed solution. These analyses provide our customers with sophisticated electrical signal and mechanical characterizations to determine the best solution for their application.

## RoHS Compliance Information

ITT has implemented a strict parts control plan for all ITT electronics plants worldwide that allows the Cannon, VEAM, and BIW connector product portfolios to meet the requirements of European Union Directive 2002/95/EC better known as the Reduction of Hazardous Substances initiative. As appropriate, specific Cannon, VEAM, and BIW products may be ordered with an R prefix number which insures our customers will receive RoHS compliant parts for their commercial electronics applications and equipment. Since most RoHS hazardous substances center around specific metal plating and lead solder coatings, ITT's products for RoHS compliance are available in the following plating finishes: electroless nickel, stainless steel, Anodize over aluminum and Gold plating. It should be noted that gold plating would be recommended as the replacement for tin-lead solder when ordering board mount connectors.



# Cannon Audio XL

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## In today's audio markets, demanding customers have many choices. Why choose ITT Interconnect Solutions?

Cannon pioneered the first Audio connectors during the early 1920's, the birth of the entertainment industry. Continuing our innovation in these markets, Cannon has moved beyond these early products into today's digital age. Cannon's expertise stems from a commitment to the entertainment industry, a commitment extending longer than any other supplier. Cannon's audio product line offers a broad spectrum of choices encompassing low cost products for less demanding applications to higher-end connectors for applications requiring extra durability.

First introduced by Cannon in 1958, the overwhelming industry acceptance of our XLR connectors culminated in the recent induction into the TECnology Hall of Fame by the Mix Foundation for Excellence in Audio, further symbolizing our instrumental participation in the advancement of audio technology. This recognition substantiates Cannon's XLR as the industries leading audio connector.



In addition to the XLR, global audio and video professionals specify our XLM-PCB connectors. These connectors display such high reliability that they are also preferred by such industries as military, medical, test/instrumentation, transportation, and industrial.








Today, we proudly introduce our new Mini-XL series designed to meet the audio industries demands for a higher density, robust interconnect solutions. The Mini-XL connector represents a 40% reduction in size over our standard

XLR connector. This quick, one touch connect/disconnect circular connector incorporates a design optimized for a wide variety of applications where space is a premium. Be assured, all of our audio connectors are RoHS compliant.

Moving back to our original question, which company's audio connectors have invented the standard since audience's first marveled at the first "talking" motion pictures? Audio professionals know the answer. ITT ICS Cannon continues to own center stage with audio products that have served laughter and entertainment to millions.

## XL Series Quick Reference Selection Guide

|  | XLR Plug   | XLR Receptacle  | XLM-PCB Receptacle  | Mini-XL Plug  | Mini-XL Receptacle  |
|--|--|---|---|---|---|
|  |                                 |  |  |  |  |
| Number of Contacts                     | 2 to 7   | 2 to 7  | 3   | 3 to 6  | 3 to 6  |
| Rated Current                          | 5A to 15A  | 5A to 15A   | 3A  | 3A  | 3A  |
| Rated Voltage (AC)                     | 2 Pin 200V<br>3-7 pin 133V   | 2 Pin 200V<br>3-7 pin 133V  | 133V  | 125V  | 125V  |
| Dielectric Withstanding Voltage (AC)   | 2 pin 1600V<br>3-7 pin 1400V   | 2 pin 1600V<br>3-7 pin 1400V  | 1,400V  | 250V  | 250V  |
| Insulation Resistance                  | 5,000mΩ min at 500 VDC   |   |   |   |   |
| Contact Resistance                     | 2-4 pins 5mΩ max<br>5-7 pins 10mΩ max  | 2-4 pins 5mΩ max<br>5-7 pins 10mΩ max   | PCS: 20mΩ max<br>PCV: 30mΩ max<br>PCH: 50mΩ max                                   | 30mΩ max  | 30mΩ max  |
| Durability Cycles                      | 500 Cycles   |   |   |   |   |
| Operating Temperature                  | -35° C ~ +125° C   |   | -35° C ~ +85° C   |   |   |
| Wire Accommodation Reference AWG (Max) | 2-3 pin #14<br>4 pin #16<br>5-6 pin #18<br>7 pin #20   | -   | -   | #24   | -   |
| Wire Cross Section (Max)               | 2-3 pin 2.1mm <sup>2</sup><br>4 pin 1.3mm <sup>2</sup><br>5-6 pin 0.8mm <sup>2</sup><br>7 pin 0.5mm <sup>2</sup> | -   | -   | 0.2mm <sup>2</sup>  | -   |
| Contact Material/Finish                | Copper/Silver<br>Optional Gold Plating   | Copper/Silver<br>Optional Gold Plating  | Copper/Silver<br>Optional Gold Plating  | Copper/Gold   | Copper/Gold   |
| Body Material/Finish                   | Aluminum/ Satin<br>Nickel  | Aluminum/ Satin<br>Nickel   | Zinc/Nickel   | Copper/Nickel   | Copper/Nickel   |
| Packaging                              | 10 pieces per bag  | 10 pieces per tray  | 25 pieces per tray  | 50 pieces per box   | Male Flange: 100 pcs per box<br>Female Flange: 50 pcs per tray                      |
| RoHS                                   | Yes  | Yes   | Yes   | Yes   | Yes   |
| Page Number                            | 9  | 9-11  | 18-19   | 23-24   | 25  |

XLR, and XLM-PCB are all intermatable but can not be mated with our Mini-XL Series.



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**XLR**

**High grade professional use audio and other low level circuit applications. Two to seven position plugs and receptacles featuring shock absorbing resilient rubber insulator and light weight aluminum shell.**

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**XLM-PCB**

**Three position PCB mount receptacles with metal shell for improved EMI shielding, nylon insulator, PCB retention feature and separate ground contact.**

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**Mini-XL Series NEW**

**Mini XL**

**Three to six position plugs and receptacles that are 40% smaller in size and weight than our standard XLR connector.**

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**XLR Series General Performance Characteristics**

ITT's broad range of XLR connectors are extensively used in a wide variety of audio OEM applications.

The XLR Series features a quick disconnect latch lock along with a rugged design to withstand extended field use. Available in configurations of 2 and 7 positions, our plugs and receptacles offer precision, machined contacts, shock-absorbing rubber insulators, and lightweight aluminum shells. All XLR connectors are RoHS Compliant.



First introduced in 1958, these connectors have been so instrumental in the advancement of audio technology that our XL series was inducted into the TECnology Hall of Fame in 2007. Today our connectors continue to lead the way into the digital revolution.

**Applications**

- Amplifiers
- Equalizers
- Mixers
- Medical Electronics
- Recording Equipment
- Test Instruments
- Industrial Control Devices
- Microphones
- TV Cameras

**Product Features and Benefits**

- Rugged design to withstand extreme field use
- Resilient socket insulator which minimizes vibration and electrical noise
- Quick disconnect latch lock
- Low reflectivity satin finish
- Interchangeable and intermateable with XLB-PCB and XLM-PCB

**Performance Specifications**

|                                      |                   |  |                        |
|--------------------------------------|-------------------|--|------------------------|
| Temperature Rating                   | -35°C to +125°C   | Insulation Resistance                  | 5,000MΩ min at 500 VDC |
| Number of Contacts                   | 2 to 7            | Contact Resistance                     | 5m Ω Max to 10m Ω Max  |
| Rated Current                        | 5A to 15A         | Durability Cycles                      | 500 Mating Cycles      |
| Rated Voltage(AC)                    | 133V to 200V      | Wire Accommodation Reference AWG (Max) | #14 to #20             |
| Dielectric Withstanding Voltage (AC) | 1,400V to 1,600 V | Wire Cross Selection (Max)             | 0.5mm to 2.1mm         |

**Materials and Finishes**

| Description | Material                          | Finish/Treatment |
|-------------|-----------------------------------|------------------|
| Contacts    | Copper Alloy                      | Silver or Gold   |
| Insulator   | Socket- Chloroprene<br>Pin- Nylon | -                |
| Shell       | Aluminum Alloy*                   | Satin Nickel     |
| Barrel      | Steel                             | Nickel           |
| Bushing     | Chloroprene                       | -                |
| Latch Lever | Steel                             | Nickel           |

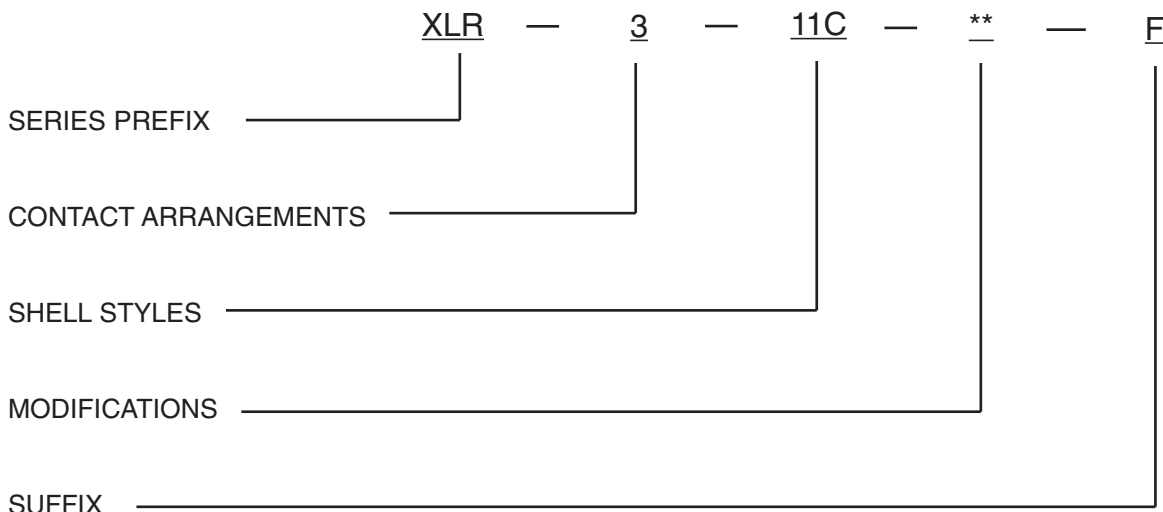
\* For adapters XLR-3-11-11-F/XLR-3-12-12-F the material is brass

Dimensions shown in mm (inch)  
Specifications and dimensions subject to change

www.ittcannon.com



XLR Part Number Selection Guide



**CONNECTOR SERIES**

XLR

**CONTACT ARRANGEMENTS**

See below 2A, 3, 4, 5, 6, 6A, 7

**SHELL STYLE**

- 11C - Female Plug
- 12C - Male Plug
- 13 - Female Round Flange Receptacle
- 14 - Male Round Flange Receptacle
- 31 - Female Rectangular Flange Receptacle
- 32 - Male Rectangular Flange Receptacle

**MODIFICATIONS**

- F77 - Rectangular Small Flange (Receptacle 31 and 32)
- F512 - Rectangular Mini-Flange (Receptacle 32 only)
- A176 - Gold plated contacts (for 2-6 pins)
- \* 7 pins are gold plated contacts as standard,-A176 not necessary
- \*\*Black shell available, contact factory

