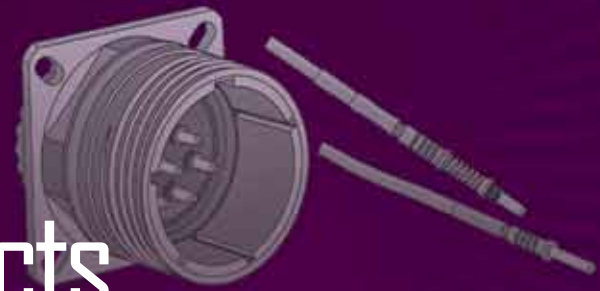


Amphenol Fiber Optic Interconnects



CF38999 with MIL-PRF-29504 Size 16 Fiber Optic Termini



CF38999 with Size 20 Fiber Optic Termini



MT38999 with MT Fiber Optic Termini



ARINC 801 Fiber Optic Connector and Termini



Hybrid with Fiber Optic Termini and High Speed Contacts



TABLE OF CONTENTS

Fiber Optic Interconnect Products for Military, Aerospace and Harsh Environments

- Product Overview 187

Fiber Optic Termini

- MIL-PRF-29504/4 & /5 Style Multi-Mode & MIL-PRF-29504 Type Single Mode Termini size 16, Pin & Socket - How to Order 188
- MIL-PRF-29504 Type Termini size 16, Pin & Socket Features 189
- 90° Multi-Mode Termini, Size 16, Pin & Socket - Features/How to Order . . 190
- Multi-mode Termini, HD20, Size 20, Pin & Socket Features/How to Order . 191

Multi-Channel Circular Connectors with Fiber Optics

- CF38999 Multi-Channel Connectors, the Industry Standard for Fiber Optics . 192
 - How to Order 193
 - Insert Availability 194
 - Insert Arrangements 195, 196
 - Wall Mount Receptacle, Box Mount Receptacle 197
 - Jam Nut Receptacle, Line Receptacle 198
 - Straight Plug 199
- JSFC17 Socket and JSFC18 Pin Contact How to Order 200
- JSFC15 Receptacle, JSFC16 Plug, How to Order 201
- JSFC 15 Receptacle, JSFC 16 Straight Plug, Shell Styles 202
- ARINC 801 Genderless, Keyed Termini Features/How to Order 203
- Multi-Channel, MIL-DTL-38999 III with ARINC 801 Connectors Features/How to Order 204
- MT Ferrule Termini 205
- Multi-Channel Fiber Optic with MT Ferrule Inserts, How to Order 206
- Fiber Optic Bulkhead Feed-Through with Size 16 Pin Termini 207
- Accessories for Circular Connectors 208
- Application Tools for Multi-Mode Termini. 209
- Fiber Optic Cable Systems 210
- Fiber Optic Cable Systems Designer's Guide 211



Fiber Optic Interconnects Markets:

- Military & Commercial Aviation
- Military Vehicles
- Radar, Missiles & Battlefield Equipment
- Medical & Test Equipment
- C4ISR





Fiber Optics in MIL-DTL-38999 Series III Connectors

Amphenol Aerospace offers a wide range of fiber optic interconnect solutions for use in the harsh environments found in military and aerospace applications. Amphenol Aerospace has established the rugged and reliable MIL-DTL-38999 as a common connector shell platform that houses a wide variety of fiber optic termini including MIL-PRF-29504 commercial equivalent*, HDF20, ARINC 801 and MT ferrules.

MIL-DTL-38999 Series III Tri-Start connectors are available in various insert arrangements, materials and finishes to meet any type of environmental requirement. Our MIL-PRF-29504 style and HD20 termini can be combined with most of our copper contacts to create a large assortment of hybrid fiber/copper connector combinations.

*MIL-PRF-29504 supersedes MIL-T-29504. (MIL-T-29504 is still available; consult Amphenol Aerospace for more information.)

| Connector | Termination | Features |
|-----------|-------------------|--|
| | MIL-PRF-29504 | CF38999 pin and socket termini that feature high precision, pre-radiused ceramic ferrules to help improve insertion loss performance and reduce polishing time. Products are available in both single mode and multi-mode versions. The socket has a plastic protective shroud over the ceramic alignment sleeve that incorporates a built-in anti-rotation feature. HD20 - Pin and socket termini that have the same benefits of the MIL-PRF-29504 termini, but in a smaller size 20 contact that allows for increased density in D38999 connector shells. |
| | JSF | Tight tolerance, nickel-plated composite plugs and receptacles approved for use in F35/JSF applications. |
| | ARINC 801 termini | Genderless fiber optic termini that use a precision 1.25 mm ceramic ferrule. Precision inserts with guide pins and keyed termini enhance multi-mode and single mode performance. ARINC 801 termini facilitate an angled polish for improved return loss. |
| | MT ferrules | Industry-standard, very high density plastic ferrules available in either 12-fiber or 24-fiber versions, in multi-mode PC, single mode PC, and single mode APC configurations. |

Amphenol Aerospace also supplies a wide range of rectangular interconnect products containing MIL-PRF-29504 style, HD20 and MT Fiber Optic termini. Our rectangular interconnect products include a variety of applications including LRM surface mount and rack & panel styles - all available in hybrid fiber/copper configurations

38999

- III
- HD
- Dualok
- II
- I
- SJT
- Accessories
- Aquacon
- Herm/Seal
- PCB

HIGH SPEED
Fiber Optics
Contacts
Connectors
Cables

EMI Filter
Transient

26482
Matrix 2

83723 III
Matrix | Pyle

26500
Pyle

5015
Crimp Rear Release Matrix

22992
Class 1

Back-Shell

Options
Others

Ordering Information for Fiber Optic Pins

| Amphenol Part Number | Fiber Size† Core/Cladding | A Dia. Ref. (Microns) | Ferrule Hole Tolerance | Reference Only M29504/4-XXXX |
|----------------------|---------------------------|-----------------------|------------------------|------------------------------|
| CF-198142-125 | 9/125 | 125 | +1,-0 | M201504/4-4300* |
| CF-198142-25A | 9/125 | 125.5 | +1,-0 | M29504/4-4208* |
| CF-198142-126 | 9/125 | 126 | +1,-0 | M29504/4-4209* |
| CF-198036-010 | 50/125 & 62.5/125 | 127 | +2,-0 | Superseded by MIL-PRF |
| CF-198142-010 | 50/125 & 62.5/125 | 127 | +2,-0 | M29504/4-4040* |
| CF-198036-017 | 100/140 | 145 | +3,-0 | Superseded by MIL-PRF |
| CF-198142-017 | 100/140 | 145 | +3,-0 | M29504/4-4044* |
| CF-198036-29A | 100/140/172 (Polyimide) | 173 | +1,-0 | Superseded by MIL-PRF |
| CF-198142-29A | 100/140/172 (Polyimide) | 173 | +1,-0 | M29504/4-4293* |
| CF-198036-053 | 200/230 | 236 | +4,-0 | Superseded by MIL-PRF |
| CF-198142-053 | 200/230 | 236 | +4,-0 | M29504/4-4214* |

Ordering Information for Fiber Optic Sockets

| Amphenol Part Number | Fiber Size† Core/Cladding | A Dia. Ref. (Microns) | Ferrule Hole Tolerance | Alignment Sleeve** | Reference Only M29504/5-XXXX |
|----------------------|---------------------------|-----------------------|------------------------|--------------------|------------------------------|
| CF-198143-125 | 9/125 | 125 | +1,-0 | C | M29504/5-4309* |
| CF-198143-25A | 9/125 | 125.5 | +1,-0 | C | M29504/4-4237* |
| CF-198143-126 | 9/125 | 126 | +1,-0 | C | M29504/5-4238* |
| CF-198035-010 | 50/125 & 62.5/125 | 127 | +2,-0 | M | Superseded by MIL-PRF |
| CF-198143-010 | 50/125 & 62.5/125 | 127 | +2,-0 | C | M29504/5-4046* |
| CF-198035-017 | 100/140 | 145 | +3,-0 | M | Superseded by MIL-PRF |
| CF-198143-017 | 100/140 | 145 | +3,-0 | C | M29504/5-4050* |
| CF-198035-29A | 100/140/172 (Polyimide) | 173 | +1,-0 | M | Superseded by MIL-PRF |
| CF-198143-29A | 100/140/172 (Polyimide) | 173 | +1,-0 | C | M29504/5-4296* |
| CF-198035-053 | 200/230 | 236 | +4,-0 | M | Superseded by MIL-PRF |
| CF-198143-053 | 200/230 | 236 | +4,-0 | C | M29504/5-4243* |

* Consult Amphenol Aerospace for qualification status.

† Additional fiber optic termini sizes available upon request; consult Amphenol Aerospace for availability.

** C = Ceramic
M = Metal



Multi-mode Size 16 Fiber Optic Termini

Designed for use in the size 16 contact cavities of Multi-channel MIL-DTL-38999 Series III Connectors and CF38999 Fiber Optic Connectors



Single Mode Size 16 Fiber Optic Termini

Designed for use in the size 16 contact cavities of Amphenol CF38999 Fiber Optic Connectors

38999

III

HD

Dualok

II

I

SJT

Accessories

Aquacon

Herm/Seal

PCB

HIGH SPEED

Fiber Optics

Contacts
Connectors
Cables

EMI Filter
Transient

26482
Matrix 2

83723 III
Matrix | Pyle

26500
Pyle

5015
Crimp Rear Release
Matrix

22992
Class I

Back-
Shells

Options
Others

MIL-PRF-29504 Type Termini Size 16, Pin and Socket Features

Amphenol® Multi-mode, Size 16 Termini Features:

- Designed for use in size 16 cavities of MIL-DTL-38999 Series III and Amphenol CF38999 connectors
- Precision ceramic ferrules which precisely position the fiber within the termini.
- Available with metal or ceramic alignment sleeves
- Stainless steel termini bodies and springs.
- Allows for multiple fiber accommodations

Amphenol® Single mode, Size 16 Termini Features:

- Precision ceramic alignment sleeves ensure accurate fiber to fiber alignment.
- Socket has threaded protective shroud with anti-rotation key, manufactured from rugged PEEK™
- Designed with similar high performance components as the size 16 multi-mode termini
- Maintains fiber optic/electrical hybrid capabilities

38999

| |
|-------------|
| III |
| HD |
| Dualok |
| II |
| I |
| SJT |
| Accessories |
| Aquacon |
| Herm/Seal |
| PCB |

HIGH SPEED

Fiber Optics

Contacts
Connectors
Cables

EMI Filter
Transient

26482
Matrix 2

83723 III
Matrix | Pyle

26500
Pyle

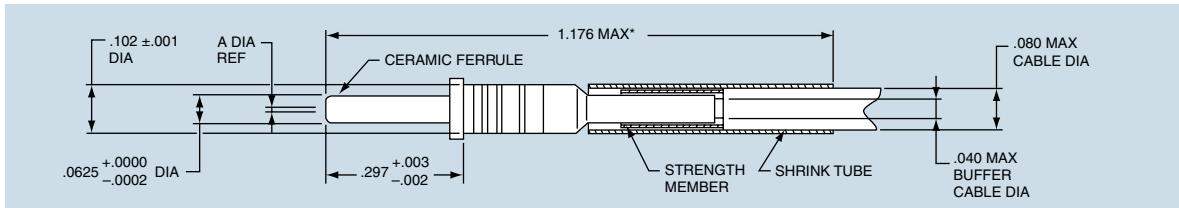
5015
Crimp Rear
Release
Matrix

22992
Class 1

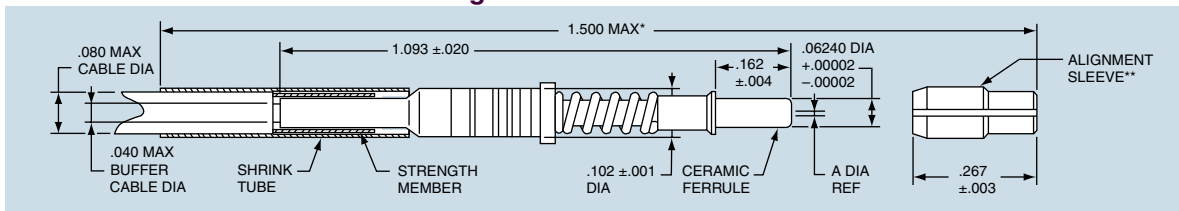
Back-
Shells

Options
Others

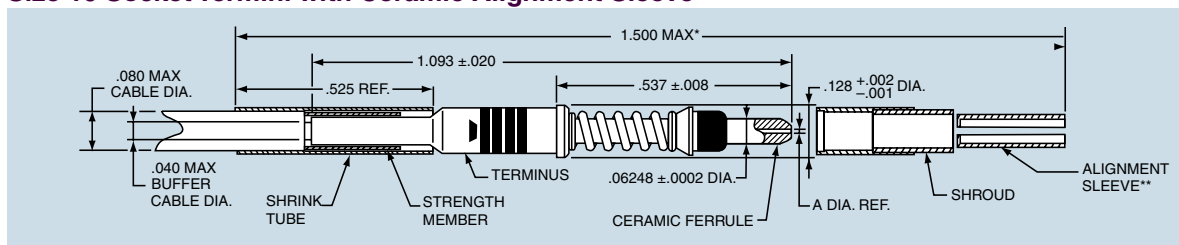
Size 16 Pin Termini



Size 16 Socket Termini with Metal Alignment Sleeve



Size 16 Socket Termini with Ceramic Alignment Sleeve



* Indicated dimension when fully assembled.

