

# Coaxial Contacts

## General Description

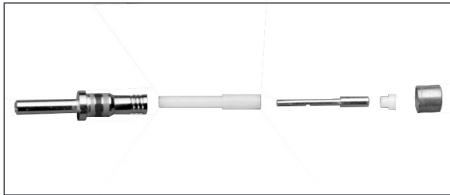
### AMPHENOL COAXIAL CONTACTS

Offer several advantages for reliable interconnection and continued performance:

- Large crimping area assures low contact resistance and high tensile strength
- Back insulator positively captivates inner contact against axial loads
- Front insulator provides closed entry for socket inner contact
- Recessed inner contact is protected
- Outer contact has rugged wall section for durability



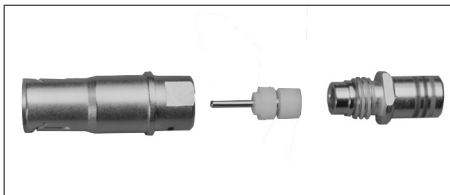
MIL-DTL-38999 LJT-R, JT-R, TV-R,  
SJT-R MS Type, Coax Size 12 Socket  
Assembled Contact



MIL-DTL-38999 LJT-R, JT-R, TV-R,  
SJT-R MS Type, Coax Size 16 Pin  
Unassembled Contact



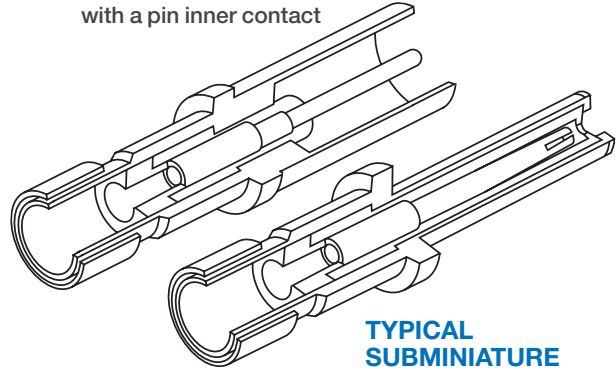
MIL-DTL-38999 LJT-R, JT-R, TV-R,  
SJT-R MS Type, Coax Size 8 Pin  
Assembled Contact



MIL-DTL-38999 LJT-R, JT-R, TV-R,  
SJT-R MS Type, Coax Size 8 Socket  
Unassembled Contact

### TYPICAL SUBMINIATURE COAX SOCKET CONTACT

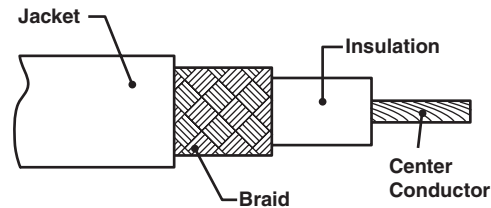
has socket outer contact  
with a pin inner contact



### TYPICAL SUBMINIATURE COAX PIN CONTACT

has pin outer contact  
with a socket inner  
contact

### CABLE ILLUSTRATION - COAX CONTACT



### COAX CONTACTS ARE GOLD PLATED, CRIMP TERMINATION

Finish of mating contact parts: supplied with 0.000050 min. gold over nickel on mating parts. Other finishes are available; consult Amphenol for further information.

### COAX SIZE 12 & 16 CONTACT PERFORMANCE:

#### Typical VSWR:

- 1.5:1 maximum up to 700 MHz and 500 MHz respectively, for properly cabled size 12 and 16 coaxial contacts in the M38999 Series I, II and III

#### Insulation Resistance:

- 5,000 megohms minimum @ 25°C

#### Dielectric Withstanding Voltage:

- Size 12: 1,000 VAC Rms @ sea level, 250 VAC Rms @ 50,000 ft.
- Size 16: 800 VAC Rms @ sea level, 250 VAC Rms @ 50,000 ft.

#### Contact Resistance:

- See MIL-C-39029/27, /28, /75, /76, /77, /78

### COAX SIZE 8 CONTACT PERFORMANCE:

#### Typical VSWR when terminated to specified 50 ohm cable:

- 1.5:1 maximum up to 3 GHz (excluding 21-033101/2-27)
- Insulation Resistance: 5,000 megohms minimum @ 25°C

#### Dielectric Withstanding Voltage:

- 1,300 VAC Rms @ sea level, 250 VAC Rms @ 50,000 ft.