**SUFFIX**

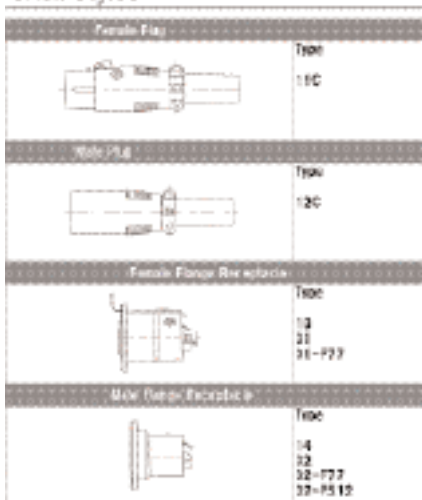
P/N's XLR-3-11-11, XLR-3-12-12 assigned for Bulkhead Adapters only  
 "F" to identify lead free products.  
 XLR series products are RoHS compliant.

| XLR Series  |                    |                    |                    |                    |                    |                    |                    |
|---|--------------------|--------------------|--------------------|--------------------|--------------------|--------------------|--------------------|
| Number of Contacts  | 2                  | 3                  | 4                  | 5                  | 6                  |                    | 7                  |
|   | 2A                 | 3                  | 4                  | 5                  | 6                  | 6A                 | 7                  |
| Contact Arrangement Configuration<br>(Engaging View Pin Insert) |                    |                    |                    |                    |                    |                    |                    |
| Wire AWG Max  | #14                | #14                | #16                | #18                | #18                | #18                | #20                |
| Wire Cross Section Max  | 2.1mm <sup>2</sup> | 2.1mm <sup>2</sup> | 1.3mm <sup>2</sup> | 0.8mm <sup>2</sup> | 0.8mm <sup>2</sup> | 0.8mm <sup>2</sup> | 0.5mm <sup>2</sup> |

Series Variations

| Series/Shell Styles | Contact Arrangement |   |   |   |   |    |   |
|---------------------|---------------------|---|---|---|---|----|---|
|                     | 2A                  | 3 | 4 | 5 | 6 | 6A | 7 |
| 11C                 | ★                   | ★ | ★ | ★ | ★ | ★  | ★ |
| 12C                 | ★                   | ★ | ★ | ★ | ★ | ★  | ★ |
| 13                  | ★                   | ★ | ★ | ★ | ★ | ★  | ★ |
| 14                  | ★                   | ★ | ★ | ★ | ★ | ★  | ★ |
| XLR 31              | ★                   | ★ | ★ | ★ | ★ | ★  | ★ |
| 32                  | ★                   | ★ | ★ | ★ | ★ | ★  | ★ |
| 31-F77              | ★                   | ★ | ★ | ★ | ★ | ★  | ★ |
| 32-F77              | ★                   | ★ | ★ | ★ | ★ | ★  | ★ |
| 32-F512             | ★                   | ★ | ★ | ★ | ★ | ★  | ★ |

Shell Styles



Dimensions shown in mm (inch)

Specifications and dimensions subject to change

www.ittcannon.com



XLR Plugs

Female Plug

XLR- \*-11C



See page 13 for assembly instructions

Male Plug

XLR- \*-12C



See page 13 for assembly instructions

Receptacles

Female Round Flange Receptacle

XLR- \*-13



See page 15 for panel cutouts.  
See Page 22 for latch lever assembly/removal instructions.

Male Round Flange Receptacle

XLR- \*-14



See page 15 for panel cutouts.

Dimensions shown in mm (inch)  
Specifications and dimensions subject to change

www.ittcannon.com



XLR Receptacles

**Female Rectangular Flange Receptacle**

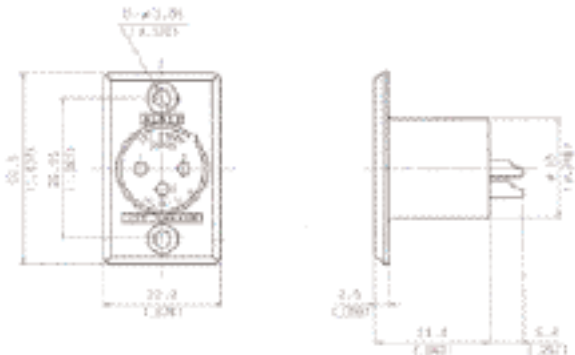
XLR-★-31



See page 15 for panel cutouts.  
See page 22 for latch lever assembly/removal instructions.

**Male Rectangular Flange Receptacle**

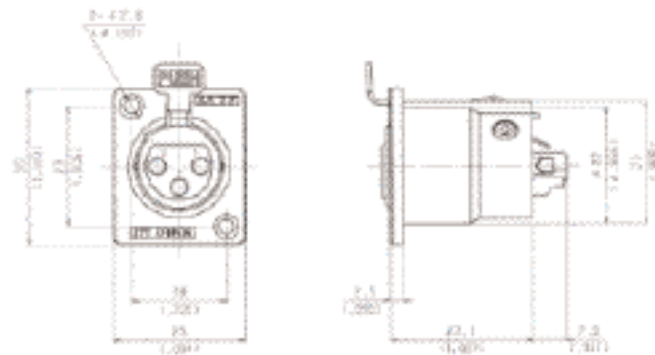
XLR-★-32



See page 15 for panel cutouts.

**Female Rectangular Small Flange Receptacle**

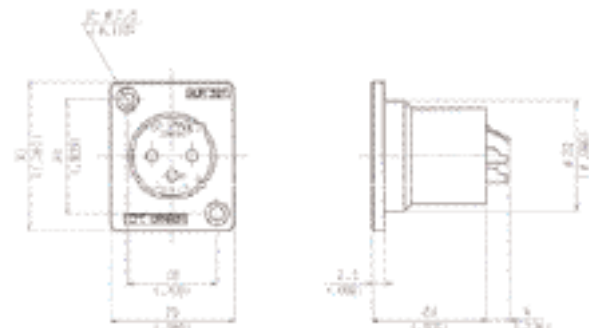
XLR-★-31-F77



See page 15 for panel cutouts.  
See page 22 for latch lever assembly/removal instructions.

**Male Rectangular Small Flange Receptacle**

XLR-★-32-F77



See page 15 for panel cutouts.



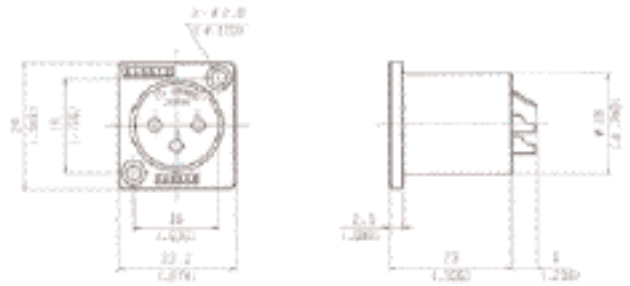
Dimensions shown in mm (inch)  
Specifications and dimensions subject to change

www.ittcannon.com

XLR Receptacles and Bulkhead Adapters

Male Rectangular Mini Flange Receptacle

XLR- ★-32-F512



See page 15 for panel cutouts.

Bulkhead Adapters

Female-Female Bulkhead

XLR-3-11-11-F



Male-Male Bulkhead

XLR-3-12-12-F



Dimensions shown in mm (inch)  
Specifications and dimensions subject to change

www.ittcannon.com



|            | Plastic   | Metallic (Brass)  | For use with (Shell Styles)          |
|------------|---|---|--------------------------------------|
| Female Cap | <br>XLR-SDC (M01)<br>127007-0284 | <br>XLR-13RC<br>127007-0244 | 11C<br>13<br>31<br>31-F77            |
| Male Cap   | <br>XLR-PDC (M01)<br>127007-0283 | <br>XLR-14PC<br>127007-0243 | 12C<br>14<br>32<br>32-F77<br>32-F512 |

**Small Bushing F502**



Note: Small bushing is available separately . Standard bushing is supplied with plug.

**Pin/Socket Insert Assembly**



XLR-3-socket Insert Assembly  
127007-0051

Contact factory for other pin configurations.



XLR-3-pin Insert Assembly  
127007-0115



Dimensions shown in mm (inch)  
Specifications and dimensions subject to change

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| Number of Contacts | Strip Dimensions    |                |
|--------------------|---------------------|----------------|
|                    | A<br>mm (inch)      | B<br>mm (inch) |
| 2,3                | 6.0~7.0 (.236-.276) | 15mm (.591)    |
| 4                  | 5.0~6.0 (.197-.236) | 15mm (.591)    |
| 5,6                | 4.5~5.5 (.177-.217) | 15mm (.591)    |
| 7                  | 2.5~3.5 (.098-.138) | 15mm (.591)    |



First, strip the wire to dimension, as shown.



Insert bushing into shell.



Slide shell assembly and insulator tube onto cable.

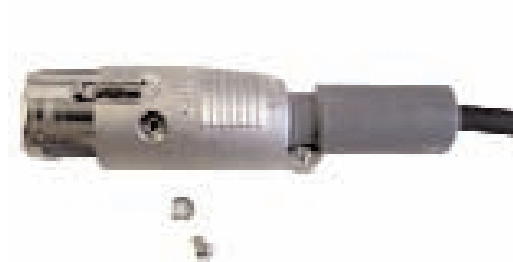


Preparing Insert Assembly; Solder individual center conductors to each contact. Visually inspect solder joints before proceeding.





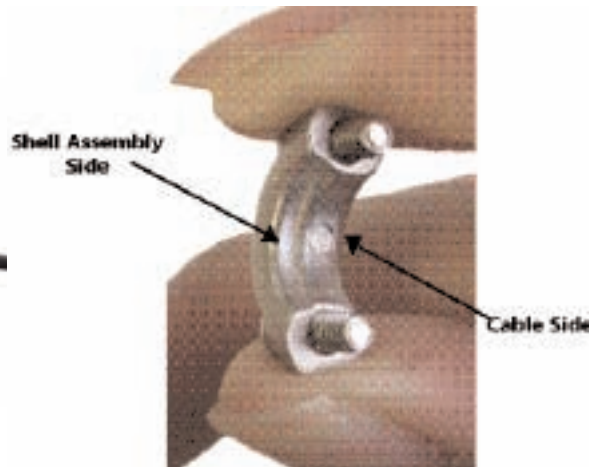
Supporting the insert assembly in one hand, slide the insulator tube and shell assembly into position, as shown.



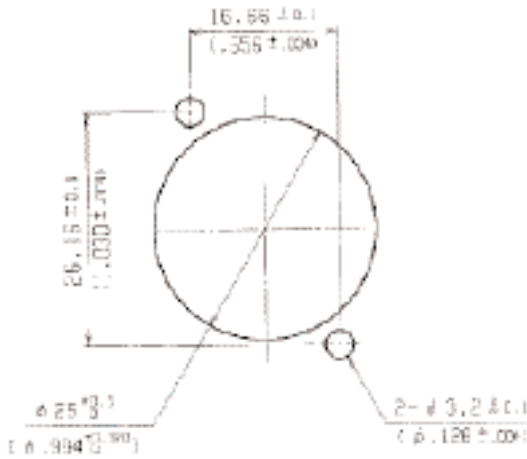
Once assembled, fasten shell assembly with screw and washer. Please make sure to use washer with screw.