** Alignment sleeve shipped unassembled.
All dimensions for reference only.

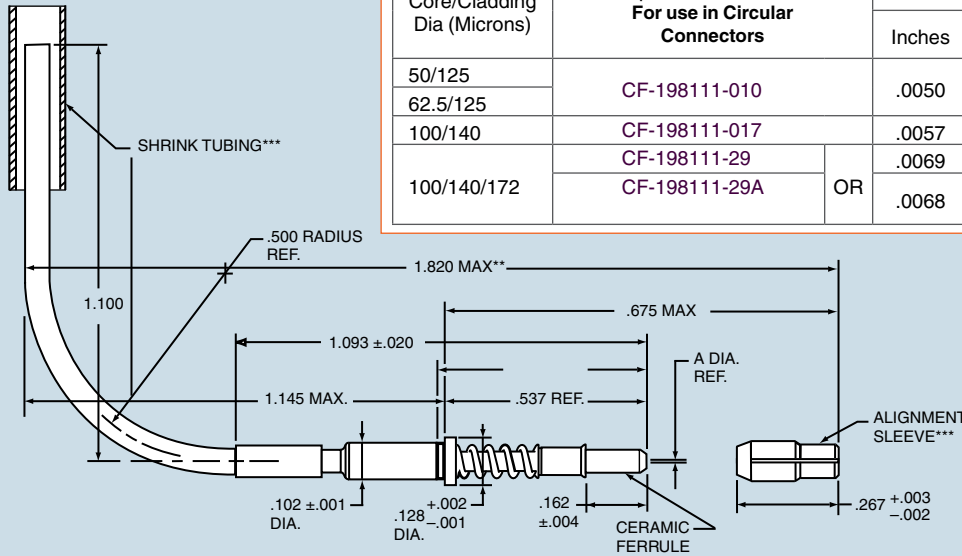
38999

Amphenol provides 90°, size 16 fiber optic termini that can be used with multi-channel circular connectors. Consult Amphenol for the 90°, size 16 termini for use in LRM rectangular connectors. (Please consult Amphenol for availability of 90° size 20 termini).

Ordering Information for 90° Multi-mode Socket Termini

| Fiber Size† Core/Cladding Dia (Microns) | Socket, Size 16 Amphenol Part Number For use in Circular Connectors | A Dia Ref | |
|---|--|-----------|---------|
| | | Inches | Microns |
| 50/125 | CF-198111-010 | .0050 | 127 |
| 62.5/125 | | | |
| 100/140 | CF-198111-017 | .0057 | 145 |
| 100/140/172 | CF-198111-29 | .0069 | 175 |
| | CF-198111-29A | | |

90° Socket Termini (Size 16)



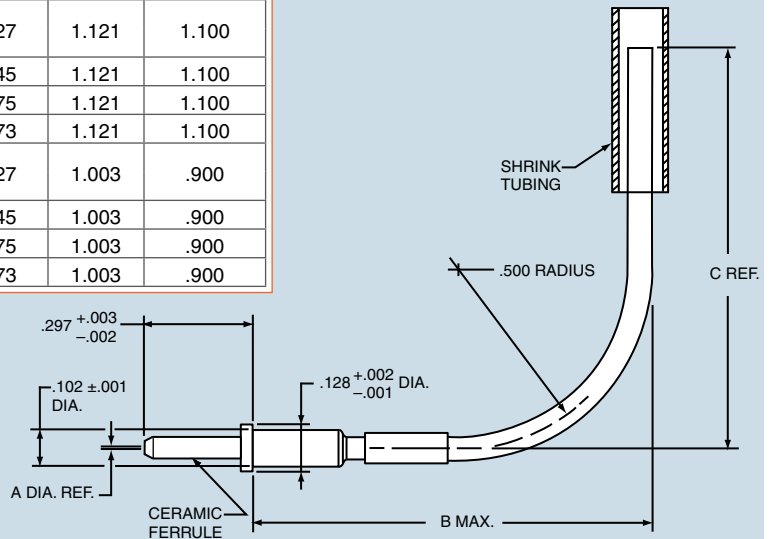
† Additional sizes available upon request: consult Amphenol Aerospace for availability.
 * Consult Amphenol Aerospace for ordering information.
 ** Indicate dimension when fully assembled.
 *** Shrink tubing and alignment sleeve are shipped unassembled.
 For 90°, size 16 fiber optic termini for use in LRM rectangular connectors consult Amphenol Aerospace.
 All dimensions for reference only.

90° Pin Termini (Size 16)

Ordering Information for 90° Multi-mode Pin Termini

| Fiber Size† Core/Cladding Dia (Microns) | Pin, Size 16 Amphenol Part Number For use in Circular Connectors | A Dia Ref | | B Max (Inches) | C Ref (Inches) |
|---|---|-----------|---------|-------------------|-------------------|
| | | Inches | Microns | | |
| 50/125 | CF-198110-010 | .0050 | 127 | 1.121 | 1.100 |
| 62.5/125 | | | | | |
| 100/140 | CF-198110-017 | .0057 | 145 | 1.121 | 1.100 |
| 100/140/172 | CF-198110-029 | .0069 | 175 | 1.121 | 1.100 |
| | CF-198110-29A | | | | |
| 50/125 | CF-198112-010 | .0050 | 127 | 1.003 | .900 |
| 62.5/125 | | | | | |
| 100/140 | CF-198112-017 | .0057 | 145 | 1.003 | .900 |
| 100/140/172 | CF-198112-029 | .0069 | 175 | 1.003 | .900 |
| | CF-198112-29A | | | | |

† Additional sizes available upon request: consult Amphenol Aerospace for availability.
 * Consult Amphenol Aerospace for ordering information.
 For 90°, size 16 fiber optic termini for use in LRM rectangular connectors consult Amphenol Aerospace.
 All dimensions for reference only.



III
HD
Dualok
II
I
SJT
Accessories
Aquacon
Herm/Seal
PCB

HIGH SPEED
Fiber Optics
Contacts
Connectors
Cables

EMI Filter
Transient

26482
Matrix 2

83723 III
Matrix | Pyle

26500
Pyle

5015
Crimp Rear Release
Matrix

22992
Class 1

Back-
Shells

Options
Others

Multi-Mode Termini, HD20

Size 20, Pin and Socket Features/How to Order



Multi-mode HDF20 Fiber Optic Termini

Designed for use in the size 20 contact cavities of Multi-channel MIL-DTL-38999 Series III Connectors and Amphenol CF38999 Fiber Optic Connectors

Ordering Information for Multi-mode Termini (Size 20) for MIL-DTL-38999 Connectors

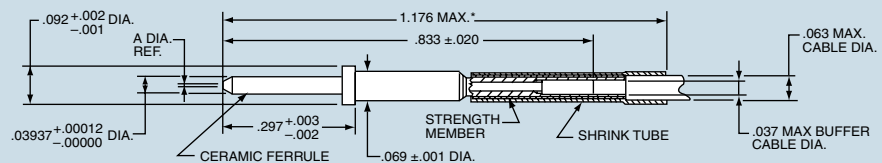
| Fiber Size† Core/Cladding Dia (Microns) | Amphenol Part Numbers | | A Dia. Ref. (Microns) | Ferrule Hole Tolerance |
|---|-----------------------|---------------|--------------------------|---------------------------|
| | Size 20 Socket | Size 20 Pin | | |
| 50/125 | CF-198080-010 | CF-198081-010 | 127 | +3,-0 |
| 62.5/125 | | | | |
| 100/140 | CF-198080-017 | CF-198081-017 | 145 | +3,-0 |

† Additional sizes available upon request: consult Amphenol Aerospace for availability.

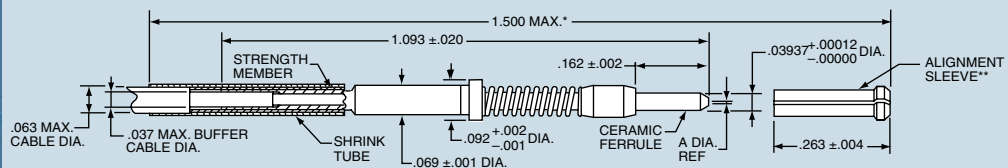
Amphenol® Multi-mode, Size 20 Termini Features:

- 1mm precision ceramic ferrules
- Offers increased termini density
- Designed with similar high performance components as size 16 termini
- Maintains fiber optic/electrical hybrid capabilities
- Termination accomplished using epoxy/polish method.

Size 20 Multi-mode Pin Terminus



Size 20 Multi-mode Socket Terminus



Amphenol® Multi-Channel fiber optic connectors are supplied less termini. Order multi-mode termini by Amphenol part number designation as shown in the chart above. Consult Amphenol Aerospace for further availability.

* Indicates dimension when fully assembled.
 ** Alignment sleeve shipped unassembled.
 All dimensions for reference only.

38999

- III
- HD
- Dualok
- II
- I
- SJT
- Accessories
- Aquacon
- Herm/Seal
- PCB

HIGH SPEED

Fiber Optics

Contacts
Connectors
Cables

EMI Filter
Transient

26482
Matrix 2

83723 III
Matrix | Pyle

26500
Pyle

5015
Crimp Rear Release Matrix

22992
Class 1

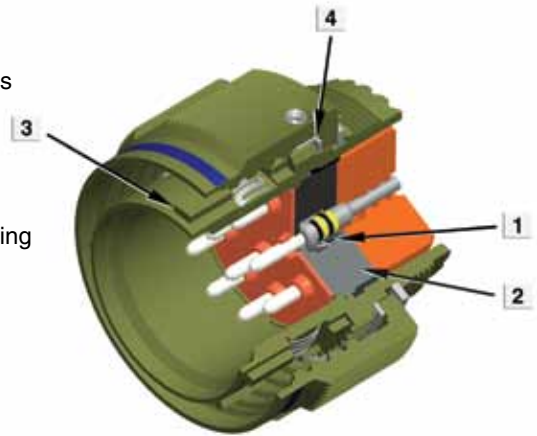
Back-Shell

Options
Others

38999

- III
- HD
- Dualok
- II
- I
- SJT
- Accessories
- Aquacon
- Herm/Seal
- PCB

- Meets or exceeds MIL-DTL-38999 Series III requirements
- EMI Shielding-solid metal-to-metal coupling, grounding fingers, electroless nickel plating, and thicker wall sections provide superior EMI shielding capability of 65dB min. at 10 GHz.
- Termini Protection-recessed pins in this 100% scoop-proof connector minimize potential termini damage
- Corrosion Resistance-shells of stainless steel or cadmium over nickel plating withstand 500 hr. salt spray exposure
- Vibration/Shock-operates under severe high temperature vibration
- Threaded coupling quickly and completely mates in one 360° turn of the coupling nut



Additional, composite connectors features include:

- Lightweight - 17%-70% weight savings
- Increased Corrosion Resistance-olive drab cadmium (175°C) and electroless nickel plating (200°C) both withstand 2000 hours of salt spray exposure.
- Durability-1500 couplings minimum (in reference to connector couplings, not termini)

The illustration above shows the key features of the CF38999. The highest optical performance connector conforming to MIL-DTL-38999

1. Beryllium-copper retention clip for improved termini stability
2. Precision-aligned inserts
3. Modified master key
4. Integrated wave washer for improved performance in high vibration environments

- HIGH SPEED**
- Fiber Optics
- Contacts
- Connectors
- Cables

EMI Filter
Transient

26482
Matrix 2

83723 III
Matrix | Pyle

26500
Pyle

5015
Crimp Rear Release Matrix

22992
Class I

Back-Shells

Options
Others

MECHANICAL/ENVIRONMENTAL

| PARAMETER | PERFORMANCE |
|-------------------|--|
| Maintenance Aging | MIL-STD-1344 Method 2002 |
| Mating Durability | 500 mating cycles |
| Insert Retention | 100 PSI/25 lbs minimum |
| Sine Vibration | 60 G (140-2000 Hz), 4 hours each at ambient, -55 deg C, and +175 deg C |
| Standard Shock | 300 G half-sine, 3 ms duration |
| High Impact Shock | MIL-S-901 grade A with lightweight fixture |
| Temperature Life | 1000 hours @ high temp rating |
| Thermal Shock | -55° C to +165° C - 5 cycles |

MATERIALS & FINISH CHARACTERISTICS

| SHELL MATERIAL/ FINISH | TEMPERATURE RATING (DEG C) | SALT SPRAY RATING (HOURS) | MIL-DTL-38999 SERVICE CLASS |
|---|----------------------------|---------------------------|-----------------------------|
| Aluminum/Durmalon | -65 to +175 | 500 | T |
| Aluminum/electroless nickel | -65 to +200 | 500 | F |
| Aluminum/olive drab cadmium plate nickel base | -65 to +175 | 500 | W |
| Stainless steel | -65 to +200 | 500 | K |
| Composite/electroless nickel | -65 to +200 | 2000 | M |
| Composite/ olive drab cadmium plate nickel base | -65 to +175 | 2000 | J |

Multi-Channel Fiber Optic Circular (CF38999 Connector) How to Order

Easy Steps to build a part number... Tri-Start Series III

| 1. | 2. | 3. | 4. | 5. | 6. |
|----------------|----------|--------|-------------|--------------------------------|------------------------------------|
| Connector Type | Material | Finish | Shell Style | Shell Size- Insert Arrangement | Contact Type & Key/Keyway Position |
| CF- | 50 | 9 | 0 | 17-08 | P |

Amphenol® Multi-Channel fiber optic connectors for use with multi-mode and single mode termini can be ordered by coded part number. Ordering procedure is illustrated by part number CF-509017-08P as shown above:

Step 1. Connector Type

| | Designates |
|-----|-------------------------------------|
| CF- | Multi-Channel Fiber Optic Connector |

Step 2. Select a Material

| | Designates |
|----|-----------------------|
| 50 | Aluminum shell |
| 60 | Composite shell |
| 80 | Stainless steel shell |

Step 3. Select a Finish

| | Designates |
|---|--|
| 4 | Electroless nickel plated aluminum, 48 hour salt spray resistance, 200°C |
| 5 | Unplated composite |
| 6 | Corrosion resistant stainless steel, 500 hour salt spray resistance, 200°C |
| 9 | Corrosion resistant olive drab cadmium plate aluminum, 500 hour salt spray resistance, 175°C |
| D | Designates Durmalon™ (Nickel-PTFE)* |
| S | Nickel plated stainless steel |

Step 4. Select a Shell Style

| | Designates |
|---|---------------------------------|
| 0 | Wall mount receptacle |
| 1 | Line receptacle |
| 2 | Box mount receptacle |
| 5 | Straight plug less ground strap |
| 6 | Straight plug |
| 7 | Jam nut receptacle |

Step 5. Select a Shell Size – Insert Arrangement from proceeding pages.