#### Contact Resistance:

- See MIL-C-39029/59, /60

JT-R Series, MIL-DTL-38999 Series II, SAE AS39029 (27, 28, 76, 78)

COAX CONTACTS FOR USE IN JT-R CONNECTORS					
Contact Size	Cable	Installation Tools		Contact Part Number (Termination Instruction Sheet)**	
		Insertion	Removal	Pin	Socket
16	RG-178B/U	M81969/8-07 or M81969/ 14-03 or Amphenol 11-8674-16 11-8794-16 or MS27495A16 or MS27534-16	M81969/8-08 or M81969/14-03 or Amphenol 11-8675-16 11-8795-16 or MS27495R16 or MS27534-16	21-033122-564 (M39029/76-425) (L-2035-AG)	21-033121-564 (M39029/78-433) (L-2035-AH)
	RG-196A/U			21-033122-562† (L-2035-AN)	21-033121-562† (L-2035-AP)
	26723/A955KK1				
	30-02024				
	30-02033				
	Haveg 30-00761				
	Tensolite 24713/A955KK1				
	Haveg 61-02051	21-033122-561† (L-2035-AK)	21-033121-561† (L-2035-AL)		
	AA3248	M81969/8-09 or M81969/ 14-04 or Amphenol 11-8674-12 11-8794-12 or MS27495A12 or MS27534-12	M81969/8-10 or M81969/14-04 or Amphenol 11-8675-12 11-8795-12 or MS27495R12 or MS27534-12	21-033122-563 (M39029/76-424) (L-2035-AD)	21-033121-563 (M39029/78-432) (L-2035-AE)
	Haveg 8100207				
	Raychem 7528H1424				
	RG-161/U				
	RG-174A/U				
	RG-179B/U				
RG-187A/U					
RG-188A/U					
RG-316/U					
Teledyne 11299					
12	Times (HS-179)	M81969/8-09 or M81969/ 14-04 or Amphenol 11-8674-12 11-8794-12 or MS27495A12 or MS27534-12	M81969/8-10 or M81969/14-04 or Amphenol 11-8675-12 11-8795-12 or MS27495R12 or MS27534-12	21-033122-546 (M39029/28-211) (L-2035-F)	21-033121-546 (M39029/27-210) (L-2035-G)
	Haveg 8100207				
	Raychem 7528H1424				
	RG-161/U				
	RG-174A/U				
	RG-179B/U				
	RG-187A/U				
	RG-188A/U				
	RG-316/U				
	Teledyne 11299				
	Times (HS-179)	21-033122-541 (M39029/28-409) (L-2035-C)	21-033121-541 (M39029/27-402) (L-2035-E)		
	Raychem 9528A1318				
	RG-180B/U,				
	RG-195A/U				
Raychem 5022E5111	21-033122-543† (L-2035-M)	21-033121-543† (L-2035-N)			
Raychem 9530A5314	21-033122-544 (L-2035-R)	21-033121-544 (L-2035-S)			
Raychem 9527A1318	21-033122-545 (L-2035-U)	21-033121-545 (L-2035-V)			
Filotex 124962	21-033122-547† (L-2035-X)	21-033121-547† (L-2035-Y)			
Gore GWN1159A					

### MIL-DTL-38999 CONTACT DATA

All contacts mate with other contacts in this series which have the same inner and outer contact diameters.

Finish of mating contact parts: Contact part numbers shown in the chart above are supplied with 0.000050 min. gold (Knoop hardness 130-200) over nickel on mating parts. Other finishes are available; consult Amphenol.

NOTE: SAE AS39029 supersedes MIL-C-39029

\*\* Termination instructions are packaged with each contact and can be found on-line at: [www.amphenol-aerospace.com/serviceinstructions.asp](http://www.amphenol-aerospace.com/serviceinstructions.asp)

† Consult Amphenol Aerospace for current release of this contact or instruction sheet if applicable.