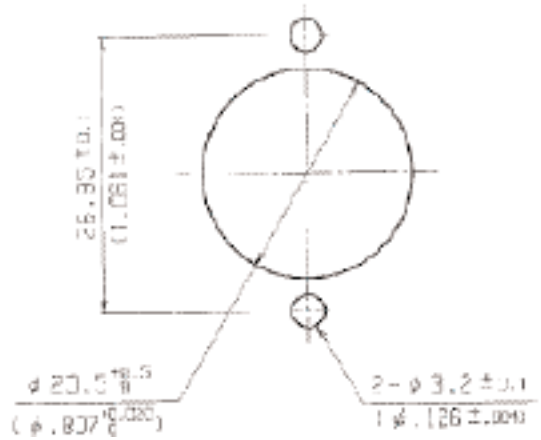
Finally, screw clamp onto the shell assembly to lock cable into position. Please take extra precaution to orientate clamp into its proper position. The inside chamfer with the largest diameter must butt against the shell assembly. Perform a light pull test and visually inspect finished assembly.



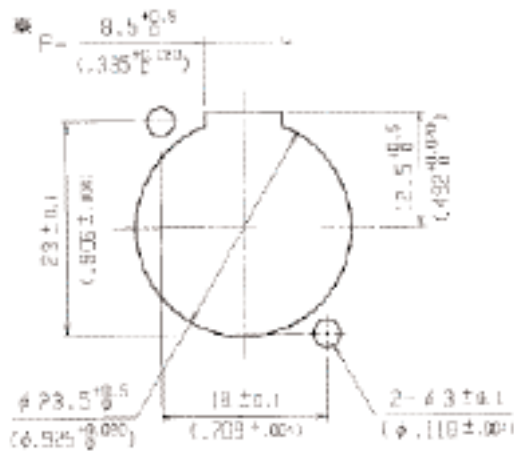
XLR Panel Cutouts



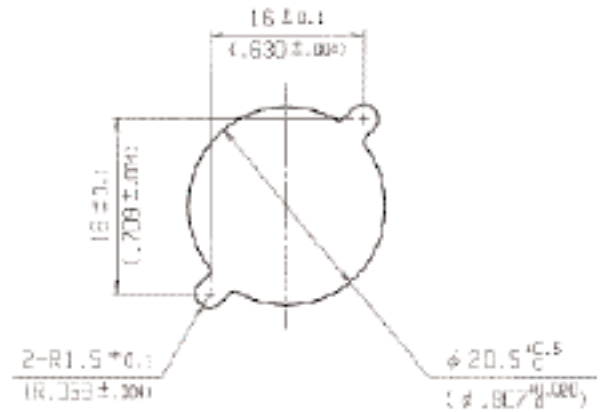
XLR-31



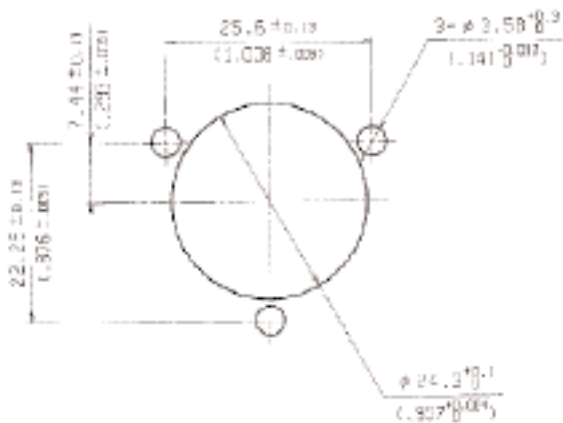
XLR-32



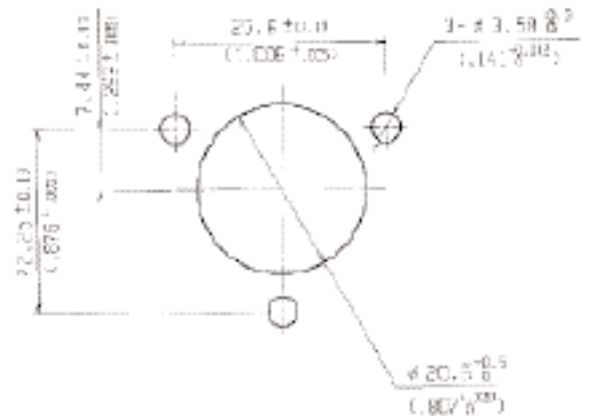
XLR-31/32-F77



XLR-32-F512



XLR-13



XLR-14

**XLM- Printed Circuit Board Series General Performance Characteristics**

ITT's XLM male and female PCB metal flange mount receptacles offer durability, reliability, space savings and greatly improved EMI shielding over our plastic XLB-PCB connectors. Ease of installation is enhanced since the grounding terminal can be used to temporarily fasten the connector to the circuit board during assembly. The XLM-PCB connectors are interchangeable and intermateable with our XLR series. All XLM-PCB connectors are RoHS Compliant.



**Applications**

- Amplifiers
- Equalizers
- Mixers
- Medical Electronics
- Recording Equipment
- Test Instruments
- Industrial Control Devices
- Microphones
- TV Cameras

**Product Features and Benefits**

- PCB mount type with metal shell and barrel made as one piece
- Nylon or PBT insulator (UL94V-O)
- Improved EMI Shielding
- Space saving (smaller flange)
- Snap-in PCB retention feature
- Separate ground contact
- Quick disconnect latch lock
- Interchangeable and Intermateable with XLR Series

**Performance Specifications**

|                                      |                |                       |                        |
|--------------------------------------|----------------|-----------------------|------------------------|
| Temperature Rating                   | -35°C to +85°C | Insulation Resistance | 5,000MΩ min at 500 VDC |
| Number of Contacts                   | 3              | Durability Cycles     | 500 Mating Cycles      |
| Rated Current                        | 3A             | Contact Resistance    | PCS: 20mΩmax           |
| Rated Voltage(AC)                    | 133V           |                       | PCV: 30mΩmax           |
| Dielectric Withstanding Voltage (AC) | 1,400V         |                       | PCH: 50mΩmax           |

**Materials and Finishes**

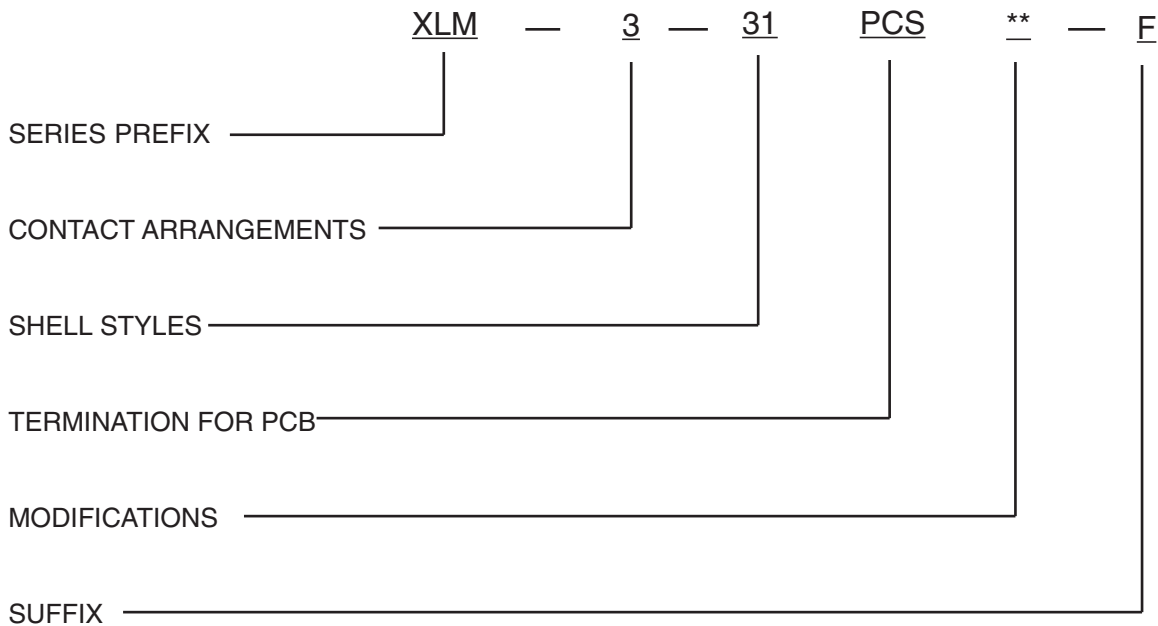
| Description     | Material     | Finish/Treatment |
|-----------------|--------------|------------------|
| Female Contacts | Copper Alloy | Silver or Gold   |
| Male Contacts   | Copper Alloy | Silver or Gold   |
| Insulator       | Nylon or PBT | -                |
| Shell/Barrel    | Zinc Alloy   | Nickel           |
| Grounding Lug   | Copper Alloy | Tin              |
| Latch Lever     | Steel        | Nickel           |



Dimensions shown in mm (inch)  
Specifications and dimensions subject to change

www.ittcannon.com

**XLM-PCB Part Number Selection Guide**



**CONNECTOR SERIES**

XLM

**CONTACT ARRANGEMENTS**

See below 3 pins only

**SHELL STYLE**

- 31 - Female Rectangular Flange Receptacle
- 32 - Male Rectangular Flange Receptacle

**TERMINATION FOR PCB**

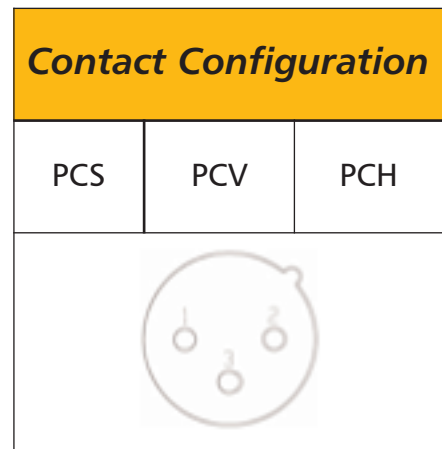
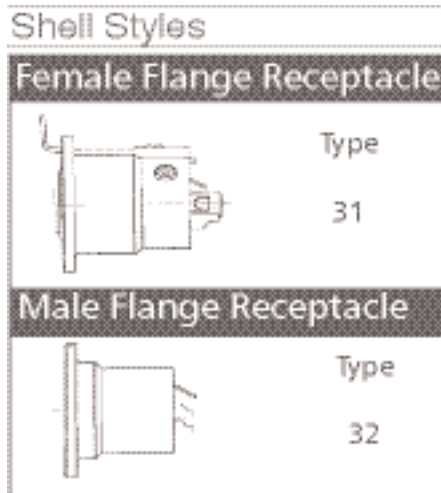
- PCS - Straight Termination
- PCV - Vertical 90° Termination
- PCH-L - Horizontal Left Side Termination (rear view)
- PCH-R - Horizontal Right Side Termination (rear view)

**MODIFICATIONS**

A176 - Gold plated contacts (for 3 pins)

**SUFFIX**

“F” to identify lead free products  
 XLM series products are RoHS compliant

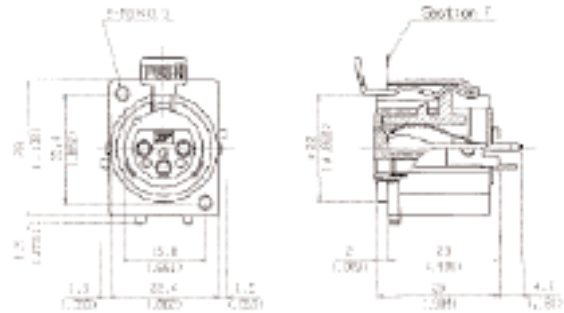


Dimensions shown in mm (inch)  
 Specifications and dimensions subject to change

XLM-PCB Female Flange Receptacles

**Straight Termination**

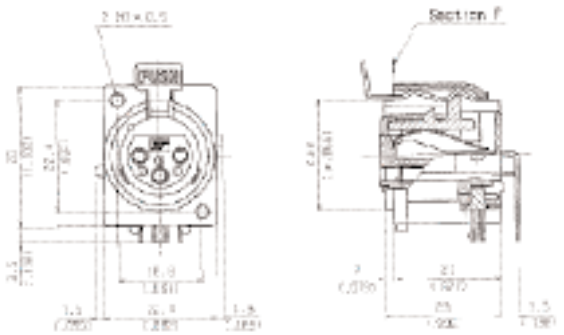
XLM-3-31PCS-F



See page 27 for panel cutouts and PCB Layouts.  
See page 22 for latch lever assembly/removal instructions.