Shell Size & Insert Arrangement are on page 194. First number represents Shell Size, second number is the Insert Arrangement.

Step 6. Select a Contact Type & Key/Keyway Position

Contact Type and Key/Keyway Position

P designates pin contacts
S designates socket contacts
For key/keyway positioning, choose the alternate rotation suffix letter from the chart below.

ALTERNATE POSITION SUFFIX

| Alternate Position | Suffix Letter | |
|--------------------|---------------|---------|
| | Pins | Sockets |
| Normal | P | S |
| A | G | H |
| B | I | J |
| C | K | L |
| D | M | N |
| E | R | T |

For more information on key/keyway rotation, see the Series III MIL-DTL-38999 Section.

38999

| |
|-------------|
| III |
| HD |
| Dualok |
| II |
| I |
| SJT |
| Accessories |
| Aquacon |
| Herm/Seal |
| PCB |

| |
|-------------------|
| HIGH SPEED |
| Fiber Optics |
| Contacts |
| Connectors |
| Cables |

EMI Filter
Transient

26482
Matrix 2

83723 III
Matrix | Pyle

26500
Pyle

5015
Crimp Rear Release
Matrix

22992
Class 1

Back-Shell's

Options
Others

*Durmalon is a trademark of Amphenol. For more information on Durmalon see page 5.

Fiber optic termini can be accommodated in any size 16 or size 20 contact cavity of MIL-DTL-38999 Series III type connector insert patterns, as listed in the following chart. For availability of fiber type, either multi-mode or single mode, see note at bottom of chart.

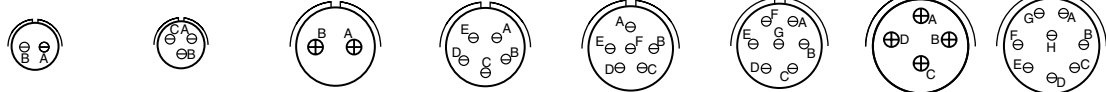
| Shell Size/ Arrangement | Total Contacts | Contact Size | | | | | | | |
|----------------------------|-------------------|--------------|--------------------------------|-----|----|--------------|---------------|-------------|--------------------|
| | | 22D | Optic Termini Availability* | | 12 | 12 (Coax) | 10 (Power) | 8 (Coax) | 8 (Twinax) ◆ |
| | | | 20 | 16 | | | | | |
| 09-94 | 2 | | 2 | | | | | | |
| 09-98 | 3 | | 3 | | | | | | |
| 11-02 | 2 | | | 2 | | | | | |
| 11-05 | 5 | | 5 | | | | | | |
| 11-98 | 6 | | 6 | | | | | | |
| 11-99 | 7 | | 7 | | | | | | |
| 13-04 | 4 | | | 4 | | | | | |
| 13-08 | 8 | | 8 | | | | | | |
| 13-13 | 4 | | | 2** | 2 | | | | |
| 13-98 | 10 | | 10 | | | | | | |
| 15-05 | 5 | | | 5 | | | | | |
| 15-15 | 15 | | 14 | 1 | | | | | |
| 15-18 | 18 | | 18 | | | | | | |
| 15-19 | 19 | | 19 | | | | | | |
| 15-97 | 12 | | 8 | 4 | | | | | |
| 17-08 | 8 | | | 8 | | | | | |
| 17-26 | 26 | | 26 | | | | | | |
| 17-99 | 23 | | 21 | 2 | | | | | |
| 19-11 | 11 | | | 11 | | | | | |
| 19-28 | 28 | | 26 | 2 | | | | | |
| 19-32 | 32 | | 32 | | | | | | |
| 21-16 | 16 | | | 16 | | | | | |
| 21-29 | 27 | | 19 | 4 | 4 | | | | |
| 21-39 | 39 | | 37 | 2 | | | | | |
| 21-41 | 41 | | 41 | | | | | | |
| 23-21 | 21 | | | 21 | | | | | |
| 23-53 | 53 | | 53 | | | | | | |
| 23-54 | 53 | 40 | | 9 | 4 | | | | |
| 23-55 | 55 | | 55 | | | | | | |
| 25-04 | 56 | | 48 | 8 | | | | | |
| 25-11*** | 11 | | 2 | | | 9 | | | |
| 25-20*** | 30 | | 10 | 13 | | 4 | | 3 | |
| 25-24 | 24 | | | 12 | 12 | | | | |
| 25-26 | 25 | | 16 | | 5 | | 4 | | |
| 25-29 | 29 | | | 29 | | | | | |
| 25-37 | 37 | | | 37 | | | | | |
| 25-41 | 41 | 22 | 3 | 11 | | 2 | | 3 | |
| 25-43 | 43 | | 23 | 20 | | | | | |
| 25-46 | 46 | | 40 | 4 | | | 2† | | |
| 25-61 | 61 | | 61 | | | | | | |
| 25-90 | 46 | | 40 | 4 | | | | 2 | |
| 25-F4 | 66 | 49 | | 13 | 4 | | | | |

* Size 16 multi-mode and single mode fiber optic termini are readily available. For size 20 multi-mode termini consult Amphenol Aerospace for availability.
 ** Two size 16 contacts dedicated to fiber optics.
 *** For use in MIL-STD-1760 applications. See 38999 Series III section in this catalog.
 † For RG180/U and RG195/U cables only. Contact Amphenol for other cable applications.
 ◆ Size 8 coax and Twinax are interchangeable.
 For service ratings and performance of electrical contacts see 38999 Series III section in this catalog.

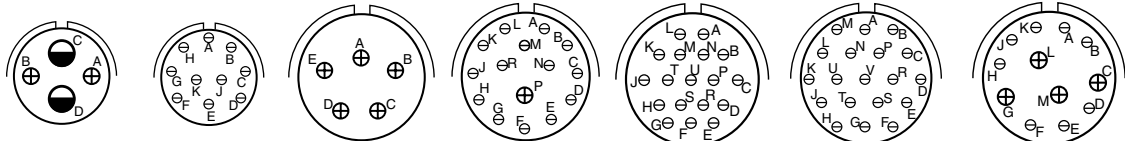
- 38999
- III
- HD
- Dualok
- II
- I
- SJT
- Accessories
- Aquacon
- Herm/Seal
- PCB
- HIGH SPEED**
- Fiber Optics
- Contacts
- Connectors
- Cables
- EMI Filter
- Transient
- 26482
- Matrix 2
- 83723 III
- Matrix | Pyle
- 26500
- Pyle
- 5015
- Crimp Rear Release Matrix
- 22992
- Class I
- Back-Shells
- Options
- Others

Multi-Channel Fiber Optic Circular (CF38999 Connector) Insert Arrangements

Front face of pin inserts illustrated

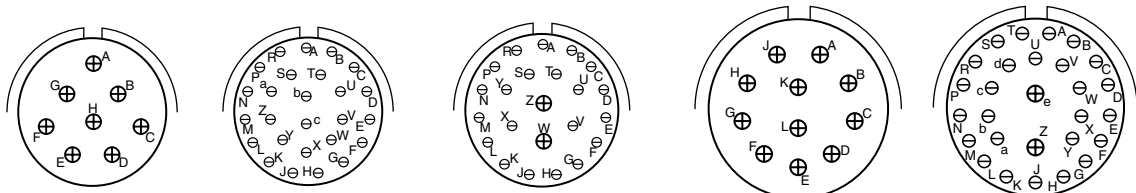


| Insert Arrangement | 09-94 | 09-98 | 11-02 | 11-05 | 11-98 | 11-99 | 13-04 | 13-08 |
|--------------------|-------|-------|-------|-------|-------|-------|-------|-------|
| Number of Contacts | 2 | 3 | 2 | 5 | 6 | 7 | 4 | 8 |
| Contact Size | 20 | 20 | 16 | 20 | 20 | 20 | 16 | 20 |

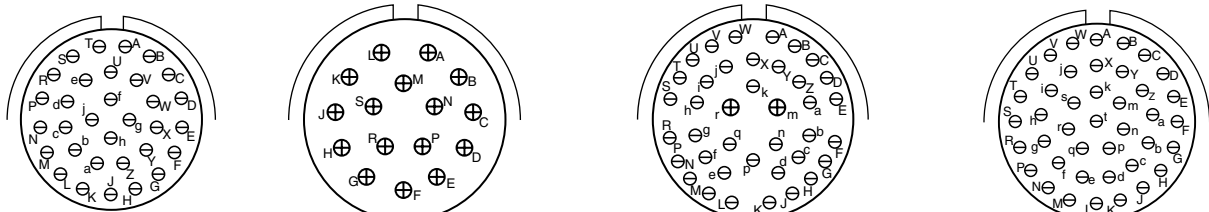


| Insert Arrangement | 13-13 | 13-98 | 15-05 | 15-15 | 15-18 | 15-19 | 15-97 | | | |
|--------------------|-------|-------|-------|-------|-------|-------|-------|----|----|----|
| Number of Contacts | 2 | 2 | 10 | 5 | 14 | 1 | 18 | 19 | 8 | 4 |
| Contact Size | 16 | 12 | 20 | 16 | 20 | 20 | 20 | 20 | 20 | 16 |

Dedicated to
Fiber Optics



| Insert Arrangement | 17-08 | 17-26 | 17-99 | 19-11 | 19-28 | | |
|--------------------|-------|-------|-------|-------|-------|----|----|
| Number of Contacts | 2 | 26 | 21 | 2 | 11 | 26 | 2 |
| Contact Size | 16 | 20 | 20 | 16 | 16 | 20 | 16 |



| Insert Arrangement | 19-32 | 21-16 | 21-39 | 21-41 | |
|--------------------|-------|-------|-------|-------|----|
| Number of Contacts | 32 | 16 | 37 | 2 | 41 |
| Contact Size | 20 | 16 | 20 | 16 | 20 |



38999

- III
- HD
- Dualok
- II
- I
- SJT
- Accessories
- Aquacon
- Herm/Seal
- PCB

- HIGH SPEED**
- Fiber Optics
- Contacts
- Connectors
- Cables

EMI Filter
Transient

26482
Matrix 2

83723 III
Matrix | Pyle

26500
Pyle

5015
Crimp Rear
Release
Matrix

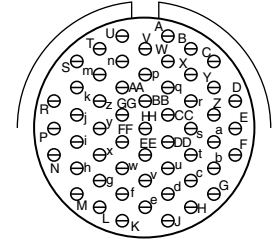
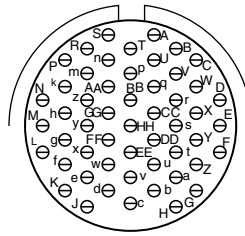
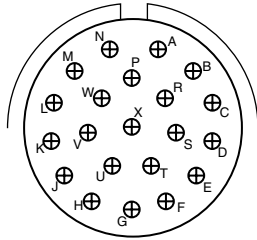
22992
Class 1

Back-
Shells

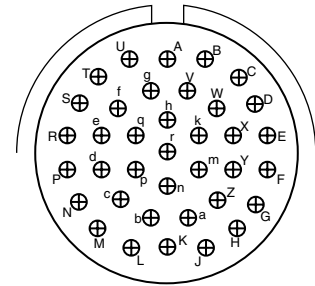
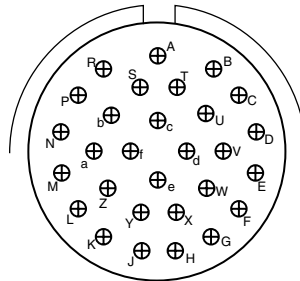
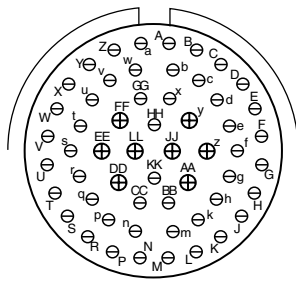
Options
Others

- 38999
- III
- HD
- Dualok
- II
- I
- SJT
- Accessories
- Aquacon
- Herm/Seal
- PCB

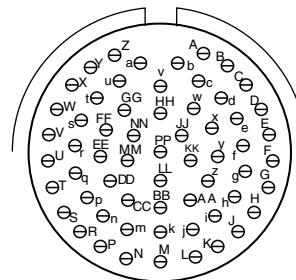
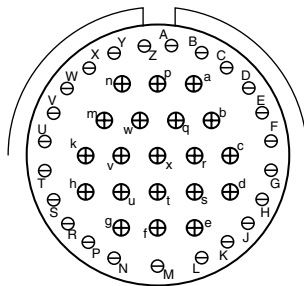
Front face of pin inserts illustrated



| Insert Arrangement | 23-21 | 23-53 | 23-55 |
|--------------------|-------|-------|-------|
| Number of Contacts | 21 | 53 | 55 |
| Contact Size | 16 | 20 | 20 |



| Insert Arrangement | 25-04 | 25-29 | 25-37 |
|--------------------|----------|-------|-------|
| Number of Contacts | 48 6 | 29 | 37 |
| Contact Size | 20 16 | 16 | 16 |



| Insert Arrangement | 25-43 | 25-61 |
|--------------------|----------|-------|
| Number of Contacts | 23 20 | 61 |
| Contact Size | 20 16 | 20 |

- HIGH SPEED**
- Fiber Optics
- Contacts
- Connectors
- Cables

- EMI Filter
- Transient

- 26482
- Matrix 2

- 83723 III
- Matrix | Pyle

- 26500
- Pyle

- 5015
- Crimp Rear Release Matrix

- 22992
- Class 1

- Back-Shells

- Options
- Others

***For use in MIL-STD-1760 applications. See 38999 Series III section in this catalog.
 † 12 Coax Contacts can be Matched Impedance or Power

CONTACT LEGEND

Multi-Channel Fiber Optic Circular (CF38999) Wall Mount/Box Mount Receptacles

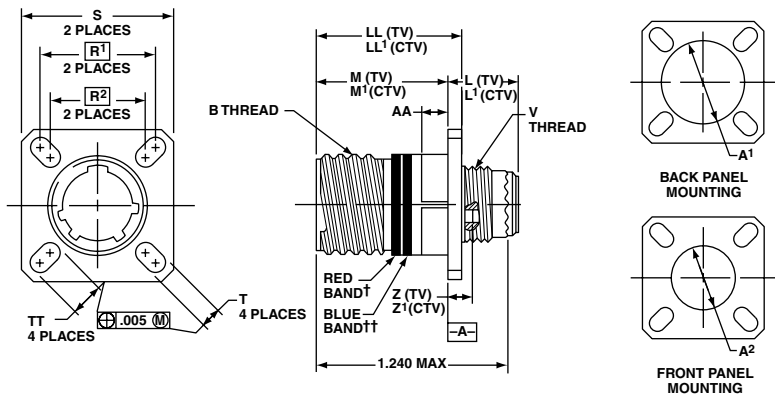
TRI-START™ METAL AND COMPOSITE CONNECTORS

Wall Mount Receptacle with Fiber Optics shell style 0

For complete part number, see how to order, page 193.