Daniels crimping tools are available from:  
Daniels Mfg. Corp. 6103 Anno Ave., Orlando FL 32809

# Coaxial Contacts

## Contact Part Number Guide by Cable

LJT-R, MIL-DTL-38999 Series I; TV-R, MIL-DTL-38999 Series III; Amphe-Lite and SJT-R Series, SAE AS39029 (28, 59, 60, 75, 76, 77)

### COAX CONTACTS FOR USE IN LJTR, TV-R, AMPHE-LITE AND SJT-R CONNECTORS

Contact Size	Cable	Installation Tools		Contact Part Number (Termination Instruction Sheet)**	
		Insertion	Removal	Pin	Socket
16	RG-178B/U, RG-196A/U			21-033122-564 (M39029/76-425) (L-2035-AG)	21-033123-564 (M39029/77-429) (L-2035-AJ)
	30-02033				
	30-02024				
	Haveg 30-00761			21-033122-562† (L-2035-AN)	21-033123-562† (L-2035-AR)†
	Tensolite 26723/A955KK1	M81969/8-07	M81969/8-08		
	Tensolite 24713/A955KK1	or	or		
	Haveg 61-02051	M81969/14-03	M81969/14-03	21-033122-561† (L-2035-AK)†	21-033123-561† (L-2035-AM) †
	Haveg 8100207	or	or		
	Raychem 7528H1424 AA3248	Amphenol 11-8674-16	Amphenol 11-8675-16		
	RG-161/U	11-8794-16	11-8795-16		
	RG-174A/U	or	or		
	RG-179B/U	MS27495A16	MS27495R16	21-033122-563 (M39029/76-424) (L-2035-AD)	21-033123-563 (M39029/77-428) (L-2035-AF)
	RG-187A/U	or	or		
	RG-188A/U	MS27534-16	MS27534-16		
RG-316/U					
Teledyne 11299					
Times (HS-179)					
12	Haveg 8100207				
	Raychem 7528H1424 AA3248				
	RG-161/U				
	RG-174A/U				
	RG-179B/U			21-033122-546 (M39029/28-211) (L-2035-F)	21-033123-546 (M39029/75-416) (L-2035-H)
	RG-187A/U	M81969/8-09	M81969/8-10		
	RG-188A/U	or	or		
	RG-316/U	M81969/14-04	M81969/14-04		
	Teledyne 11299	or	or		
	Times (HS-179)	Amphenol 11-8674-12	Amphenol 11-8675-12		
	Belden 1865A	11-8794-12	11-8795-12		
	Raychem 9528A1318	or	or		
	RG-180B/U	MS27495A12	MS27495R12	21-033122-541 (M39029/28-409) (L-2035-C)	21-033123-541 (M39029/75-417) (L-2035-D)
	RG-195A/U	or	or		
Raychem 5022E5111	MS27534-12	MS27534-12	21-033122-543† (L-2035-M) †	21-033123-543† (L-2035-P)	
Raychem 9530A5314			21-033122-544† (L-2035R)	21-033123-544† (L-2035-T) †	

NOTE: SAE AS39029 supersedes MIL-C-39029

CRIMPING TOOLS: Italicized letters in parenthesis that follow positioner part numbers indicate applicable die closure. Commercial equivalents with the same die closure dimension may be used.

CHART CONTINUES ON NEXT PAGE

† Consult Amphenol Aerospace for current release of this contact or instruction sheet if applicable.

†† When inner contact is installed by crimping only, 11-10134 Expander Tool Kit must be used to assemble rear insulator over contact.

\*\* Termination instructions are packaged with each contact and can be found on-line at: [www.amphenol-aerospace.com/serviceinstructions.asp](http://www.amphenol-aerospace.com/serviceinstructions.asp)

LJT-R, MIL-DTL-38999 Series I; TV-R, MIL-DTL-38999 Series III; Amphe-Lite and SJT-R Series, SAE AS39029 (28, 59, 60, 75, 76, 77)