**Vertical 90° Termination**

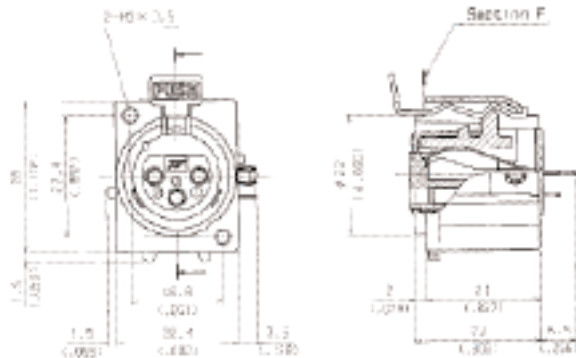
XLM-3-31-PCV-F



See page 27 for panel cutouts and PCB Layouts.  
See page 22 for latch lever assembly/removal instructions.

**Horizontal Left Side Termination**

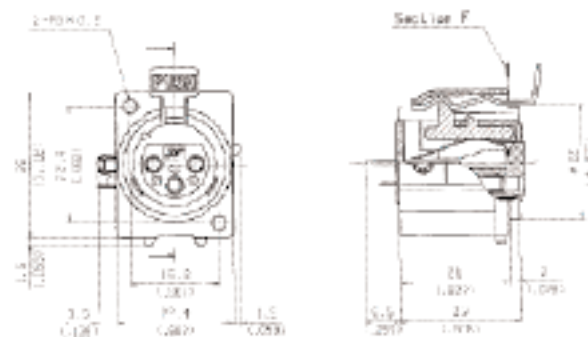
XLM-3-31PCH-L-F



See page 27 for panel cutouts and PCB Layouts.  
See page 22 for latch lever assembly/removal instructions.

**Horizontal Right Side Termination**

XLM-3-31PCH-R-F



See page 27 for panel cutouts and PCB Layouts.  
See page 22 for latch lever assembly/removal instructions.

Note: Section F referenced on line drawing refers to position of flange front face.

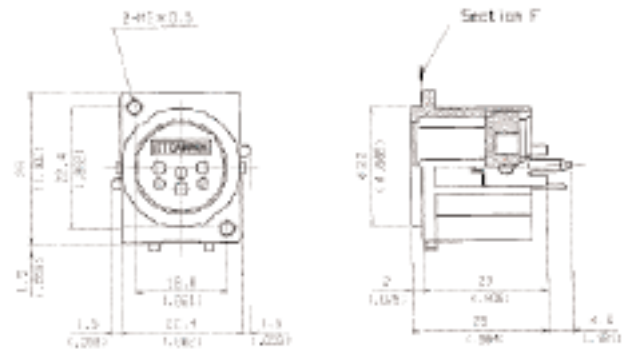




XLM-PCB Male Flange Receptacles

**Straight Termination**

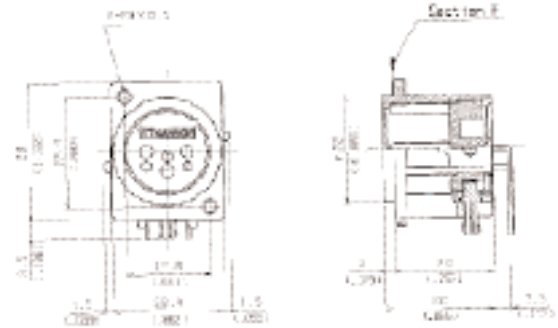
XLM-3-32PCS-F



See page 27 for panel cutouts and PCB Layouts.

**Vertical 90° Termination**

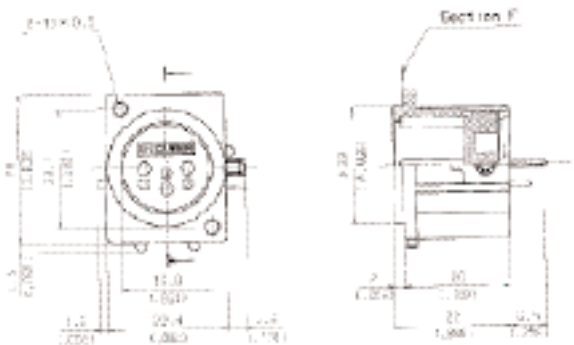
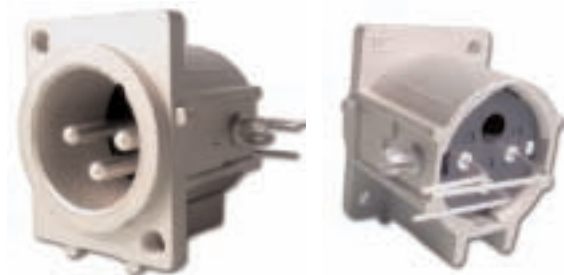
XLM-3-32-PCV-F



See page 27 for panel cutouts and PCB Layouts.

**Horizontal Left Side Termination**

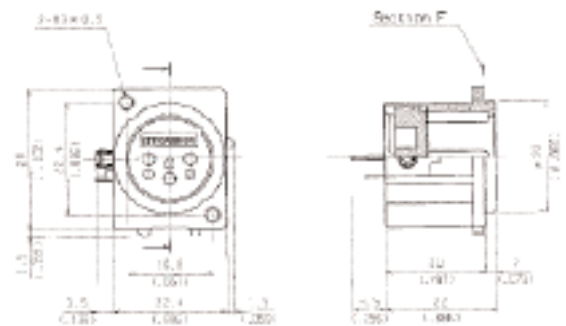
XLM-3-32PCH-L-F



See page 27 for panel cutouts and PCB Layouts.

**Horizontal Right Side Termination**

XLM-3-32PCH-R-F



See page 27 for panel cutouts and PCB Layouts.

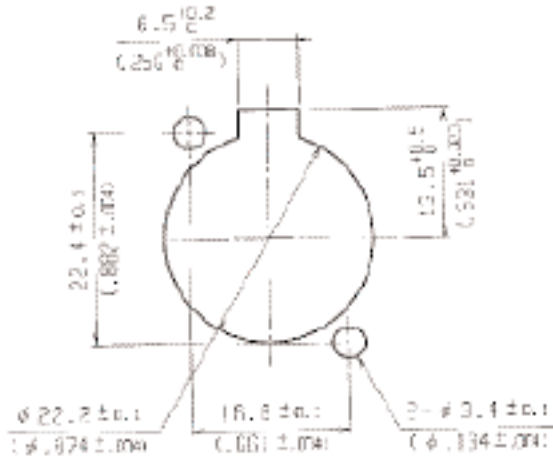
Note: Section F referenced on line drawing refers to position of flange front face.

Dimensions shown in mm (inch)  
Specifications and dimensions subject to change

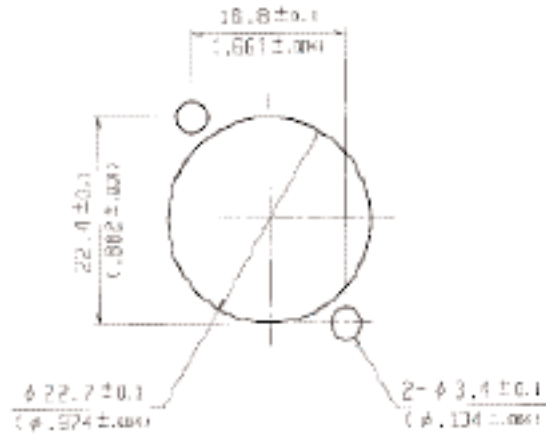
www.ittcannon.com



XLM-PCB Panel Cutouts

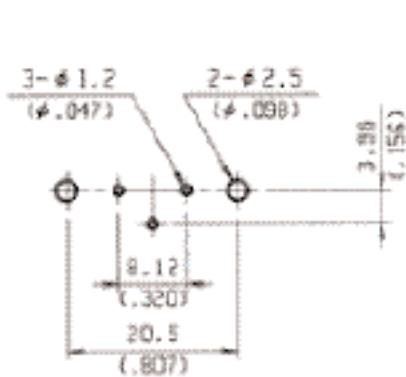


XLM-3-31PCS-F/PCV-F/PCH-L or R-F

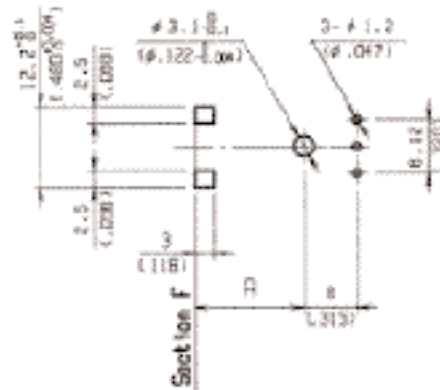


XLM-3-32PCS-F/PCV-F/PCH-L or R-F

Printed Circuit Board Hole Patterns (Ref.)

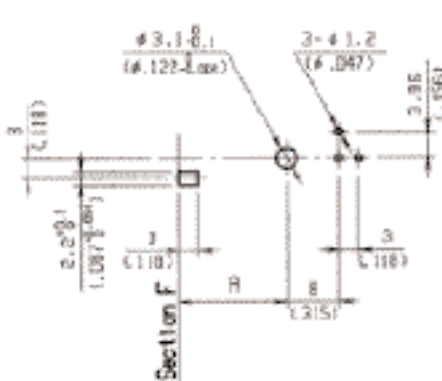


XLM-3-31/32PCS-F



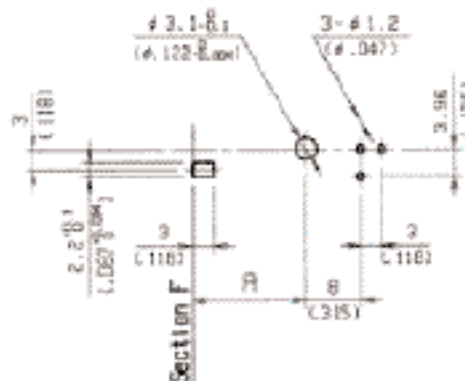
A=XLM-3-31 → 16.5mm (0.650 inch) XLM-3-32 → 15.5mm (0.610 inch)

XLM-3-31/32PCV-F



A=XLM-3-31 → 16.5mm (0.650 inch) XLM-3-32 → 15.5mm (0.610 inch)

XLM-3-31/32PCH-L-F



A=XLM-3-31 → 16.5mm (0.650 inch) XLM-3-32 → 15.5mm (0.610 inch)

XLM-3-31/32PCH-R-F

Note: See page 22 for Latch Lever installation and removal instructions.