† Red Band indicates fully mated
†† Blue band indicates rear release contact retention system

□ Designates true position dimensioning



All dimensions for reference only

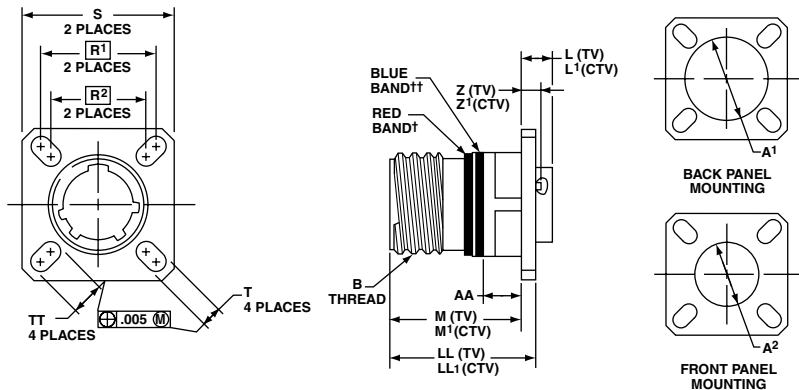
| Shell Size | MS Shell Size Code | BThread Class 2A 0.1P-0.3L-TS (Plated) | L Max. (TV) | L ¹ Max. (CTV) | M +.000 - .005 (TV) | M ¹ +.000 - .005 (CTV) | R ¹ | R ² | S Max. | T +.008 | V Thread Metric | Z Max. (TV) | Z ¹ Max. (CTV) | A ¹ Dia. Back Panel Mount | A ² Dia. Front Panel Mount | AA Max. Panel Thickness | LL +.006 - .000 (TV) | LL ¹ ±.005 (CTV) | TT ±.008 |
|------------|--------------------|--|-------------|---------------------------|---------------------|-----------------------------------|----------------|----------------|--------|---------|-----------------|-------------|---------------------------|--------------------------------------|---------------------------------------|-------------------------|----------------------|-----------------------------|----------|
| 9 | A | .6250 | .469 | .514 | .820 | .773 | .719 | .594 | .948 | .128 | M12X1-6g | .153 | .198 | .650 | .510 | .234 | .905 | .908 | .216 |
| 11 | B | .7500 | .469 | .514 | .820 | .773 | .812 | .719 | 1.043 | .128 | M15X1-6g | .153 | .198 | .800 | .620 | .234 | .905 | .908 | .194 |
| 13 | C | .8750 | .469 | .514 | .820 | .773 | .906 | .812 | 1.137 | .128 | M18X1-6g | .153 | .198 | .910 | .740 | .234 | .905 | .908 | .194 |
| 15 | D | 1.0000 | .469 | .514 | .820 | .773 | .969 | .906 | 1.232 | .128 | M22X1-6g | .153 | .198 | 1.040 | .900 | .234 | .905 | .908 | .173 |
| 17 | E | 1.1875 | .469 | .514 | .820 | .773 | 1.062 | .969 | 1.323 | .128 | M25X1-6g | .153 | .198 | 1.210 | 1.010 | .234 | .905 | .908 | .194 |
| 19 | F | 1.2500 | .469 | .514 | .820 | .773 | 1.156 | 1.062 | 1.449 | .128 | M28X1-6g | .153 | .198 | 1.280 | 1.130 | .234 | .905 | .908 | .194 |
| 21 | G | 1.3750 | .500 | .545 | .790 | .741 | 1.250 | 1.156 | 1.575 | .128 | M31X1-6g | .183 | .228 | 1.410 | 1.250 | .204 | .905 | .904 | .194 |
| 23 | H | 1.5000 | .500 | .545 | .790 | .741 | 1.375 | 1.250 | 1.701 | .154 | M34X1-6g | .183 | .228 | 1.530 | 1.360 | .204 | .905 | .904 | .242 |
| 25 | J | 1.6250 | .500 | .545 | .790 | .741 | 1.500 | 1.375 | 1.823 | .154 | M37X1-6g | .183 | .228 | 1.660 | 1.470 | .204 | .905 | .904 | .242 |

Box Mount Receptacle with Fiber Optics shell style 2

For complete part number, see how to order, page 193. Consult Amphenol Aerospace for availability of composite box mount receptacles.

† Red Band indicates fully mated
†† Blue band indicates rear release contact retention system

□ Designates true position dimensioning



All dimensions for reference only

| Shell Size | MS Shell Size Code | BThread Class 2A 0.1P-0.3L-TS (Plated) | L Max. (TV) | L ¹ Max. (CTV) | M +.000 - .005 (TV) | M ¹ +.000 - .005 (CTV) | R ¹ | R ² | S Max. | T +.008 | Z Max. (TV) | Z ¹ Max. (CTV) | A ¹ Dia. Back Panel Mount | A ² Dia. Front Panel Mount | AA Max. Panel Thickness | LL +.006 - .000 (TV) | LL ¹ ±.005 (CTV) | TT ±.008 |
|------------|--------------------|--|-------------|---------------------------|---------------------|-----------------------------------|----------------|----------------|--------|---------|-------------|---------------------------|--------------------------------------|---------------------------------------|-------------------------|----------------------|-----------------------------|----------|
| 9 | A | .6250 | .205 | .250 | .820 | .773 | .719 | .594 | .948 | .128 | .153 | .198 | .650 | .510 | .234 | .905 | .908 | .216 |
| 11 | B | .7500 | .205 | .250 | .820 | .773 | .812 | .719 | 1.043 | .128 | .153 | .198 | .800 | .620 | .234 | .905 | .908 | .194 |
| 13 | C | .8750 | .205 | .250 | .820 | .773 | .906 | .812 | 1.137 | .128 | .153 | .198 | .910 | .740 | .234 | .905 | .908 | .194 |
| 15 | D | 1.0000 | .205 | .250 | .820 | .773 | .969 | .906 | 1.232 | .128 | .153 | .198 | 1.040 | .900 | .234 | .905 | .908 | .173 |
| 17 | E | 1.1875 | .205 | .250 | .820 | .773 | 1.062 | .969 | 1.323 | .128 | .153 | .198 | 1.210 | 1.010 | .234 | .905 | .908 | .194 |
| 19 | F | 1.2500 | .205 | .250 | .820 | .773 | 1.156 | 1.062 | 1.449 | .128 | .153 | .198 | 1.280 | 1.130 | .234 | .905 | .908 | .194 |
| 21 | G | 1.3750 | .235 | .280 | .790 | .741 | 1.250 | 1.156 | 1.575 | .128 | .183 | .228 | 1.410 | 1.250 | .204 | .905 | .904 | .194 |
| 23 | H | 1.5000 | .235 | .280 | .790 | .741 | 1.375 | 1.250 | 1.701 | .154 | .183 | .228 | 1.530 | 1.360 | .204 | .905 | .904 | .242 |
| 25 | J | 1.6250 | .235 | .280 | .790 | .741 | 1.500 | 1.375 | 1.823 | .154 | .183 | .228 | 1.660 | 1.470 | .204 | .905 | .904 | .242 |

38999

- III
- HD
- Dualok
- II
- I
- SJT
- Accessories
- Aquacon
- Herm/Seal
- PCB

HIGH SPEED
Fiber Optics
Contacts
Connectors
Cables

EMI Filter
Transient

26482
Matrix 2

83723 III
Matrix | Pyle

26500
Pyle

5015
Crmp Rear Release Matrix

22992
Class 1

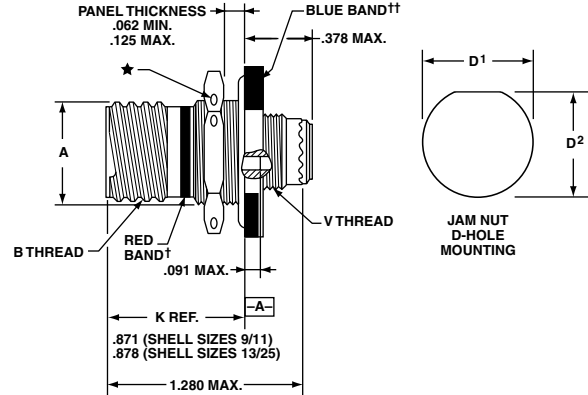
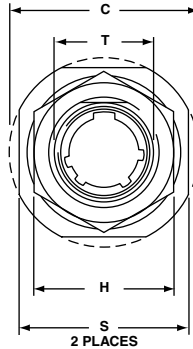
Back-Shell

Options
Others

TRI-START™ METAL AND COMPOSITE CONNECTORS

Jam Nut Receptacle with Fiber Optics shell style 7

For complete part number, see how to order, page 193.



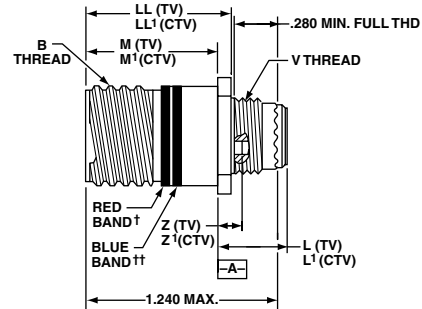
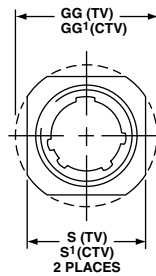
† Red Band indicates fully mated
†† Blue band indicates rear release contact retention system

★ .059 dia. min. 3 lockwire holes
Formed lockwire hole design (6 holes) is optional
All dimensions for reference only

| Shell Size | MS Shell Size Code | A* +.000 -.010 | BThread Class 2A 0.1P-0.3L-TS (Plated) | C Max. | D ¹ +.010 -.000 | D ² +.000 -.010 | H Hex +.017 -.016 | S ±.010 | T +.010 -.000 | V Thread Metric |
|------------|--------------------|----------------------|---|-----------|----------------------------------|----------------------------------|-------------------------|------------|---------------------|-----------------|
| 9 | A | .669 | .6250 | 1.199 | .700 | .670 | .875 | 1.062 | .697 | M12X1-6g |
| 11 | B | .769 | .7500 | 1.386 | .825 | .770 | 1.000 | 1.250 | .822 | M15X1-6g |
| 13 | C | .955 | .8750 | 1.511 | 1.010 | .955 | 1.188 | 1.375 | 1.007 | M18X1-6g |
| 15 | D | 1.084 | 1.0000 | 1.636 | 1.135 | 1.085 | 1.312 | 1.500 | 1.134 | M22X1-6g |
| 17 | E | 1.208 | 1.1875 | 1.761 | 1.260 | 1.210 | 1.438 | 1.625 | 1.259 | M25X1-6g |
| 19 | F | 1.333 | 1.2500 | 1.949 | 1.385 | 1.335 | 1.562 | 1.812 | 1.384 | M28X1-6g |
| 21 | G | 1.459 | 1.3750 | 2.073 | 1.510 | 1.460 | 1.688 | 1.938 | 1.507 | M31X1-6g |
| 23 | H | 1.575 | 1.5000 | 2.199 | 1.635 | 1.585 | 1.812 | 2.062 | 1.634 | M34X1-6g |
| 25 | J | 1.709 | 1.6250 | 2.323 | 1.760 | 1.710 | 2.000 | 2.188 | 1.759 | M37X1-6g |

Line Receptacle with Fiber Optics shell style 1

For complete part number, see how to order, page 193.