COAX CONTACTS FOR USE IN LJ-T-R, TV-R, AMPHE-LITE AND SJT-R CONNECTORS					
Contact Size	Cable	Installation Tools		Contact Part Number (Termination Instruction Sheet)**	
		Insertion	Removal	Pin	Socket
12	Raychem 9527A1318	M81969/8-09 or M81969/14-04	M81969/8-10 or M81969/14-04	21-033122-545† (L-2035-U)†	21-033123-545† (L-2035-W)
	Raychem 9527A1314	Amphenol 11-8674-12	Amphenol 11-8675-12	21-033122-585 (L-2035-GG)	21-033123-585 (L-2035-GH)
	Gore GWN1159A	11-8794-12	11-8795-12	21-033122-547 (L-2035-X) †	21-033123-547 (L-2035-Z) †
	Nexans RG179-DT	or MS27495A12	or MS27495R12		
	M/A-Com 5M2869-001	or MS27534-12	or MS27534-12	21-033122-589 (L-2035-GR)	21-033123-589 (L-2035-GT)
8	Haveg 8100207	Hand inserted	11-9170 or MS	21-033102-023† (L-1107-C)	21-033101-023† (L-1107-G)
	Multi Flex 86				
	RG-161/U				
	RG-174A/U				
	RG-179B/U				
	RG-187A/U				
	RG-188A/U				
	RG-316/U			21-033102-024* (L-1107-D)	21-033101-024* (L-1107-H)
	Teledyne 11299				
	T-Flex 405				
	Times (HS-179) AA3248				
	RG-142B/U				
	RG-223/U				
SF-142 (solder inner conductor)					

NOTE: SAE AS39029 supersedes MIL-C-39029

NOTE: Contacts can be ordered by part numbers given in chart

CRIMPING TOOLS: Italicized letters in parenthesis that follow positioner part numbers indicate applicable die closure. Commercial equivalents with the same die closure dimension may be used.

† Consult Amphenol Aerospace for current release of this contact or instruction sheet if applicable

\* When inner contact is installed by crimping only. 11-10134 Expander Tool Kit must be used to assemble rear insulator over contact.

\*\* Termination instructions are packaged with each contact and can be found on-line at: [www.amphenol-aerospace.com/serviceinstructions.asp](http://www.amphenol-aerospace.com/serviceinstructions.asp)

# Coaxial Contacts

## Contact Part Number Guide by Cable

LJT-R, MIL-DTL-38999 Series I; TV-R, MIL-DTL-38999 Series III; Amphe-Lite and SJT-R Series, SAE AS39029 (28, 59, 60, 75, 76, 77)

### COAX CONTACTS FOR USE IN LJT-R, TV-R, AMPHE-LITE AND SJT-R CONNECTORS, CONT.

Contact Size	Cable	Installation Tools		Contact Part Number (Termination Instruction Sheet)**	
		Insertion	Removal	Pin	Socket
8	Haveg 51-03111	Hand inserted	11-9170 or MS	21-033102-022 (L-1107-B)	21-033101-022 (L-1107-F)
	Tensolite 28895/2X1				
	RG-180B/U			21-033102-021 (M39029/60-367 Supersedes MS27536) (L-1107-A)	21-033101-021 (M39029/59-366 Supersedes MS27535) (L-1107-E)
	RG-195A/U				
	Raychem 9528A1318				
	RD-316 Double Shield (M17/152-00001)				
	Filotex 124962			21-033102-025 (L-1107-J)	21-033101-025 (L-1107-N)
	Raychem 7524D5111-9 (triax cable - contact will terminate inner coax portion only)			21-033102-026 (L-1107-M)	21-033101-026 (L-1107-M)
	ECS3C058A				
	ECS352001			21-033102-027 (L-1286-B)	21-033101-027 (L-1293-B)
	ECS432101				
	RG-400				
	M17/028-RG-058				
	RG303			21-033102-029 (L-1107-AA)	21-033101-029 (L-1107-Y)†
	RG-58 (M17/155-00001)				
	Times LMR-195-UF				
	5021D1331-0			21-033102-036 (L-1107-P)	21-033101-036† (L-1107-Q)
	5M2869-001				
	BMS13-65			21-033102-037 (L-1107-V)	21-033101-037 (L-1107-W)
	ESC432101				
	5022A1311-0			21-033102-039 (L-1107-AC)	21-033101-036† (L-1107-AB)
	FA-19X			21-033652-001 (L-2091-A)	21-033653-001 (L-2091-B)
	HP-160				
	Multi Flex 141				
	Raychem 7524A1311			21-033102-041 (L-1107-AG)	21-033101-041 (L-1107-AF)
	T Flex-402				
	Utiflex UFB142G				
	Antenna x ANT-20014			21-033102-046	21-033101-046
Times AA-11209 (PT-180)	21-033102-047	21-033101-047			
EN4604-10	21-033102-048	21-033101-048			

NOTE: SAE AS39029 supersedes MIL-C-39029

NOTE: Contacts can be ordered by part numbers given in chart  
CRIMPING TOOLS: Italicized letters in parenthesis that follow positioner part numbers indicate applicable die closure. Commercial equivalents with the same die closure dimension may be used.