Dimensions shown in mm (inch)  
Specifications and dimensions subject to change

www.ittcannon.com

**Mini-XL General Performance Characteristics**

The world’s most sophisticated video, broadcast, and recording equipment require audio connector solutions with high reliability, unparallel performance, and robust durability. ITT Cannon is pleased to introduce the Mini-XL audio connector series. The Mini-XL connector is **40% smaller** than the industries standard XLR connector. Intended to meet the demands for high density compact audio applications, this quick one touch connect/disconnect circular connector is designed to withstand extreme field use. All Mini-XL connects are RoHS compliant.



**Applications**

- Amplifiers
- Equalizers
- Mixers
- Medical Electronics
- Recording Equipment
- Test Instruments
- Industrial Control Devices
- Microphones
- TV Cameras

**Product Features and Benefits**

- Rugged design to withstand extreme field use
- Resilient socket insulator which minimizes vibration and electrical noise
- Quick disconnect latch lock
- Low reflectivity satin finish
- 40% smaller than standard XLR
- Ideal for high density applications
- Contacts are gold plated

**Performance Specifications**

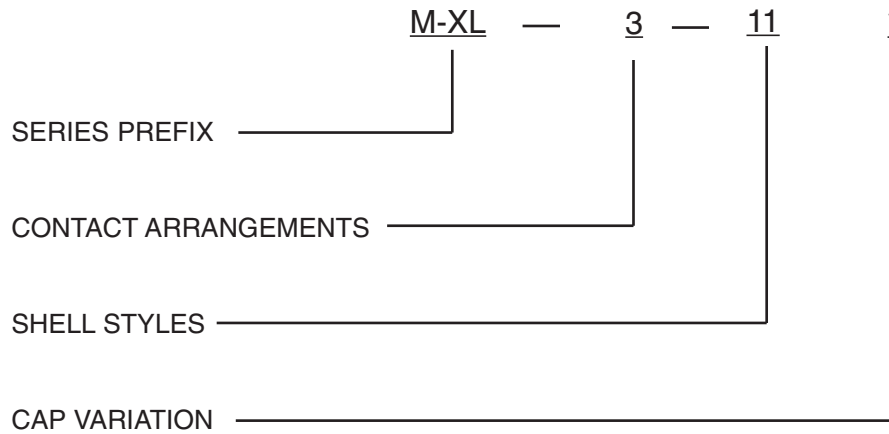
|                                      |                |  |                        |
|--------------------------------------|----------------|--|------------------------|
| Temperature Rating                   | -35°C to +85°C | Insulation Resistance                  | 5,000MΩ min at 500 VDC |
| Number of Contacts                   | 3 to 6         | Durability Cycles                      | 500 Mating Cycles      |
| Rated Current                        | 3A             | Contact Resistance                     | 30mΩmax                |
| Rated Voltage(AC)                    | 125V           | Wire Accommodation Reference AWG (Max) | #24                    |
| Dielectric Withstanding Voltage (AC) | 250V           | Wire Cross Selection (Max)             | 0.2mm                  |

**Materials and Finishes**

| Description | Material                    | Finish/Treatment |
|-------------|-----------------------------|------------------|
| Contacts    | Copper Alloy                | Gold             |
| Insulator   | PPS                         | -                |
| Shell       | Copper Alloy                | Nickel           |
| Barrel      | Copper Alloy                | Nickel           |
| Bushing     | Thermo-plastic Vulcanizates | -                |
| Latch Lever | Steel                       | Nickel           |

Dimensions shown in mm (inch)  
 Specifications and dimensions subject to change

**Mini-XL Part Number Selection Guide**



**CONNECTOR SERIES**

Mini-XL

**NUMBER OF CONTACTS**

See Below 3,4,5,6

**SHELL STYLE**

- 11 - Female Plug
- 12 - Male Plug
- 14 - Male Round Flange Receptacle
- 31 - Female Rectangular Flange Receptacle

**CAP VARIATION**

- S - Small Cap with Bushing (Standard)
- L - Large Cap
- M - Metal Cap

Mini-XL series products are RoHS compliant

**Shell Styles**

|   |             |
|---|-------------|
| <b>Female Plug</b>                          |             |
|   | Type<br>11* |
| *Cap shown 12 S type                        |             |
| <b>Male Plug</b>                            |             |
|   | Type<br>12* |
| *Cap shown 11 S type                        |             |
| <b>Male Flange Receptacle</b>               |             |
|   | Type<br>14  |
| <b>Female Rectangular Flange Receptacle</b> |             |
|   | Type<br>31  |

**Series Variations**

| Series/Shell Styles | Contact Arrangements |   |   |   |   |
|---------------------|----------------------|---|---|---|---|
|                     | 3                    | 4 | 5 | 6 |   |
| <b>Mini-XL</b>      | 11                   | ★ | ★ | ★ | ★ |
|                     | 12                   | ★ | ★ | ★ | ★ |
|                     | 14                   | ★ | ★ | ★ | ★ |
|                     | 31                   | ★ | ★ | ★ | ★ |

| <b>Contact Configuration</b> |                    |                    |                    |                    |
|------------------------------|--------------------|--------------------|--------------------|--------------------|
| Number of Contacts           | 3                  | 4                  | 5                  | 6                  |
| Contact Arrangements         |                    |                    |                    |                    |
| Wire AWG Max                 | #24                | #24                | #24                | #24                |
| Wire Cross Section Max       | 0.2mm <sup>2</sup> | 0.2mm <sup>2</sup> | 0.2mm <sup>2</sup> | 0.2mm <sup>2</sup> |

Mini-XL connects are not intermatable with standard XLR, XLB-PCB, XLM-PCB connectors.



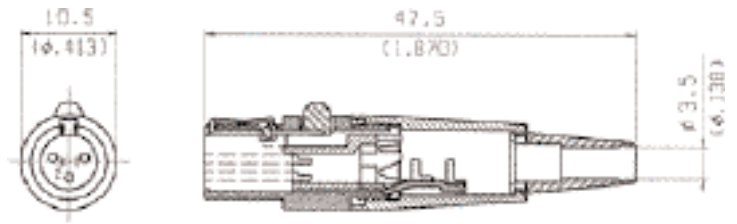
Dimensions shown in mm (inch)  
Specifications and dimensions subject to change

[www.ittcannon.com](http://www.ittcannon.com)

Mini-XL Female Plug

Small Cap with Bushing (Standard)

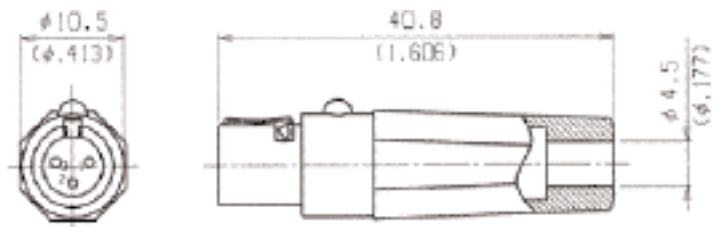
M-XL- \* - 11S



See page 33 for assembly instructions

Large Cap

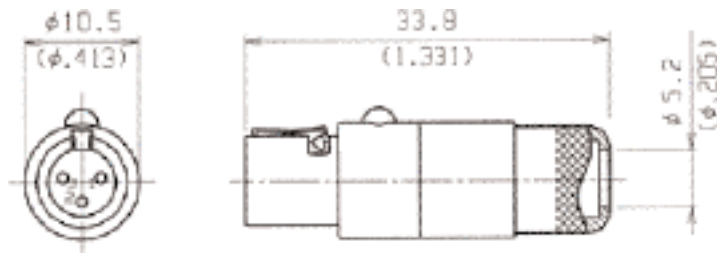
M-XL- \* - 11L



See page 33 for assembly instructions

Metal Cap

M-XL- \* - 11M



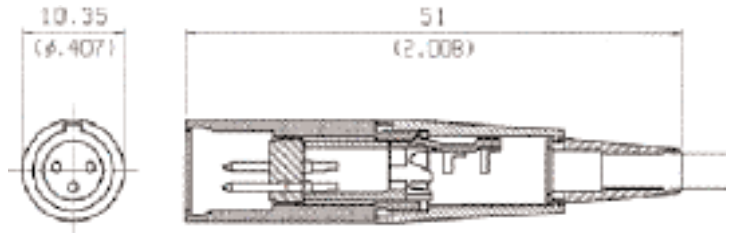
See page 33 for assembly instructions



Mini-XL Male Plug

Small Cap with Bushing (Standard)

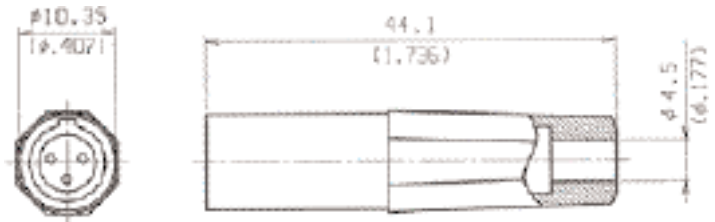
M-XL- \* - 12S



See page 33 for assembly instructions

Large Cap

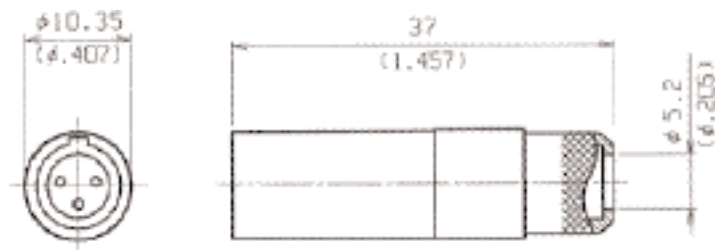
M-XL- \* - 12L



See page 33 for assembly instructions

Metal Cap

M-XL- \* - 12M



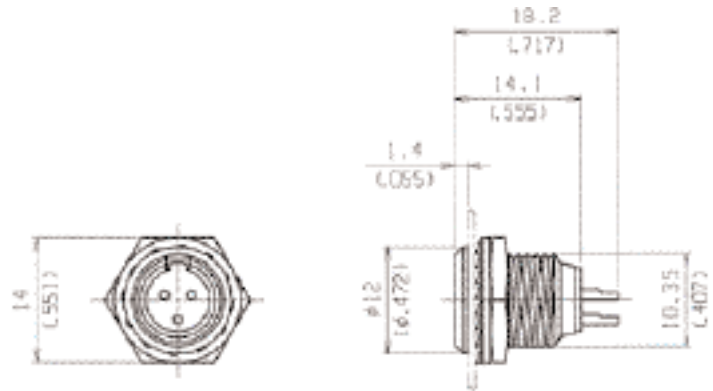
See page 33 for assembly instructions



Mini-XL Flange Receptacles

Male Round Flange Receptacle

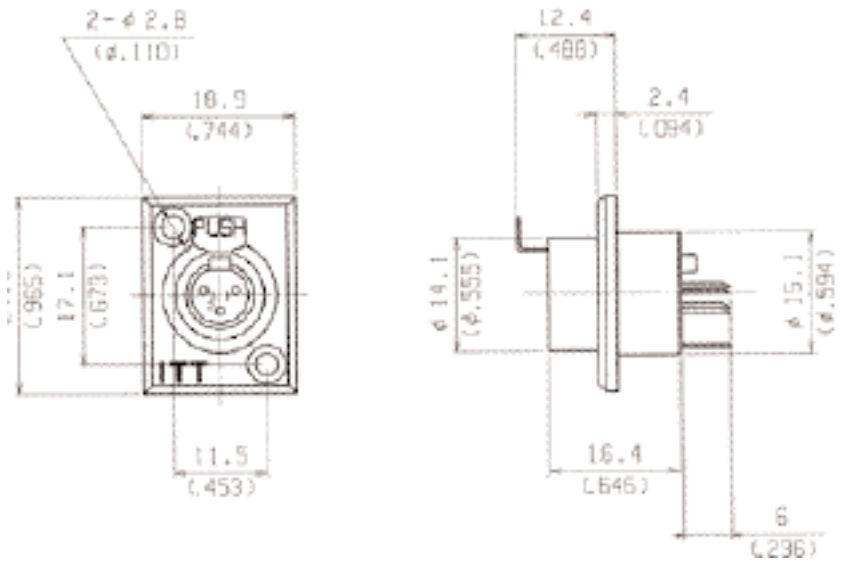
M-XL- \* - 14



See page 35 for panel cutouts.