† Red Band indicates fully mated
†† Blue band indicates rear release contact retention system

All dimensions for reference only

| Shell Size | MS Shell Size Code | BThread 0.1P-0.3L-TS-2A (Plated) | L Max. (TV) | L ¹ Max. (CTV) | M +.000 -.005 | M ¹ +.000 -.005 | S ±.010 (TV) | S ¹ ±.010 (CTV) | V Thread Metric | Z Max. (TV) | Z ¹ Max. (CTV) | GG Dia. ±.010 (TV) | GG ¹ Dia. ±.010 (CTV) | LL +.006 -.000 (TV) | LL ¹ ±.005 (CTV) |
|------------|--------------------|--|-------------------|---------------------------------|---------------------|----------------------------------|--------------------|----------------------------------|-----------------|-------------------|---------------------------------|-----------------------------|---|------------------------------|-----------------------------------|
| 9 | A | .6250 | .469 | .514 | .820 | .773 | .675 | .635 | M12X1-6g | .153 | .198 | .812 | .699 | .905 | .908 |
| 11 | B | .7500 | .469 | .514 | .820 | .773 | .800 | .765 | M15X1-6g | .153 | .198 | .905 | .875 | .905 | .908 |
| 13 | C | .8750 | .469 | .514 | .820 | .773 | .925 | .885 | M18X1-6g | .153 | .198 | 1.093 | 1.007 | .905 | .908 |
| 15 | D | 1.0000 | .469 | .514 | .820 | .773 | 1.050 | 1.100 | M22X1-6g | .153 | .198 | 1.219 | 1.140 | .905 | .908 |
| 17 | E | 1.1875 | .469 | .514 | .820 | .773 | 1.238 | 1.197 | M25X1-6g | .153 | .198 | 1.375 | 1.229 | .905 | .908 |
| 19 | F | 1.2500 | .469 | .514 | .820 | .773 | 1.300 | 1.260 | M28X1-6g | .153 | .198 | 1.469 | 1.380 | .905 | .908 |
| 21 | G | 1.3750 | .500 | .545 | .790 | .741 | 1.425 | 1.385 | M31X1-6g | .183 | .228 | 1.625 | 1.493 | .905 | .904 |
| 23 | H | 1.5000 | .500 | .545 | .790 | .741 | 1.550 | 1.510 | M34X1-6g | .183 | .228 | 1.750 | 1.626 | .905 | .904 |
| 25 | J | 1.6250 | .500 | .545 | .790 | .741 | 1.675 | 1.635 | M37X1-6g | .183 | .228 | 1.875 | 1.777 | .905 | .904 |

38999
III
HD
Dualok
II
I
SJT
Accessories
Aquacon
Herm/Seal
PCB

HIGH SPEED
Fiber Optics
Contacts
Connectors
Cables

EMI Filter
Transient

26482
Matrix 2

83723 III
Matrix | Pyle

26500
Pyle

5015
Crimp Rear Release Matrix

22992
Class 1

Back-Shells

Options
Others

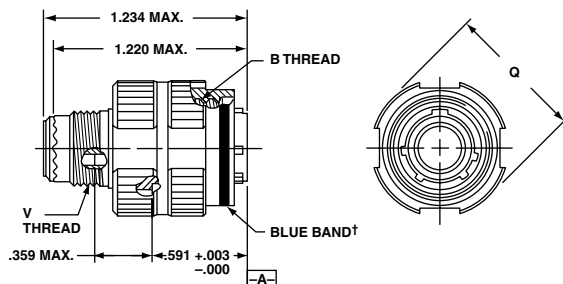
Multi-Channel Fiber Optic Circular (CF38999) Straight Plug

TRI-START™ METAL AND COMPOSITE CONNECTORS

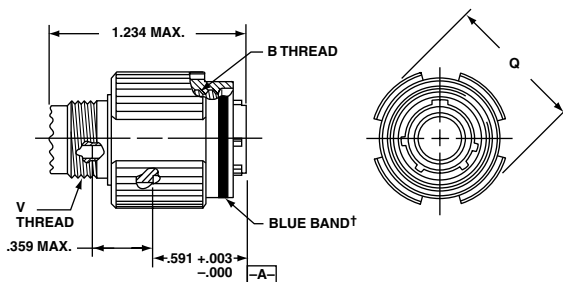
Straight Plug with Fiber Optics shell style 6

For complete part number,
see how to order, page 193.

METAL



COMPOSITE



† Blue band indicates rear release contact retention system

| Shell Size | MS Shell Size Code | B Thread 0.1P-0.3L-TS-2B (Plated) | Q Dia. Max. | V Thread Metric |
|------------|--------------------|---|----------------|--------------------|
| 9 | A | .6250 | .858 | M12X1-6g |
| 11 | B | .7500 | .984 | M15X1-6g |
| 13 | C | .8750 | 1.157 | M18X1-6g |
| 15 | D | 1.0000 | 1.280 | M22X1-6g |
| 17 | E | 1.1875 | 1.406 | M25X1-6g |
| 19 | F | 1.2500 | 1.516 | M28X1-6g |
| 21 | G | 1.3750 | 1.642 | M31X1-6g |
| 23 | H | 1.5000 | 1.768 | M34X1-6g |
| 25 | J | 1.6250 | 1.890 | M37X1-6g |

38999

- III
- HD
- Dualok
- II
- I
- SJT
- Accessories
- Aquacon
- Herm/Seal
- PCB

**HIGH
SPEED**

Fiber
Optics

Contacts
Connectors
Cables

EMI Filter
Transient

26482
Matrix 2

83723 III
Matrix | Pyle

26500
Pyle

5015
Crimp Rear
Release
Matrix

22992
Class 1

Back-
Shells

Options
Others

- 38999
- III
- HD
- Dualok
- II
- I
- SJT
- Accessories
- Aquacon
- Herm/Seal
- PCB



Order Information for Fiber Optic Pin

| | Amphenol Part No. | Fiber Size Core/Cladding | A Dia. Ref. (Microns) | Ferrule Hole Tolerance |
|----------|-------------------|--------------------------|-----------------------|------------------------|
| JSFC18-1 | CF-198142-25A | 9/125 | 125.5 | +1,-0 |
| JSFC18-2 | CF-198142-126 | 50/125 | 126 | +1,-0 |
| JSFC18-3 | CF-198142-053 | 200/230 | 236 | +4,-0 |

Ordering Information for Fiber Optic Socket

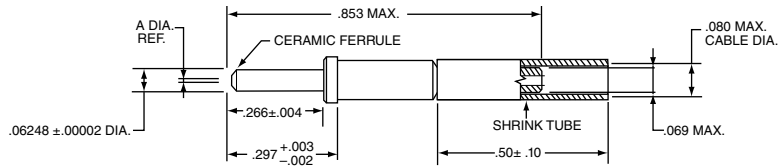
| | Amphenol Part No. | Fiber Size Core/Cladding | A Dia. Ref. (Microns) | Ferrule Hole Tolerance |
|----------|-------------------|--------------------------|-----------------------|------------------------|
| JSFC17-1 | CF-198143-25A | 9/125 | 125.5 | +1,-0 |
| JSFC17-2 | CF-198143-126 | 50/125 | 126 | +1,-0 |
| JSFC17-3 | CF-198143-053 | 200/230 | 236 | +4,-0 |

- Approved for use in JSF/F35 applications
- Precision ceramic ferrules which precisely position the fiber within the termini
- Precision ceramic alignment sleeves ensure accurate fiber-to-fiber alignment
- Socket has threaded protective shroud with anti-rotation key, manufactured from rugged PEEK™ material, provides protection for the ceramic alignment sleeve
- Stainless steel termini bodies and springs



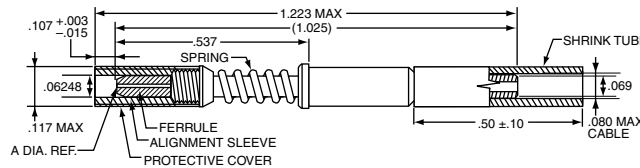
CF-198142-XXX JSFC18-X

Size 16 Pin Terminus



CF-198143-XXX JSFC17-X

Size 16 Socket Terminus



MECHANICAL/ENVIRONMENTAL

| PARAMETER | PERFORMANCE |
|-----------------------------------|-------------------------------------|
| Cable pull-out force | 22 lbs for 1 minute |
| Mating durability | 500 cycles |
| Shock - high impact | MIL-S-901 Grade A, Type B, Class I |
| Shock - half sine pulse | 300 g, 3 ms duration |
| Vibration - sine | 60 g, 36 cycles |
| Vibration - random | 49.5 g rms |
| Vibration - random at temperature | 41.7 g rms @ 125 deg C |
| Salt spray | 48 hours direct exposure @ 35 deg C |
| Thermal shock | -55 deg C to +165 deg C, 5 cycles |
| Temperature Life | 165 deg C for 1000 hours |

MATERIALS LIST

| COMPONENT | MATERIAL |
|-------------------------|----------------------------|
| Ferrule | Zirconia |
| Alignment sleeve | Zirconia |
| Termini body | Stainless Steel – AMS 5514 |
| Spring | Stainless Steel – AMS 5678 |
| Alignment sleeve shroud | PEEK™ |
| Heat shrink | Kynar, MIL-I-23053/8 |

HIGH SPEED
Fiber Optics

Contacts
Connectors
Cables

EMI Filter
Transient

26482 Matrix 2

83723 III Matrix | Pyle

26500 Pyle

5015 Crimp Rear Release Matrix

22992 Class I

Back-Shells

Options Others

JSFC15 Receptacle /JSF16 Plug Connectors

How to Order

- Approved for use in JSF/F35 applications
- Based on Amphenol® Composite Tri-Start, Qualified to MIL-DTL-38999, Rev. J.
- Increased Corrosion Resistance-nickel plating (200°C) both withstand 2000 hours of salt spray exposure.
- Durability-1500 couplings minimum (in reference to connector couplings, not termini)
- Termini Protection-recessed pins in this 100% scoop-proof connector minimize potential termini damage
- Vibration/Shock-operates under severe high temperature vibration
- Threaded coupling quickly and completely mates in one 360° turn of the coupling nut



JSFC15 Receptacle and JSFC16 Fiber Optic Plug

38999

| |
|-------------|
| III |
| HD |
| Dualok |
| II |
| I |
| SJT |
| Accessories |
| Aquacon |
| Herm/Seal |
| PCB |

| |
|---------------------|
| HIGH SPEED |
| Fiber Optics |
| Contacts |
| Connectors |
| Cables |

EMI Filter
Transient

26482
Matrix 2

83723 III
Matrix | Pyle

26500
Pyle

5015
Crimp Rear Release Matrix

22992
Class 1

Back-Shell's

Options
Others

MECHANICAL/ENVIRONMENTAL

| PARAMETER | PERFORMANCE |
|-------------------|--|
| Maintenance Aging | MIL-STD-1344 Method 2002 |
| Mating Durability | 500 mating cycles |
| Insert Retention | 100 PSI/25 lbs minimum |
| Sine Vibration | 60 G (140-2000 Hz), 4 hours each at ambient, -55 deg C, and +175 deg C |
| Standard Shock | 300 G half-sine, 3 ms duration |
| High Impact Shock | MIL-S-901 grade A with lightweight fixture |
| Temperature Life | 1000 hours @ high temp rating |
| Thermal Shock | -55° C to +165° C - 5 cycles |



Easy Steps to build a part number... JSFC15 & JSFC16

| | 1. | 2. | 3. | 4. | 5. | 6. |
|--|---------------------|--------------|---------------|---------------------------------|--------------|---------------------|
| | Program Part Number | Shell Styles | Service Class | Shell Size – Insert arrangement | Contact Type | Alternate Positions |
| | JSFC15 | 20 | M | E – 8 | A | N |
| | JSFC16 | 26 | M | E – 8 | B | N |

Step 1. Select a Connector Type

| | Designates |
|---------------|---------------------------------|
| JSFC15 | Receptacle circular fiber optic |
| JSFC16 | Plug circular fiber optic |

Step 2. Select a Shell Style

| | Designates |
|-----------|------------------------------|
| 20 | JSFC15 Wall Mount Receptacle |
| 26 | JSFC16 Straight Plug |

Step 3. Select a Service Class

| | Designates |
|----------|-------------------------------------|
| M | Composite, electroless nickel plate |

Step 4. Select a Shell Size – Insert Arrangement

Shell Sizes are MIL-DTL-38999, Series III, plus newer High Density Insert Arrangements

| Shell Size | Insert Arrangement |
|-----------------|--------------------|
| B – (11) | 2 |
| C – (13) | 4 |
| D – (15) | 5 |
| E – (17) | 8 |

| Shell Size | Insert Arrangement |
|-----------------|--------------------|
| F – (19) | 11 |
| G – (21) | 16 |
| H – (23) | 21 |
| J – (25) | 29 |
| J – (25) | 37 |

Step 5. Select a Contact Type

| | Designates |
|----------|-----------------|
| A | Pin contacts |
| B | Socket contacts |

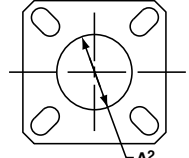
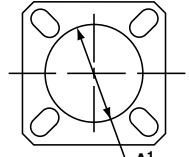
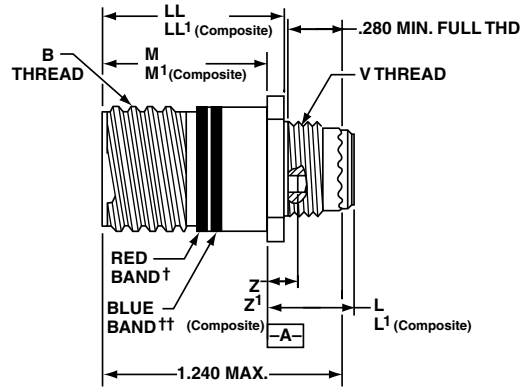
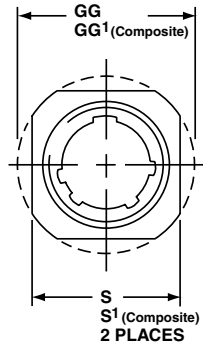
Step 6. Select an Alternate Position

A, B, C, D, E, N for normal

38999

JSFC15
Wall Mount Receptacle with
Fiber Optics
Shell Style 20

For complete part number see how to order, page 201



† Red Band indicates fully mated
†† Blue band indicates rear release contact retention system

□ Designates true position dimensioning

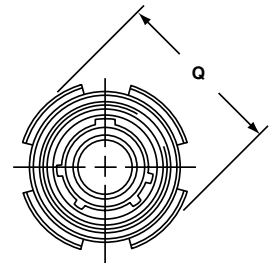
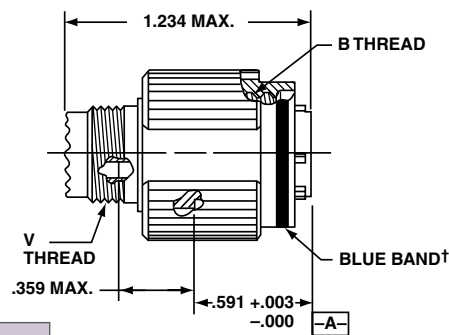
All dimensions for reference only

| Shell Size | MS Shell Size Code | B Thread Class 2A 0.1P-0.3L-TS (Plated) | L Max. (TV) | L ¹ Max. (CTV) | M +.000 - .005 (TV) | M ¹ +.000 - .005 (CTV) | R ¹ | R ² | S Max. | T +.008 | V Thread Metric | Z Max. (TV) | Z ¹ Max. (CTV) | A ¹ Dia. Back Panel Mount | A ² Dia. Front Panel Mount | AA Max. Panel Thickness | LL +.006 - .000 (TV) | LL ¹ ±.005 (CTV) | TT ±.008 |
|------------|--------------------|---|-------------|---------------------------|---------------------|-----------------------------------|----------------|----------------|--------|---------|-----------------|-------------|---------------------------|--------------------------------------|---------------------------------------|-------------------------|----------------------|-----------------------------|----------|
| 9 | A | .6250 | .469 | .514 | .820 | .773 | .719 | .594 | .948 | .128 | M12X1-6g | .153 | .198 | .650 | .510 | .234 | .905 | .908 | .216 |
| 11 | B | .7500 | .469 | .514 | .820 | .773 | .812 | .719 | 1.043 | .128 | M15X1-6g | .153 | .198 | .800 | .620 | .234 | .905 | .908 | .194 |
| 13 | C | .8750 | .469 | .514 | .820 | .773 | .906 | .812 | 1.137 | .128 | M18X1-6g | .153 | .198 | .910 | .740 | .234 | .905 | .908 | .194 |
| 15 | D | 1.0000 | .469 | .514 | .820 | .773 | .969 | .906 | 1.232 | .128 | M22X1-6g | .153 | .198 | 1.040 | .900 | .234 | .905 | .908 | .173 |
| 17 | E | 1.1875 | .469 | .514 | .820 | .773 | 1.062 | .969 | 1.323 | .128 | M25X1-6g | .153 | .198 | 1.210 | 1.010 | .234 | .905 | .908 | .194 |
| 19 | F | 1.2500 | .469 | .514 | .820 | .773 | 1.156 | 1.062 | 1.449 | .128 | M28X1-6g | .153 | .198 | 1.280 | 1.130 | .234 | .905 | .908 | .194 |
| 21 | G | 1.3750 | .500 | .545 | .790 | .741 | 1.250 | 1.156 | 1.575 | .128 | M31X1-6g | .183 | .228 | 1.410 | 1.250 | .204 | .905 | .904 | .194 |
| 23 | H | 1.5000 | .500 | .545 | .790 | .741 | 1.375 | 1.250 | 1.701 | .154 | M34X1-6g | .183 | .228 | 1.530 | 1.360 | .204 | .905 | .904 | .242 |
| 25 | J | 1.6250 | .500 | .545 | .790 | .741 | 1.500 | 1.375 | 1.823 | .154 | M37X1-6g | .183 | .228 | 1.660 | 1.470 | .204 | .905 | .904 | .242 |

JSFC16
Straight Plug with Fiber Optics
Shell Style 26

For complete part number see how to order, page 201

COMPOSITE



† Blue band indicates rear release contact retention system

All dimensions for reference only

| Shell Size | MS Shell Size Code | B Thread 0.1P-0.3L-TS-2B (Plated) | Q Dia. Max. | V Thread Metric |
|------------|--------------------|-----------------------------------|-------------|-----------------|
| 9 | A | .6250 | .858 | M12X1-6g |
| 11 | B | .7500 | .984 | M15X1-6g |
| 13 | C | .8750 | 1.157 | M18X1-6g |
| 15 | D | 1.0000 | 1.280 | M22X1-6g |
| 17 | E | 1.1875 | 1.406 | M25X1-6g |
| 19 | F | 1.2500 | 1.516 | M28X1-6g |
| 21 | G | 1.3750 | 1.642 | M31X1-6g |
| 23 | H | 1.5000 | 1.768 | M34X1-6g |
| 25 | J | 1.6250 | 1.890 | M37X1-6g |

III
HD
Dualok
II
I
SJT
Accessories
Aquacon
Herm/Seal
PCB

HIGH SPEED
Fiber Optics

Contacts
Connectors
Cables

EMI Filter
Transient

26482
Matrix 2

83723 III
Matrix | Pyle

26500
Pyle

5015
Crimp Rear Release Matrix

22992
Class 1

Back-Shells

Options
Others

ARINC 801 Termini

Genderless, Keyed Termini Features/How to Order



ARINC 801 Termini

Designed for use in ARINC 801 Fiber Optic Connectors

Ordering Information for ARINC 801 Termini for ARINC 801 Connectors

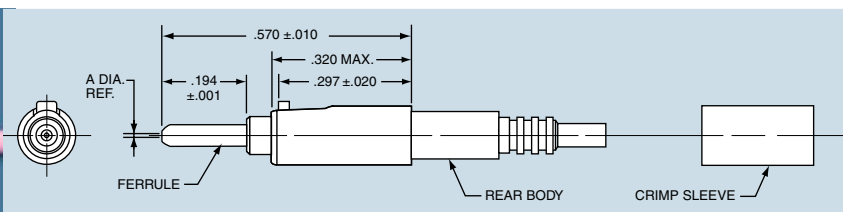
| Amphenol ARINC 801 Termini Part Number | A Dia. Ref | Ferrule Hole Tolerance |
|--|------------|------------------------|
| CF-198148-126 | 126 | +1, -0 |
| CF-198148-128 | 128 | +2, -0 |

Amphenol® ARINC 801 Termini Features:

- Designed for use in Amphenol ARINC 801 fiber optic connectors - manufactured to comply with ARINC 801.
- Genderless terminus allows for use on both sides of a connector
- Alignment sleeves are contained in a separate carrier which is removable for easier end-face cleaning
- Precision ceramic ferrules and sleeves ensure accurate fiber-to-fiber alignment
- Keyed to provide anti-rotation
- Available with both PC and APC end-face finishes
- Terminus body is crimped to the cable providing a "Pull-Proof" advantage

Amphenol ARINC fiber optic connectors are supplied less contacts. Order ARINC 801 termini by Amphenol part number designation as shown in the chart at right. Consult Amphenol, Sidney, NY for further availability.

See page 204 for information on ARINC 801 termini in circular 38999 connectors.



All dimensions for reference only.

OPTICAL / MECHANICAL / ENVIRONMENTAL

| Parameter | Performance |
|-------------------------|--|
| Insertion Loss (850 nm) | 0.30 dB max., 0.15 dB typical (multi-mode) |
| Return Loss (850 nm) | -20 dB max., -40 dB typical (multi-mode) |
| Thermal Cycling | EIA 364-032D, Test condition VII (-55C to +100C; 5 cycles) |
| Altitude Immersion | TIA/EIA-455-15 |
| Temperature Life | TIA/EIA-455-4 (100C for 1000 hours) |
| Vibration | TIA/EIA-455-11 (condition VI-G, eight hrs. per axis) |
| Mechanical Shock | TIA/EIA-455-14, Condition D |
| Humidity | TIA/EIA-455-5 |
| Salt Spray | EIA-364-026B, Condition C (500 hours) |
| Fluid Immersion | Standard Aerospace Fluids |

TERMINI COMPONENTS / MATERIALS

| Component | Material |
|------------|-----------------------------|
| Outer body | Stainless Steel |
| Spring | Stainless Steel, passivated |
| Ferrule | Zirconia Ceramic |

ORDERING INFORMATION ARINC 801 TERMINI

| Amphenol ARINC 801 Termini Part Number | A Dia. Ref. | Ferrule Hole Tolerance |
|--|-------------|------------------------|
| CF-198148-126 | 126 | +1, -0 |
| CF-198148-128 | 128 | +2, -0 |

38999

Qualok

II

I

SJT

Accessories

Aquacon

Herm/Seal

PCB

HIGH SPEED

Fiber Optics

Contacts
Connectors
Cables

EMI Filter
Transient

26482
Matrix 2

83723 III
Matrix | Pyle

26500
Pyle

5015
Crimp Rear
Release
Matrix

22992
Class 1

Back-Shell

Options
Others

- 38999
- III
- HD
- Dualok
- II
- I
- SJT
- Accessories
- Aquacon
- Herm/Seal
- PCB



ARINC 801 Inserts within Tri-Start Connectors

Amphenol® ARINC 801 Connector:

Amphenol now offers a multi-channel circular connector that complies with the ARINC specification. This connector, available in straight plug and wall mount receptacle, uses the ARINC 801 ceramic termini described on page 203.

The features of the ARINC 801 connector include:

- Uses precision ARINC 801 fiber optic termini (typical multi-mode insertion loss is less than 0.15 dB).
- Removable alignment sleeve insert for easy cleaning of fiber optic termini.
- Three stages of alignment: shell-to-shell keys, guide pins and ceramic alignment sleeves.
- Includes all of the features of standard D38999 straight plug and wall mount receptacle shells (refer to page 197 for shell dimensions).
 - Scoop-proof design
 - Option for alternate keys and keyways
 - Rear accessory threads
 - Standard insertion/extraction tools (M81969/14-03)

Easy Steps to build a part number... ARINC 801 Connectors

| 1. | 2. | 3. | 4. | 5. | 6. |
|----------------|------------------|--------------|-------------|---------------------------------|-----------------------------------|
| Connector Type | Connector Series | Shell Finish | Shell Style | Shell Size – Insert arrangement | Insert Type & Key/Keyway Position |
| CF | 5A | 4 | 6 | 11-02 | N |

Step 1. Select a Connector Type

| | |
|------------|-------------------------------------|
| CF- | Multi-Channel Fiber Optic Connector |
|------------|-------------------------------------|

Step 2. Select a Shell Series

| | Designates |
|-----------|------------|
| 5A | Aluminum |
| 6A | Composite |

Step 3. Select a Shell Finish

| | Designates |
|----------|--|
| 4 | Electroless Nickel |
| 9 | Olive drab cadmium |
| D | Durmalon™* (Nickel-PTFE) (Aluminum only) |

Step 4. Select a Shell Style

| | Designates |
|----------|---------------------------------|
| 0 | Wall mount receptacle ARINC 801 |
| 6 | Straight plug ARINC 801 |

Step 5. Select a Shell Size – Insert Arrangement

See available insert arrangements for ARINC 801 connectors below.

Step 6. Insert Type & Key/Keyway Position

Insert Type and Keyway Position
P designates pin insert (shell style 0 only)
S designates socket insert (shell style 6 only)

For keyway positioning, choose the alternate rotation suffix from the chart at right.

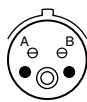
| Alternate Position |
|--------------------|
| Normal |
| A |
| B |
| C |
| D |
| E |

For more information on key/keyway rotation, see the Series III MIL-DTL-38999 section.

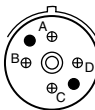
* Durmalon is a trademark of Amphenol Aerospace. For more information on Durmalon go to page 5. Other finishes available; please contact Amphenol Aerospace for more information.

Insert Arrangements

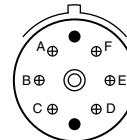
Front face of pin inserts illustrated



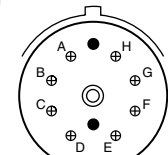
Insert Arrangement 11-02



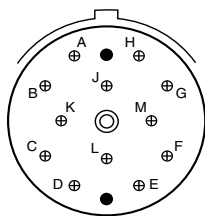
13-04



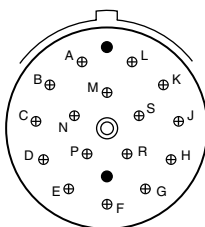
15-06



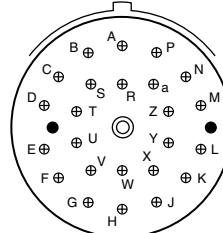
17-08



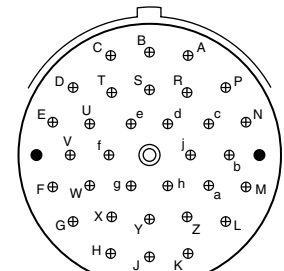
Insert Arrangement 19-12



21-16



23-24



25-32

⊕ Contact Location ⊙ Jack Screw (Plug only) ● Guide Pin/Hole Location

- EMI Filter Transient
- 26482 Matrix 2
- 83723 III Matrix | Pyle
- 26500 Pyle
- 5015 Crimp Rear Release Matrix
- 22992 Class I
- Back-Shells
- Options Others

MT Assembly Kits & Tools

Male and Female Ferrules, for Higher Density

Features/How to Order



MT Ferrule Fiber Optic Termini

Designed for use in MT38999 Connectors

Ordering Information for MT Assembly Kits and Tools

| | |
|--------------------------------------|---------------|
| MT Male Assembly Kit (flat ribbon)** | CF-198136-000 |
| MT Female Assembly (flat ribbon)** | CF-198137-000 |
| MT Kit Assembly Tool | 11-100000-000 |
| MT Contact Removal Tool | CF-008025-000 |

** MT ferrules are not included in the assembly kits

Amphenol® MT (Multi-terminal) Features:

- Designed for use in Amphenol® MT38999 circular connectors and also for rectangular products: printed circuit board interconnects, LRM, VME64 and VITA46 interconnects.
- Male and female ferrules available in either multi-mode or single mode designs.
- Very high density can be achieved in cylindrical connectors:
- Up to 24 fiber channels in a size 11 composite shell
- Up to 96 fiber channels in a size 21 composite shell
- Amphenol supplies MT termini assemblies in kits, minus the MT ferrule. MT ferrules that meet the IEC1754-5 specification are recommended for use.
- Assembly tool 11-100000-000 is recommended for MT termini assembly into connectors; MT contact removal tool CF-008025-000 is also available.