Female Rectangular Flange Receptacle

M-XL- \* - 31



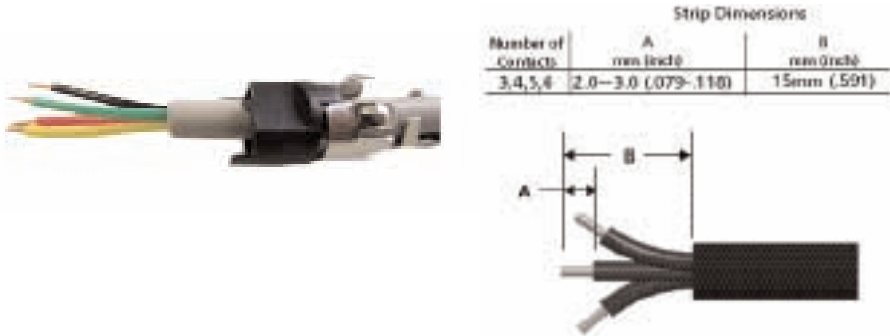
See page 35 for panel cutouts.

Note: Latch Lever is not removable.

Dimensions shown in mm (inch)  
Specifications and dimensions subject to change



Slide cap with bushing and cable strain relief onto cable, as shown.



Strip wire to dimension shown.



Preparing Insert Assembly; Solder individual center conductors to each contact. Visually inspect solder joints before proceeding.



Supporting the insert assembly in one hand, slide cable strain relief into insert assembly. Please take extra precaution to orientate the two components together. Keying features has been added to ensure both components latch together properly. Crimp tabs located in rear of strain relief onto cable as shown.

## Mini-XL Assembly Instructions



Insert complete sub-assembly into front barrel of connector. Please take extra precaution to orientate the barrel and sub-assembly during insertion. Keying feature has been added to ensure both components are positioned properly during this step.

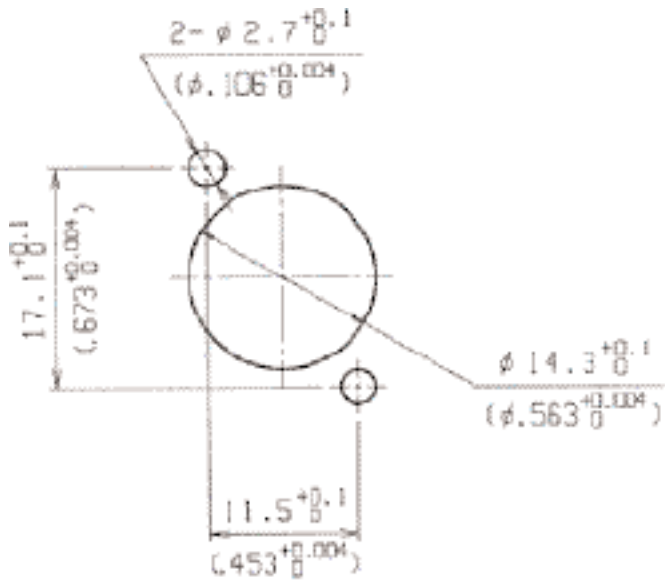


Slide cap with bushing up to terminated connector housing. Note: Large and metal caps do not include bushing as shown.

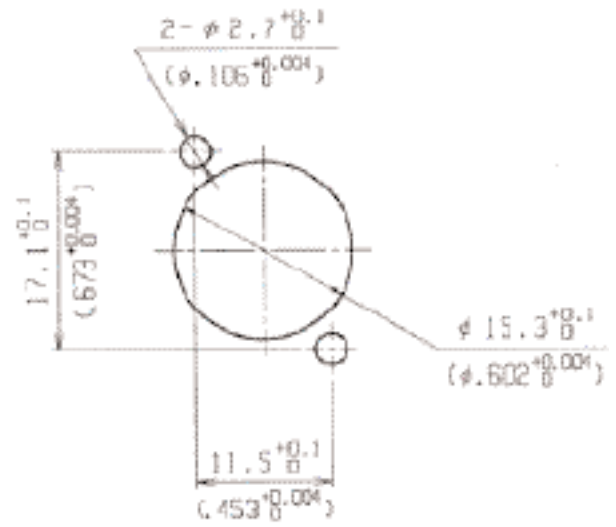


Rotate cap clockwise to thread onto connector housing to complete assembly. Perform a light pull test and visually inspect the finished assembly.

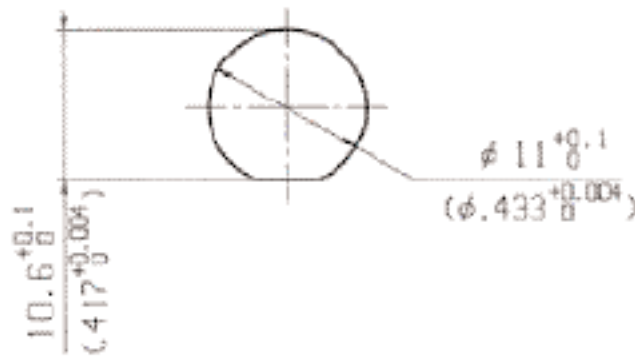
Mini-XL Panel Cutouts



M-XL\*-31  
Front



M-XL\*-31  
Rear



M-XL\*-14



## Part Number Cross Reference

| ITT Part Number | Part Number Designator Guide | # of Contacts | Description                  | Configuration                                       | Package Quantity | Page |
|-----------------|------------------------------|---------------|------------------------------|---|------------------|------|
| 127008-0278     | XLM-3-31PCH-L-F              | 3             | XLM Female Flange Receptacle | Horizontal Left Side Termination                    | 25               | 25   |
| 127008-0280     | XLM-3-31PCH-R-A176-F         | 3             | XLM Female Flange Receptacle | Horizontal Right Side Termination w/gold contacts   | 25               | 25   |
| 127008-0279     | XLM-3-31PCH-R-F              | 3             | XLM Female Flange Receptacle | Horizontal Right Side Termination                   | 25               | 25   |
| 127008-0275     | XLM-3-31PCS-A176-F           | 3             | XLM Female Flange Receptacle | Straight Termination w/gold contacts                | 25               | 25   |
| 127008-0274     | XLM-3-31PCS-F                | 3             | XLM Female Flange Receptacle | Straight Termination                                | 25               | 25   |
| 127008-0277     | XLM-3-31PCV-A176-F           | 3             | XLM Female Flange Receptacle | Vertical 90° Termination w/gold contacts            | 25               | 25   |
| 127008-0276     | XLM-3-31PCV-F                | 3             | XLM Female Flange Receptacle | Vertical 90° Termination                            | 25               | 25   |
| 127008-0286     | XLM-3-32PCH-L-A176-F         | 3             | XLM Male Flange Receptacle   | Horizontal Left Side Termination w/gold contacts    | 25               | 26   |
| 127008-0285     | XLM-3-32PCH-L-F              | 3             | XLM Male Flange Receptacle   | Horizontal Left Side Termination                    | 25               | 26   |
| 127008-0288     | XLM-3-32PCH-R-A176-F         | 3             | XLM Male Flange Receptacle   | Horizontal Right Side Termination w/gold contacts   | 25               | 26   |
| 127008-0287     | XLM-3-32PCH-R-F              | 3             | XLM Male Flange Receptacle   | Horizontal Right Side Termination                   | 25               | 26   |
| 127008-0282     | XLM-3-32PCS-A176-F           | 3             | XLM Male Flange Receptacle   | Straight Termination w/gold contacts                | 25               | 26   |
| 127008-0281     | XLM-3-32PCS-F                | 3             | XLM Male Flange Receptacle   | Straight Termination                                | 25               | 26   |
| 127008-0284     | XLM-3-32PCV-A176-F           | 3             | XLM Male Flange Receptacle   | Vertical 90° Termination w/gold contacts            | 25               | 26   |
| 127008-0283     | XLM-3-32PCV-F                | 3             | XLM Male Flange Receptacle   | Vertical 90° Termination                            | 25               | 26   |
| 127007-0244     | XLR-13RC                     | n/a           | XLR Metallic Female Dust Cap | For use with shell sizes (11C,13,31,31-F77)         | 10               | 12   |
| 127007-0243     | XLR-14PC                     | n/a           | XLR Metallic Male Dust Cap   | For use with shell sizes (12C,14,32,32-F77,32-F512) | 10               | 12   |
| 127007-0284     | XLR-SDC (M01)                | n/a           | XLR Plastic Female Dust Cap  | For use with shell sizes (11C,13,31,31-F77)         | 10               | 12   |
| 127007-0283     | XLR-PDC(M01)                 | n/a           | XLR Plastic Male Dust Cap    | For use with shell sizes (12C,14,32,32-F77,32-F512) | 10               | 12   |
| 012-4504-000    | F502                         | n/a           | XLR Small Bushing Accessory  | Straight  | 100              | 12   |
| 127007-0128     | XLR-2A-11C                   | 2             | XLR Female Plug              | Straight  | 10               | 9    |
| 127007-0136     | XLR-2A-12C                   | 2             | XLR Male Plug                | Straight  | 10               | 9    |
| 127007-0124     | XLR-2A-13                    | 2             | XLR Female Receptacle        | Round Flange w/latch                                | 10               | 9    |
| 127007-0122     | XLR-2A-14                    | 2             | XLR XLR Male Receptacle      | Round Flange w/latch                                | 10               | 9    |
| 127007-0133     | XLR-2A-31                    | 2             | XLR Female Receptacle        | Rectangular Flange w/latch                          | 10               | 10   |
| 127007-0095     | XLR-2A-31-F77                | 2             | XLR Female Receptacle        | Rectangular Small Flange w/latch                    | 10               | 10   |
| 127007-0155     | XLR-2A-32                    | 2             | XLR Male Receptacle          | Rectangular Flange                                  | 10               | 10   |
| 127007-0111     | XLR-2A-32-F512               | 2             | XLR Male Receptacle          | Rectangular Mini-Flange                             | 10               | 11   |
| 127007-0107     | XLR-2A-32-F77                | 2             | XLR Male Receptacle          | Rectangular Small Flange                            | 10               | 10   |



## Part Number Cross Reference

| ITT Part Number | Part Number Designator Guide | # of Contacts | Description                        | Configuration                              | Package Quantity | Page |
|-----------------|------------------------------|---------------|------------------------------------|--|------------------|------|
| 127007-0115     | XLR-3 PIN INST ASSY          | 3             | XLR Male Insert Assembly           | Straight                                   | 10               | 12   |
| 127007-0051     | XLR-3 SKT INST ASSY          | 3             | XLR Female Socket Insert Assembly  | Straight                                   | 10               | 12   |
| 127007-0366     | XLR-3-11-11-F                | 3             | XLR Female-Female Bulkhead Adapter | Straight                                   | 10               | 11   |
| 127007-0058     | XLR-3-11-C                   | 3             | XLR Female Plug                    | Straight                                   | 10               | 9    |
| 127007-0214     | XLR-3-11C-A176               | 3             | XLR Female Plug                    | Straight w/ gold contacts                  | 10               | 9    |
| 127007-0367     | XLR-3-12-12-F                | 3             | XLR Male-Male Bulkhead Adapter     | Straight                                   | 10               | 11   |
| 127007-0103     | XLR-3-12C                    | 3             | XLR Male Plug                      | Straight                                   | 10               | 9    |
| 127007-0215     | XLR-3-12C-A176               | 3             | XLR Male Plug                      | Straight w/ gold contacts                  | 10               | 9    |
| 127007-0099     | XLR-3-13                     | 3             | XLR Female Receptacle              | Round Flange w/latch                       | 10               | 9    |
| 127007-0153     | XLR-3-14                     | 3             | XLR Male Receptacle                | Round Flange w/latch                       | 10               | 9    |
| 127007-0104     | XLR-3-31                     | 3             | XLR Female Receptacle              | Rectangular Flange w/latch                 | 10               | 10   |
| 127007-0211     | XLR-3-31-A176                | 3             | XLR Female Receptacle              | Rectangular Flange w/latch w/gold contacts | 10               | 10   |
| 127007-0085     | XLR-3-31-F77                 | 3             | XLR Female Receptacle              | Rectangular Small Flange w/latch           | 10               | 10   |
| 127007-0105     | XLR-3-32                     | 3             | XLR Male Receptacle                | Rectangular Flange                         | 10               | 10   |
| 127007-0212     | XLR-3-32-A176                | 3             | XLR Male Receptacle                | Rectangular Flange w/gold contacts         | 10               | 10   |
| 127007-0040     | XLR-3-32-F512                | 3             | XLR Male Receptacle                | Rectangular Mini-Flange                    | 10               | 11   |
| 127007-0086     | XLR-3-32-F77                 | 3             | XLR Male Receptacle                | Rectangular Small Flange                   | 10               | 10   |
| 127007-0282     | XLR-3-A176 PIN INST ASSY     | 3             | XLR Male Insert Assembly           | Straight w/gold contacts                   | 10               | 12   |
| 127007-0194     | XLR-4 SKT INST ASSY          | 4             | XLR Female Socket Insert Assembly  | Straight                                   | 10               | *    |
| 127007-0087     | XLR-4-11C                    | 4             | XLR Female Plug                    | Straight                                   | 10               | 9    |
| 127007-0065     | XLR-4-12C                    | 4             | XLR Male Plug                      | Straight                                   | 10               | 9    |
| 127007-0348     | XLR-4-12C-A176               | 4             | XLR Male Plug                      | Straight w/gold contacts                   | 10               | 9    |
| 127007-0125     | XLR-4-13                     | 4             | XLR Female Receptacle              | Round Flange w/latch                       | 10               | 9    |
| 127007-0168     | XLR-4-14                     | 4             | XLR Male Receptacle                | Round Flange w/latch                       | 10               | 9    |
| 127007-0100     | XLR-4-31                     | 4             | XLR Female Receptacle              | Rectangular Flange w/latch                 | 10               | 10   |
| 127007-0210     | XLR-4-31-A176                | 4             | XLR Female Receptacle              | Rectangular Flange w/latch w/gold contacts | 10               | 10   |
| 127007-0064     | XLR-4-31-F77                 | 4             | XLR Female Receptacle              | Rectangular Small Flange w/latch           | 10               | 10   |
| 127007-0101     | XLR-4-32                     | 4             | XLR Male Receptacle                | Rectangular Flange                         | 10               | 10   |
| 127007-0204     | XLR-4-32-F512                | 4             | XLR Male Receptacle                | Rectangular Mini-Flange                    | 10               | 11   |
| 127007-0102     | XLR-4-32-F77                 | 4             | XLR Male Receptacle                | Rectangular Small Flange                   | 10               | 10   |
| 127007-0195     | XLR-5-SKT INST ASSY          | 5             | XLR Female Insert                  | Straight                                   | 10               | n/a  |
| 127007-0129     | XLR-5-11C                    | 5             | XLR Female Plug                    | Straight                                   | 10               | 9    |
| 127007-0052     | XLR-5-12C                    | 5             | XLR Male Plug                      | Straight                                   | 10               | 9    |
| 127007-0202     | XLR-5-13                     | 5             | XLR Female Receptacle              | Round Flange w/latch                       | 10               | 9    |
| 127007-0169     | XLR-5-14                     | 5             | XLR Male Receptacle                | Round Flange w/latch                       | 10               | 9    |
| 127007-0134     | XLR-5-31                     | 5             | XLR Female Receptacle              | Rectangular Flange w/latch                 | 10               | 10   |
| 127007-0053     | XLR-5-31-F77                 | 5             | XLR Female Receptacle              | Rectangular Small Flange w/latch           | 10               | 10   |
| 127007-0156     | XLR-5-32                     | 5             | XLR Male Receptacle                | Rectangular Flange                         | 10               | 10   |

\*Contact Factory for drawings



## Part Number Cross Reference

| ITT Part Number | Part Number Designator Guide | # of Contacts | Description                                 | Configuration                                    | Package Quantity | Page |
|-----------------|------------------------------|---------------|---|--|------------------|------|
| 127007-0127     | XLR-5-32-F512                | 5             | XLR Male Receptacle                         | Rectangular Mini-Flange                          | 10               | 11   |
| 127007-0106     | XLR-5-32-F77                 | 5             | XLR Male Receptacle                         | Rectangular Small Flange                         | 10               | 10   |
| 127007-0130     | XLR-6-11C                    | 6             | XLR Female Plug                             | Straight   | 10               | 9    |
| 127007-0137     | XLR-6-12C                    | 6             | XLR Male Plug                               | Straight   | 10               | 9    |
| 127007-0201     | XLR-6-13                     | 6             | XLR Female Receptacle                       | Round Flange w/latch                             | 10               | 9    |
| 127007-0170     | XLR-6-14                     | 6             | XLR Male Receptacle                         | Round Flange w/latch                             | 10               | 9    |
| 127007-0163     | XLR-6-31                     | 6             | XLR Female Receptacle                       | Rectangular Flange w/latch                       | 10               | 10   |
| 127007-0092     | XLR-6-31-F77                 | 6             | XLR Female Receptacle                       | Rectangular Small Flange w/latch                 | 10               | 10   |
| 127007-0157     | XLR-6-32                     | 6             | XLR Male Receptacle                         | Rectangular Flange                               | 10               | 10   |
| 127007-0206     | XLR-6-32-F512                | 6             | XLR Male Receptacle                         | Rectangular Mini-Flange                          | 10               | 11   |
| 127007-0164     | XLR-6-32-F77                 | 6             | XLR Male Receptacle                         | Rectangular Small Flange                         | 10               | 10   |
| 127007-0131     | XLR-6A-11C                   | 6             | XLR Female Plug                             | Straight   | 10               | 9    |
| 127007-0138     | XLR-6A-12C                   | 6             | XLR Male Plug                               | Straight   | 10               | 9    |
| 127007-0198     | XLR-6A-13                    | 6             | XLR Female Receptacle                       | Round Flange w/latch                             | 10               | 9    |
| 127007-0171     | XLR-6A-14                    | 6             | XLR Male Receptacle                         | Round Flange w/latch                             | 10               | 9    |
| 127007-0176     | XLR-6A-31                    | 6             | XLR Female Receptacle                       | Rectangular Flange w/latch                       | 10               | 10   |
| 127007-0342     | XLR-6A-31-A176               | 6             | XLR Female Receptacle                       | Rectangular Flange w/latch w/gold contacts       | 10               | 10   |
| 127007-0094     | XLR-6A-31-F77                | 6             | XLR Female Receptacle                       | Rectangular Small Flange w/latch                 | 10               | 10   |
| 127007-0159     | XLR-6A-32                    | 6             | XLR Male Receptacle                         | Rectangular Flange                               | 10               | 10   |
| 127007-0205     | XLR-6A-32-F512               | 6             | XLR Male Receptacle                         | Rectangular Mini-Flange                          | 10               | 11   |
| 127007-0197     | XLR-6A-32-F77                | 6             | XLR Male Receptacle                         | Rectangular Small Flange                         | 10               | 10   |
| 127007-0123     | XLR-7-11C                    | 7             | XLR Female Plug                             | Straight w/gold contacts                         | 10               | 9    |
| 127007-0097     | XLR-7-12C                    | 7             | XLR Male Plug                               | Straight w/gold contacts                         | 10               | 9    |
| 127007-0166     | XLR-7-13                     | 7             | XLR Female Receptacle                       | Round Flange w/latch w/gold contacts             | 10               | 9    |
| 127007-0132     | XLR-7-14                     | 7             | XLR Male Receptacle                         | Round Flange w/latch w/gold contacts             | 10               | 9    |
| 127007-0135     | XLR-7-31                     | 7             | XLR Female Receptacle                       | Rectangular Flange w/latch w/gold contacts       | 10               | 10   |
| 127007-0096     | XLR-7-31-F77                 | 7             | XLR Female Receptacle                       | Rectangular Small Flange w/latch w/gold contacts | 10               | 10   |
| 127007-0158     | XLR-7-32                     | 7             | XLR Male Receptacle                         | Rectangular Flange w/gold contacts               | 10               | 10   |
| 127007-0112     | XLR-7-32-F512                | 7             | XLR Male Receptacle                         | Rectangular Mini-Flange w/gold contacts          | 10               | 11   |
| 127007-0165     | XLR-7-32-F77                 | 7             | XLR Male Receptacle                         | Rectangular Small Flange w/gold contacts         | 10               | 10   |
| 127010-0003     | M-XL-3-11S                   | 3             | Mini-XL Female Plug w/small cap and bushing | Straight   | 50               | 30   |
| 127010-0007     | M-XL-3-11L                   | 3             | Mini-XL Female Plug w/large cap             | Straight   | 50               | 30   |
| 127010-0011     | M-XL-3-11M                   | 3             | Mini-XL Female Plug w/metal cap             | Straight   | 50               | 30   |
| 127010-0015     | M-XL-3-12S                   | 3             | Mini-XL Male Plug w/small cap and bushing   | Straight   | 50               | 31   |
| 127010-0019     | M-XL-3-12L                   | 3             | Mini-XL Male Plug w/large cap               | Straight   | 50               | 31   |
| 127010-0023     | M-XL-3-12M                   | 3             | Mini-XL Male Plug w/metal cap               | Straight   | 50               | 31   |
| 127010-0027     | M-XL-3-14                    | 3             | Mini-XL Male Receptacle                     | Round Flange                                     | 50               | 32   |
| 127010-0031     | M-XL-3-31                    | 3             | Mini-XL Female Receptacle                   | Rectangular Flange w/latch                       | 50               | 32   |
| 127010-0004     | M-XL-4-11S                   | 4             | Mini-XL Female Plug w/small cap and bushing | Straight   | 50               | 30   |
| 127010-0008     | M-XL-4-11L                   | 4             | Mini-XL Female Plug w/large cap             | Straight   | 50               | 30   |
| 127010-0012     | M-XL-4-11M                   | 4             | Mini-XL Female Plug w/metal cap             | Straight   | 50               | 30   |