Amphenol® MT Termini Assembly Kit (MT female socket clamp shown)



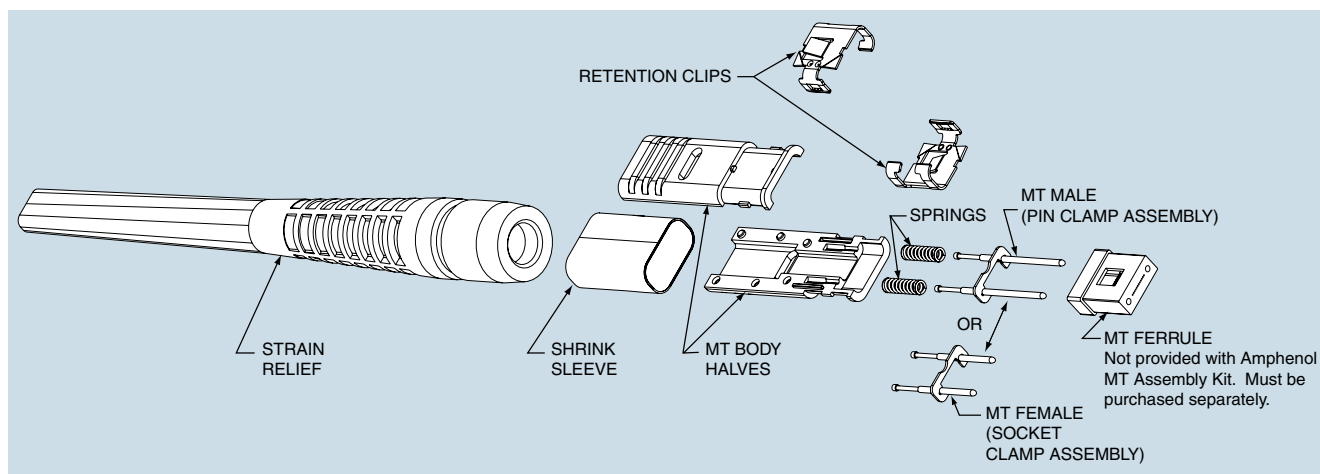
MT Removal Tool

Order Number: CF-008025-000



MT Assembly Tool

Order Number: 11-100000-000



For information on MT fiber optics in Amphenol rectangular interconnects please contact an Amphenol Sales Person or consult Amphenol Aerospace by calling 1-800-678-0141.

38999

III

HD

Dualok

II

I

SJT

Accessories

Aquacon

Herm/Seal

PCB

HIGH SPEED

Fiber Optics

Contacts

Connectors

Cables

EMI Filter
Transient

26482
Matrix 2

83723 III
Matrix | Pyle

26500
Pyle

5015
Crimp Rear Release
Matrix

22992
Class 1

Back-Shell

Options
Others

38999
III
HD
Dualok
II
I
SJT
Accessories
Aquacon
Herm/Seal
PCB

HIGH SPEED
Fiber Optics
Contacts
Connectors
Cables

EMI Filter
Transient

26482
Matrix 2

83723 III
Matrix | Pyle

26500
Pyle

5015
Crimp Rear Release
Matrix

22992
Class I

Back-
Shells

Options
Others

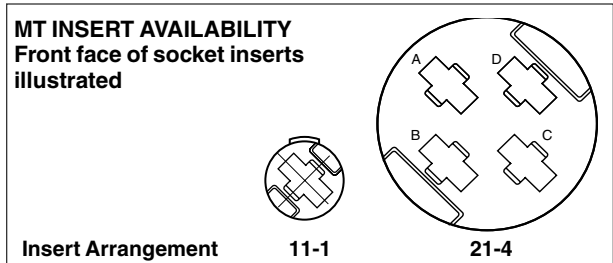
Amphenol offers a multi-channel circular connector with high density MT fiber optics. This connector uses MT ferrules described on page 205.

The features of the MT cylindrical connector include:

- High fiber density in a relatively small circular connector package with all the advantages of the MIL-DTL-38999 Series III connector
- Three levels of alignment provide for precision fiber to fiber interface:
- Shell-to-shell with keying to allow for alternate positions
- Insert plug to insert receptacle
- MT contact guide pins
- Ferrules are available in either 12-fiber or 24-fiber versions, in multi-mode PC, single mode PC, and single mode APC configurations
- 2 arrangements are available as shown at right, shell size 11 with one ferrule, and shell size 21 with four ferrules



MT38999 Connectors



Amphenol® MT38999 connectors for use with MT ferrule termini can be ordered by coded part number. Ordering procedure is illustrated by part number CF-699011-01P as shown below:

Easy Steps to build a part number... CF, Tri-Start Series III with Fiber Optics

| 1. Connector Type | 2. Connector Class | 3. Terminus Style | 4. Shell Finish | 5. Shell Style | 6. Shell Size- Insert Arrangement | 7. Insert Type & Key/Keyway Position |
|-------------------|--------------------|-------------------|-----------------|----------------|-----------------------------------|--------------------------------------|
| CF- | 6 | 9 | 9 | 0 | 11- 01 | P |

Step 1. Select a Connector Type

| | |
|-----|-------------------------------------|
| CF- | Multi-Channel Fiber Optic Connector |
|-----|-------------------------------------|

Step 2. Select a Connector Class

| | Designates |
|---|-----------------|
| 5 | Aluminum |
| 6 | Composite |
| 8 | Stainless Steel |

Step 3. Terminus Style

| | |
|---|---------------------------------|
| 9 | MT terminus - Flat ribbon cable |
|---|---------------------------------|

Step 4. Select a Shell Finish

| | Designates |
|---|--|
| 4 | Electroless nickel |
| 6 | Corrosion resistant stainless steel (connector class 8 only) |
| 9 | Olive drab cadmium |
| D | Durmalon™ * (Nickel-PTFE) |

* Durmalon is a trademark of Amphenol Aerospace. For more information on Durmalon go to page 5. Other finishes available; please contact Amphenol Aerospace for more information.

Step 5. Select a Shell Style

| | Designates |
|---|-----------------------|
| 0 | Wall mount receptacle |
| 1 | Line receptacle |
| 6 | Straight plug |
| 7 | Jam nut receptacle |

Step 6. Select a Shell Size - Insert Arrangement

| Shell Size - Insert Arrg. | Designates |
|---------------------------|-------------------------------|
| 11-01 | Shell size 11 - Single cavity |
| 21-04 | Shell size 21 - Four Cavity |

Step 7. Insert Type & Key/Keyway Position

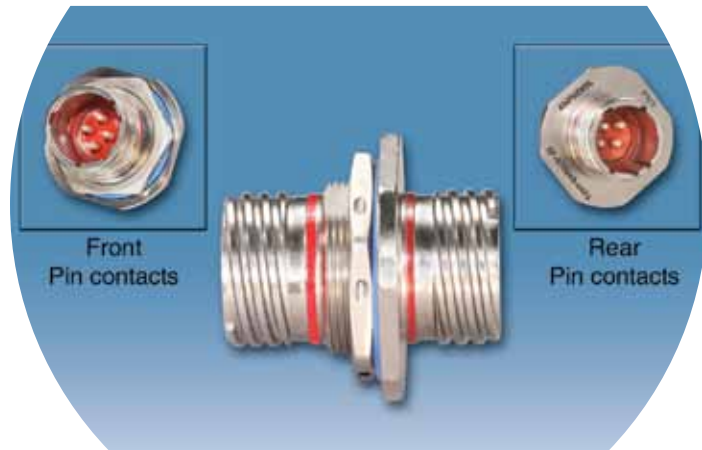
Insert Type and Keyway Position
P designates pin insert
S designates socket insert
For keyway positioning, choose the alternate rotation suffix from the chart below.

ALTERNATE POSITION SUFFIX

| Alternate Position | Suffix Letter | |
|--------------------|---------------|---------|
| | Pins | Sockets |
| Normal | P | S |
| A | G | H |
| B | I | J |
| C | K | L |
| D | M | N |
| E | R | T |

Fiber Optic Bulkhead Feed-Through With Size 16 Pin Termini on Both Ends

Features/How to Order



**Fiber Optic Bulkhead Feed-Through Connector
(Special size 16 Pin-Pin Termini Configuration)**

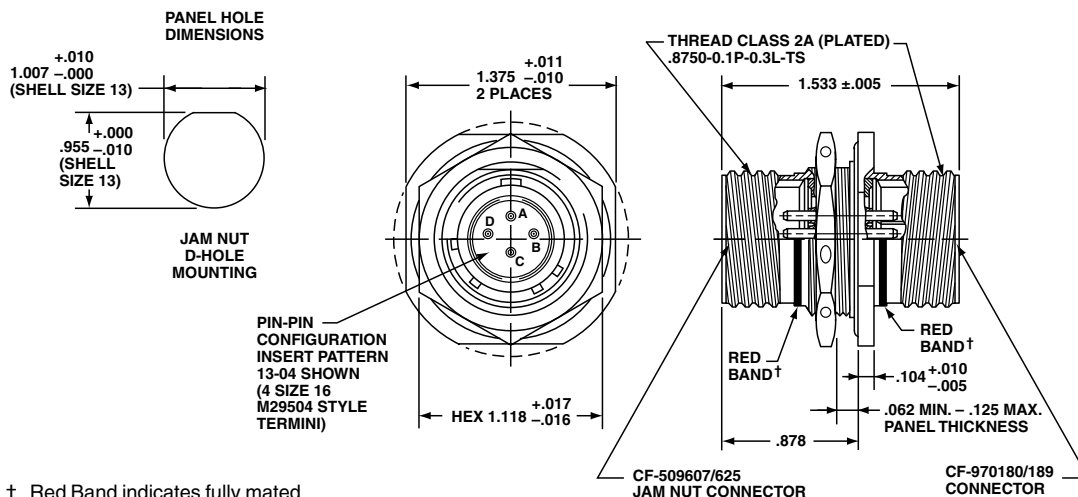
Amphenol extends its line of harsh environment fiber optic components with a multi-channel fiber optic feed-through. This feed-through is designed to perform in demanding aerospace environments and any other applications where a high degree of environmental sealing is required between bulkheads.

Fiber Optic Bulkhead Feed-Through Features include:

- Fully compatible with D38999 and Amphenol® CF-series fiber optic connectors with size 16 fiber optic contacts (Consult Amphenol Aerospace for mating information).
- Jam nut style for easy installation
- Available finishes include electroless nickel and olive drab cadmium
- Typical fiber sizes include 50/125 and 62.5/125 multi-mode fiber (Consult Amphenol Aerospace for other fiber types and sizes).

Fiber Optic Bulkhead Feed-Through Connector

Jam Nut Receptacle CF-97024x/CF-97019X



† Red Band indicates fully mated
All dimensions for reference only.

Ordering Information for Fiber Optic Bulkhead Feed-Through Connectors

| Bulkhead Feed-through Shell Style | Amphenol Part Number | |
|-----------------------------------|----------------------|----------------|
| | Finish | |
| | Electroless Nickel | OD Cadmium |
| Jam Nut Receptacle | CF-97024X-YYPA | CF-97019X-YYPA |

| Shell Size | Insert Arrangements | | | | | | | |
|---------------------|---------------------|----|----|----|----|----|----|----|
| | 11 | 13 | 15 | 17 | 19 | 21 | 23 | 25 |
| 'X' in part number | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 |
| 'YY' in part number | 02 | 04 | 05 | 08 | 11 | 16 | 21 | 29 |

PA suffix - indicates pin with Normal rotation on jam nut end and 'A' rotation (mirror image) on opposite end.

38999

- III
- HD
- Dualok
- II
- I
- SJT
- Accessories
- Aquacon
- Herm/Seal
- PCB

- HIGH SPEED**
- Fiber Optics
- Contacts
- Connectors
- Cables

EMI Filter
Transient

26482
Matrix 2

83723 III
Matrix | Pyle

26500
Pyle

5015
Cramp Rear
Release
Matrix

22992
Class 1

Back-
Shells

Options
Others

How to Order

38999

- III
- HD
- Dualok
- II
- I
- SJT
- Accessories
- Aquacon
- Herm/Seal
- PCB

ORDERING INFORMATION
Protection Caps

Sealing Plugs

| Shell Size | Plastic Protection Caps | | MS Metal Protection Caps | | | Sealing Plugs for Unused Contact Cavities | | |
|------------|-------------------------|-----------------|--------------------------|----------------|--------------------|---|----------------|--------------|
| | For Plugs | For Receptacles | MS Shell Size Code | For MS Plugs | For MS Receptacles | Contact Size | Commercial No. | Military No. |
| 9 | 10-70506-14 | 10-70500-10 | A | D38999/32W9X* | D38999/33W9X* | 8 (Coax) | 10-482099-8 | N/A |
| 11 | 10-70506-16 | 10-70500-12 | B | D38999/32W11X* | D38999/33W11X* | 8 (Twinax) | T3-4008-59P | N/A |
| 13 | 10-70500-18 | 10-70500-14 | C | D38999/32W13X* | D38999/33W13X* | 8 (Power) | 10-405996-81 | MS27488-8-1 |
| 15 | 10-70500-20 | 10-70500-16 | D | D38999/32W15X* | D38999/33W15X* | 10 (Power) | 10-576225 | N/A |
| 17 | 10-70500-22 | 10-70500-19 | E | D38999/32W17X* | D38999/33W17X* | 12 | 10-405996-121 | MS27488-12-1 |
| 19 | 10-70500-24 | 10-70500-20 | F | D3899/32W19X* | D38999/33W19X* | 16 | 10-405996-161 | MS27488-16-1 |
| 21 | 10-70524-1 | 10-70500-22 | G | D3999/32W21X* | D38999/33W21X* | 20 | 10-405996-201 | MS27488-20-1 |
| 23 | 10-70506-28 | 10-70500-24 | H | D38999/32W23X* | D38999/33W23X* | 22D | 10-405996-41 | MS27488-4-1 |
| 25 | 10-70500-28 | 10-70524-1 | J | D3899932W25X* | D38999/33W25X* | | | |

* To complete order number, replace X with applicable letter as follows:
R - designates eyelet type
N - designates washer type
MS metal protection caps are supplied with service class W which designates corrosion resistant olive drab cadmium plate aluminum.