## Part Number Cross Reference

| ITT Part Number | Part Number Designator Guide | # of Contacts | Description                                 | Configuration              | Package Quantity | Page |
|-----------------|------------------------------|---------------|---|----------------------------|------------------|------|
| 127010-0016     | M-XL-4-12S                   | 4             | Mini-XL Male Plug w/small cap and bushing   | Straight                   | 50               | 31   |
| 127010-0020     | M-XL-4-12L                   | 4             | Mini-XL Male Plug w/large cap               | Straight                   | 50               | 31   |
| 127010-0024     | M-XL-4-12M                   | 4             | Mini-XL Male Plug w/metal cap               | Straight                   | 50               | 31   |
| 127010-0028     | M-XL-4-14                    | 4             | Mini-XL Male Receptacle                     | Round Flange               | 100              | 32   |
| 127010-0032     | M-XL-4-31                    | 4             | Mini-XL Female Receptacle                   | Rectangular Flange w/latch | 50               | 32   |
| 127010-0005     | M-XL-5-11S                   | 5             | Mini-XL Female Plug w/small cap and bushing | Straight                   | 50               | 30   |
| 127010-0009     | M-XL-5-11L                   | 5             | Mini-XL Female Plug w/large cap             | Straight                   | 50               | 30   |
| 127010-0013     | M-XL-5-11M                   | 5             | Mini-XL Female Plug w/metal cap             | Straight                   | 50               | 30   |
| 127010-0017     | M-XL-5-12S                   | 5             | Mini-XL Male Plug w/small cap and bushing   | Straight                   | 50               | 31   |
| 127010-0021     | M-XL-5-12L                   | 5             | Mini-XL Male Plug w/large cap               | Straight                   | 50               | 31   |
| 127010-0025     | M-XL-5-12M                   | 5             | Mini-XL Male Plug w/metal cap               | Straight                   | 50               | 31   |
| 127010-0029     | M-XL-5-14                    | 5             | Mini-XL Male Receptacle                     | Round Flange               | 100              | 32   |
| 127010-0033     | M-XL-5-31                    | 5             | Mini-XL Female Receptacle                   | Rectangular Flange w/latch | 50               | 32   |
| 127010-0006     | M-XL-6-11S                   | 6             | Mini-XL Female Plug w/small cap and bushing | Straight                   | 50               | 30   |
| 127010-0010     | M-XL-6-11L                   | 6             | Mini-XL Female Plug w/large cap             | Straight                   | 50               | 30   |
| 127010-0014     | M-XL-6-11M                   | 6             | Mini-XL Female Plug w/metal cap             | Straight                   | 50               | 30   |
| 127010-0018     | M-XL-6-12S                   | 6             | Mini-XL Male Plug w/small cap and bushing   | Straight                   | 50               | 31   |
| 127010-0022     | M-XL-6-12L                   | 6             | Mini-XL Male Plug w/large cap               | Straight                   | 50               | 31   |
| 127010-0026     | M-XL-6-12M                   | 6             | Mini-XL Male Plug w/metal cap               | Straight                   | 50               | 31   |
| 127010-0030     | M-XL-6-14                    | 6             | Mini-XL Male Receptacle                     | Round Flange               | 100              | 32   |
| 127010-0034     | M-XL-6-31                    | 6             | Mini-XL Female Receptacle                   | Rectangular Flange w/latch | 50               | 32   |

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**Glossary of Terms**

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**AMP:** (Ampere) Unit of electrical current.

**Amplifier:** A device which increases the amplitude of a signal.

**AWG:** (American Wiring Gauge) A U.S. measurement standard of the diameter of non-ferrous wire, which includes copper and aluminum. As a AWG number increases the diameter of the wire decreases.

**Balanced Audio:** A type of audio signal which uses two inverted voltages as a way to prevent unwanted noise being picked up by cables.

**Bus:** The pathway along which an electrical signal flows. For example, the output of a sound mixer is referred to as the master stereo bus.

**Channel:** Similar to a bus, a pathway through an audio device. For example, sound mixers have multiple input channels.

**Connector Durability:** The number of times a connector can be physically mated and still maintain its specified performance.

**Contact Resistance:** The measurement of the DC electrical resistance between a pair of mated contacts. Usually specified as being measured after a given number of mating cycles.

**Decibel (dB):** Logarithmic measurement of signal strength. 1/10 of a Bel.

**Dielectric Withstanding Voltage (AC):** The maximum voltage that a dielectric material can withstand without failure.

**Dust Cap:** A mechanical device attached to the mating face of an unmated connector to prevent ingress of contaminant's and provide protection against mechanical damage.

**Equalization:** The process of adjusting various audio frequencies to correct or enhance the sound.

**Frequency Response:** The sensitivity of an audio device to various frequencies, i.e. the amount each frequency is boosted, attenuated or reproduced.

**Gain:** The amplification level of an audio signal.

**Hertz:** Unit of frequency, cycles per second.

**Headroom:** In a cable or audio device, the difference between the maximum level of the signal being carried and the maximum level the device is capable of carrying without distortion.

**Impedance:** The amount of opposition a device has to an audio signal. In technical terms, the combined effect of capacitance, inductance, and resistance on a signal.

**Insulation Resistance:** The electrical resistance between two conductors separated by an insulating medium.

**Mini-XL:** Similar to XLR series but 40% smaller in size, configurations available from 3 to 6 pins.

**Mixer:** A device which accepts two or more audio inputs and provides one or more audio outputs.

**Operating Temperature:** Range of temperature in which output frequency and other electrical and environmental characteristics meet connector specifications.

**Peak:** The highest level of strength of an audio signal. Often refers to an unacceptably high level, where the signal begins distorting.

**Phantom Power:** A DC current which is sent through audio cables to provide power for devices such as microphones.

**Plug:** One half of a mating pair of connectors. The plug interface normally goes outside the jack interface.

**Rated Voltage:** Maximum voltage that a type of wire, plug, socket or circuit breaker is designed for.

**Receptacle:** A term used to describe a connector assembly usually bulkhead or PCB mounted.

**Stereo:** Audio which is made up of two channels — left and right.

**Tone:** An audio test signal used to adjust levels, test signal quality, identify signal pathways, etc.

**Transducer:** Any device which converts energy from one form into another. Microphones and loudspeakers are both transducers.

**Volume Unit (VU):** a unit used to measure the volume of an audio signal.

**Wavelength:** The length of a wave, measured from any point on a wave to the corresponding point on the next phase of the wave.

**XLB-PCB:** A lockable printed circuit board receptacle, available with 3 pins. XLB "X series", "L latch" and "B board mount plastic pcb shell".

**XLM-PCB:** A lockable printed circuit board receptacle, available with 3 pins. XLM "X series", "L latch" and "M metal pcb shell".

**XLR:** A lockable connector, configurations available from 2 to 7 pins. The most common XLR in audio products is the 3-pin XLR. Our original design was the "X series", which later incorporated a latch (L) and then rubber insulation (R), leading to the acronym "XLR".



## 1. MATERIAL CONTENT AND PHYSICAL FORM

Electrical connectors do not usually contain hazardous materials. They contain conducting and non-conducting materials and can be divided into two groups.

- a) Printed circuit types and low cost audio types which employ all plastic insulators and casings.
- b) Rugged, Fire Barrier and High Reliability types with metal casings and either natural rubber, synthetic rubber, plastic or glass insulating materials. Contact materials vary with type of connector and also application and are usually manufactured from either: Copper, copper alloys, nickel, alumel, chromel or steel. In special applications, other alloys may be specified.

## 2. FIRE CHARACTERISTICS AND ELECTRIC SHOCK HAZARD

**There is no fire hazard when the connector is correctly wired and used within the specified parameters. Incorrect wiring or assembly of the connector or careless use of metal tools or conductive fluids, or transit damage to any of the component parts may cause electric shock or burns. Live circuits must not be broken by separating mated connectors as this may cause arcing, ionization and burning.** Heat dissipation is greater at maximum resistance in a circuit. Hot spots may occur when resistance is raised locally by damage, e.g. cracked or deformed contacts, broken strands of wire. Local overheating may also result from the use of the incorrect application tools or from poor quality soldering or slack screw terminals. Overheating may occur if the ratings in the product Data Sheet/Catalog are exceeded and can cause breakdown of insulation and hence electric shock. If heating is allowed to continue it intensifies by further increasing the local resistance through loss of temper of spring contacts, formation of oxide film on contacts and wires and leakage currents through carbonization of insulation and tracking paths. Fire can then result in the presence of combustible materials and this may release noxious fumes. Overheating may not be visually apparent. Burns may result from touching overheated components.

## 3. HANDLING

Care must be taken to avoid damage to any component parts of electrical connectors during installation and use. Although there are normally no sharp edges, care must be taken when handling certain components to avoid injury to fingers. Electrical connectors may be damaged in transit to the customers, and damage may result in creation of hazards. Products should therefore be examined prior to installation/use and rejected if found to be damaged.

## 4. DISPOSAL

Incineration of certain materials may release noxious or even toxic fumes.

## 5. APPLICATION

Connectors with exposed contacts should not be selected for use on the current supply side of an electrical circuit, because an electric shock could result from touching exposed contacts on an unmated connector. Voltages in excess of 30 V ac or 42.5 V dc are potentially hazardous and care should be taken to ensure that such voltages cannot be transmitted in any way to exposed metal parts of the connector body. The connector and wiring should be checked, before making live, to have no damage to metal parts or insulators, no solder blobs, loose strands, conducting lubricants, swarf, or any other undesired conducting particles. Circuit resistance and continuity check should be made to make certain that there are no high resistance joints or spurious conducting paths. Always use the correct application tools as specified in the Data Sheet/Catalog. Do not permit untrained personnel to wire, assemble or tamper with connectors. For operation voltage please see appropriate national regulations.

### IMPORTANT GENERAL INFORMATION

**(i) Air and creepage paths/Operating voltage.** The admissible operating voltages depend on the individual applications and the valid national and other applicable safety regulations. For this reason the air and creepage path data are only reference values. Observe reduction of air and creepage paths due to PC board and/or harnessing.

### (ii) Temperature

All information given are temperature limits. The operation temperature depends on the individual application.

### (iii) Other important information

Cannon continuously endeavors to improve their products. Therefore, Cannon products may deviate from the description, technical data and shape as shown in this catalog and data sheets.

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