Protection Caps



Sealing Plugs

Backshells

Some Backshells can be used without any additional protection while other types are generally used with heat shrink boots or similar protection/strain relief mechanism depending on specific requirements.

Backshells for Military & Aerospace applications are governed by SAE, AS85049 standard and Amphenol Backshells are designed to meet the requirement of this standard. Amphenol offers additional styles and designs and can support you from concept to product realization to satisfy your unique specifications. Please see the Backshell section in this catalog for more information:

Amphenol offers the widest range of accessories for circular connectors conforming to most Military (MIL) specifications.

Please see the backshell section in this catalog or visit www.backshellworld.com for more information.



- **Non-Environmental Backshell**
- **Environmental Backshell**
- **Non-Environmental EMI/RFI Backshell**
- **Environmental EMI/RFI Backshell**
- **Shrink Boot Adapter**
- **Crimp Ring Adapter**
- **Band Lock Adapter**
- **SQ Adapter**
- **Quick Clamp**
- **Strain Relief Clamp**
- **Grommet Nut**
- **Lamp Thread Adapter**

EMI Filter
Transient

26482
Matrix 2

83723 III
Matrix | Pyle

26500
Pyle

5015
Crimp Rear
Release
Matrix

22992
Class I

Back-
Shells

Options
Others

**HIGH
SPEED**

Fiber
Optics

Contacts
Connectors
Cables

Application Tools for Multi-mode Termini

For Use in Multi-Channel Circular Connectors

How to Order

The following data includes information pertaining to the application tools which have been established for polishing, inserting and removing multi-mode fiber optic termini within multi-channel connectors. Insertion and removal tools are common to MIL-DTL-38999 size 16 and size 20 tools. Installation instructions L-1262 for multi-mode size 16 and L-2103 for multi-mode size 20 provide proper installation and polishing procedures for these termini. These are available on-line at www.amphenol-aerospace.com, under service instructions. Termination kits, as shown at right, are available for each Amphenol connector family. The kit includes the carrying case, heat gun, crimping and stripping tools and microscope with adapters.



Termination Kit



Plastic Insertion/
Removal Tool
for Size 16
Multi-mode Termini

38999

- III
- HD
- Dualok
- II
- I
- SJT
- Accessories
- Aquacon
- Herm/Seal
- PCB

HIGH
SPEED

Fiber
Optics

Contacts
Connectors
Cables

EMI Filter
Transient

26482
Matrix 2

83723 III
Matrix | Pyle

26500
Pyle

5015
Crmp Rear
Release
Matrix

22992
Class 1

Back-
Shells

Options
Others

ORDERING INFORMATION

Application Tools for Multi-Channel, Multi-mode Fiber Optic Termini

| Contact Size/ Type | Termini Part Number | Hand Polishing Tools* | Machine Polishing Tools | | Termination Kit (Includes necessary field termination equipment) |
|-----------------------|---|--|--|--|--|
| | | | Amphenol/Buehler Fibrmet*** Polishing Tool Part Number | Amphenol/Buehler Fibrscope*** Adaptor Body Part Number | |
| 16 Multi-mode | Socket CF-198035-()*** Pin CF-190036-()*** | 11-12123 or 11-12195 (grooved for wet polishing) | 11-12103 | 11-12104 | CF-8500-1† |
| 20 Multi-mode | Socket CF-198080-()** Pin CF-198081-()** | 11-12153 | N/A | N/A | CF-8500-3†† |

Insertion Tools

| Contact Size/ Type | Plastic Tools (Double ended insertion/removal tool) | | Metal Tools | | | |
|-----------------------|---|------------|----------------|-------------------------------|---|-------|
| | MS Part Number | Color | Angle Type | | Straight Type Commercial Part Number | Color |
| | | | MS Part Number | Commercial Part Number | | |
| 16 Multi-mode | M81969/14-03 | Blue/White | M81969/8-07 | 11-8674-16 11-012197-16††† | 11-8794-16 11-012198-16††† | Blue |
| 20 Multi-mode | M81969/14-10 | Red/Orange | M81969/8-05 | 11-8674-20 | 11-8794-16 | Red |

Removal Tools

| Contact Size/ Type | Plastic Tools (Double ended insertion/ removal tool) | | Metal Tools | | | | |
|-----------------------|--|------------|--|-------------------|---------------------------|--|-------|
| | MS Part Number | Color | For Unwired Contacts Commercial Part Number | Angle Type | | Straight Type Commercial Part Number | Color |
| | | | | MS Part Number | Commercial Part Number | | |
| 16 Multi-mode | M81969/14-03 | Blue/White | 11-10050-10 | M81969/8-08 | 11-8675-16 | 11-8795-16 | White |
| 20 Multi-mode | M81969/14-10 | Red/Orange | 11-10050-9 | M81969/8-06 | 11-8675-20 | 11-8795-20 | White |

FOR APPLICATION TOOLS FOR SINGLE MODE TERMINI, CONSULT AMPHENOL AEROSPACE.

The M81969/8, 11-8675 and 11-8794 metal contact insertion and removal tools will accommodate wires having the maximum outside diameter of .105 for size 16 and .084 for size 20. When wire diameters exceed this, the plastic tools must be used.

* Single Termini Capability

** To complete order number add fiber size; see ordering information on page 188 for size 16 multi-mode, and page 191 for size 20 multi-mode.

*** Fibrmet and Fibrscope are registered trademarks of Buehler Ltd.

† This includes hand polishing tool 11-12123.

†† This includes hand polishing tool 11-12153.

††† Recommended tool for socket termination insertion.

Fiber Optic Custom Cable Assembly Design and Fabrication

Amphenol's cable assembly expertise dates back to the first industry standard fiber optic connector, over 25 years ago. Our depth of understanding of connector and termini design, and the complete control of connector materials, make Amphenol Fiber Optic cable assemblies one of the best in the industry. Amphenol offers a comprehensive line of single mode and multi-mode cable assemblies in a variety of cable configurations. From simplex jumpers to multi-fiber custom assemblies, Amphenol can design and supply all of your cable needs.

High quality polishing processes have been developed to meet and exceed industry standard specifications for insertion loss, return loss and end-face geometry. All assemblies are designed to intermateability standards for optical and physical performance criteria.

Amphenol can assemble, polish and test many harsh environment and commercial grade connectors including:

- MIL-PRF-29504/4, /5, /14, /15 Style
- HD20
- MTC
- ARINC 801
- Commercial grade connectors: ST, LC, FC, SC

FIBER OPTIC AVAILABILITY

| CONNECTOR TYPE | DESCRIPTION |
|---------------------------|--|
| MIL-PRF-29504/4, /5 Style | <ul style="list-style-type: none"> • 1.6 mm ferrule • Available in single and multi-mode |
| HD20 | <ul style="list-style-type: none"> • 1mm ferrule • High density termini • Available in multi-mode only |
| MTC | <ul style="list-style-type: none"> • MT ferrules for AAO 38999 connectors • High density fiber ribbon (12 and 24 fibers) • Available in single and multi-mode |
| ARINC 801 | <ul style="list-style-type: none"> • 1.25mm ferrule • Genderless termini • Pull-proof mechanism • Available in single and multi-mode |
| ST | <ul style="list-style-type: none"> • 2.5mm ferrule • Bayonet mechanism • Available in simplex only |
| FC | <ul style="list-style-type: none"> • 2.5mm ferrule • Screw-on mechanism • Available in single and multi-mode |
| LC | <ul style="list-style-type: none"> • 1.25mm ferrule • Push and latch mechanism • Available in single and multi-mode |
| SC | <ul style="list-style-type: none"> • 2.5mm ferrule • Snap-in mechanism • Available in single and multi-mode |
| MT-RJ | <ul style="list-style-type: none"> • Two-fiber ferrule • Duplex and multi-mode only |
| MTP and MPO | <ul style="list-style-type: none"> • MT (Mechanical Transfer) ferrules • Ribbon fiber (12 and 24 fibers) |
| SMA 905 and SMA 906 | <ul style="list-style-type: none"> • Threaded connections • Simplex only • Multi-mode only |



D38999 Fiber Optic Connectors and Cables



ARINC 801 Connectors and Cables



Explosion Proof Amphe-EX™ Connectors and Cables

Connector and cable materials are extensively inspected prior to assembly. Every completed cable assembly receives 100% inspection for both insertion loss and visual defects. Interferometers are used for accurate end-face geometry testing.

You specify the optical and mechanical requirements of the cable assembly and Amphenol's fiber optic application engineers will develop an "end-to-end" interconnect solution. Design creativity, experience and an understanding of harsh environments will ensure a functional and manufacturable design. See the next page for a guide to selecting and specifying a fiber optic cable assembly.

38999

- III
- HD
- Dualok
- II
- I
- SJT
- Accessories
- Aquacon
- Herm/Seal
- PCB

HIGH SPEED

Fiber Optics

- Contacts
- Connectors
- Cables

EMI Filter Transient

26482 Matrix 2

83723 III Matrix | Pyle

26500 Pyle

5015 Crimp Rear Release Matrix

22992 Class 1

Back-Shells

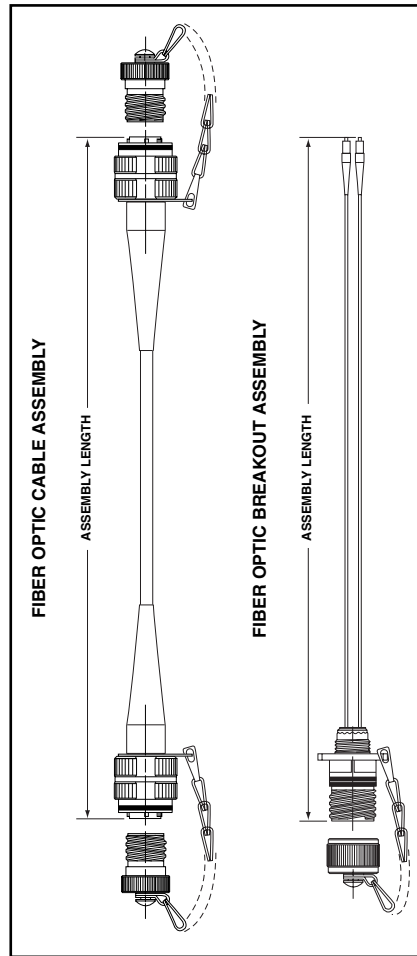
Options Others

The following criteria should be considered when specifying a fiber optic cable assembly. You may copy this page and fax it to Amphenol Aerospace at 607-563-5157, attention Fiber Optic Design Engineering.
Date _____

Amphenol Salesperson _____

CUSTOMER INFORMATION

Customer Company Name _____
 Engineer Name _____
 Program _____
 Forecast _____



COMPONENTS

TERMINI

MIL-PREF-29504 Style

Pin _____

Socket _____

ARINC 801

MTC

HD20

Other _____

CONNECTORS - CYLINDRICAL

MIL-DTL-38999

ARINC 801

MTC

CONNECTORS - MATERIAL/FINISH

Aluminum/OD Cad

Aluminum/Electroless Nickel

Aluminum/Duralon

Composite/Electroless Nickel

CONNECTORS - RECTANGULAR

Low-mating force, PCB

LRM

Rack and Panel

VME64X

VITA-46

ACCESSORIES

Backshells/Strain Reliefs

Straight

90°

Sealing Plugs

Protection Caps

Plastic

Metal with lanyard

OPERATIONAL CRITERIA

OPTICAL WAVELENGTH

850

1300

1310

1550

Other _____

FIBER CORE SIZE

9/125 Single Mode

50/125 Multi-mode

62.5/125 Multi-mode

100/140 Multi-mode

Other _____

PERFORMANCE

Insertion Loss _____

Return Loss _____

CABLE ASSEMBLY

Length _____

Tolerance _____

CABLE TYPE

Field Tactical

LSZH

Breakout

Distribution

Avionics

Other _____

ENVIRONMENTAL CRITERIA

Length _____

Tolerance _____

Low Temperature _____

Durability _____

Salt Spray _____

Mechanical Shock _____

38999

III

HD

Dualok

II

I

SJT

Accessories

Aquacon

Herm/Seal

PCB

HIGH SPEED

Fiber Optics

Contacts

Connectors

Cables

EMI Filter

Transient

26482

Matrix 2

83723 III

Matrix | Pyle

26500

Pyle

5015

Crimp Rear Release Matrix

22992

Class 1

Backshells

Options

Others

X-ON Electronics

Largest Supplier of Electrical and Electronic Components

Click to view similar products for [Fibre Optic Cable Assemblies](#) category:

Click to view products by [Amphenol](#) manufacturer:

Other Similar products are found below :

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[1754898-1](#) [21055-6](#) [FXBSCSCE2LM002](#) [3-21053-2](#) [MLB 200/1 V BLACK](#) [MLB 2001 V RED](#) [MLB 2001 V YELLOW](#) [MLB 501 V](#)
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[2123909-4](#) [2123909-8](#) [106273-0629](#) [2125046-1](#) [2821236-3](#) [2821310-2](#) [2821310-3](#) [2821313-4](#) [FX2ERLNLNSNM0.5](#) [CF-980062-074](#) [CF-](#)
[901200-394](#) [CF-980062-073](#) [CF-980062-071](#) [CF-980062-075](#) [CF-980062-072](#) [17-300310-100](#) [2821236-2](#) [2821313-1](#) [G-FC-FC-S-002.0-DX-](#)
[A-18-Y](#) [G-E2A-E2A-S-003.0-SX-A-18-Y](#) [956-322-502214](#) [FA04474](#) [1111540](#) [1111843](#)