† Consult Amphenol Aerospace for current release of this contact or instruction sheet if applicable

\* When inner contact is installed by crimping only. 11-10134 Expander Tool Kit must be used to assemble rear insulator over contact.

\*\* Termination instructions are packaged with each contact and can be found on-line at: [www.amphenol-aerospace.com/serviceinstructions.asp](http://www.amphenol-aerospace.com/serviceinstructions.asp)

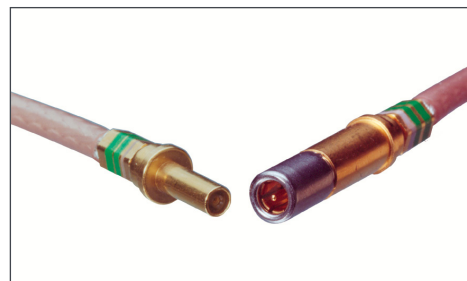
# Matched Impedance Coaxial Contacts for MIL-DTL-38999

## 12 COAXIAL CONTACTS FOR RF/MICROWAVE, HIGH FREQUENCY AND HIGH PERFORMANCE REQUIREMENTS

The matched impedance coax contact is available in size 12. It incorporates a captivated inner contact which “snaps into” the outer contact preventing displacement or pull-back of the inner contact in situations where the cable may be bent.

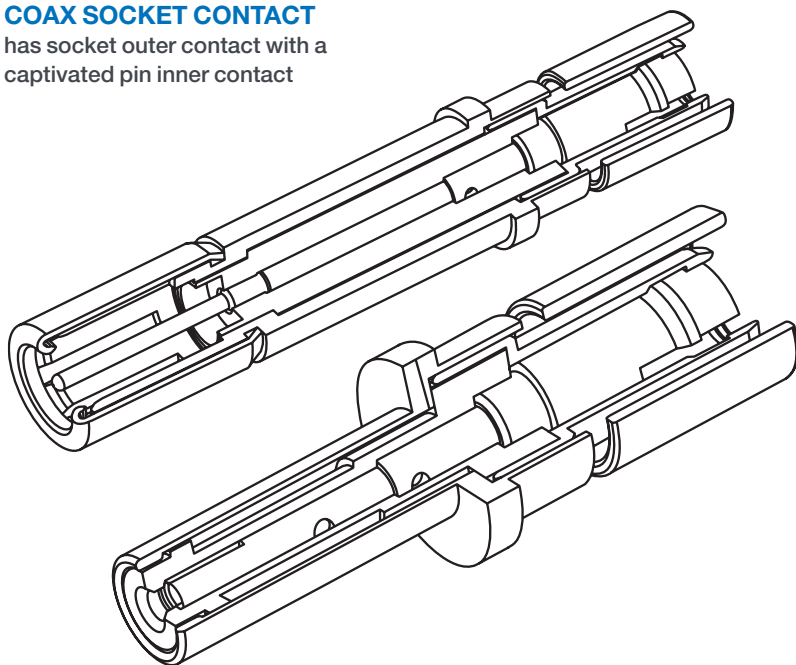
Design features and benefits of the Matched Impedance:

- For use in 90 degree angle or bent cable applications
- Provides 50 Ohm and 75 Ohm matched impedance resulting in low VSWR and low insertion loss
- Frequency range for a mated pair extends to 3 GHz and beyond, higher than other coaxial contacts previously offered
- Ideally suited for D38999 high performance and MIL-STD-1760 high band coaxial contact requirements



### TYPICAL MATCHED IMPEDANCE COAX SOCKET CONTACT

has socket outer contact with a captivated pin inner contact



### TYPICAL MATCHED IMPEDANCE COAX PIN CONTACT

has pin outer contact with a captivated socket inner contact

### MATCHED IMPEDANCE COAX CONTACT PERFORMANCE

#### Electrical Specifications

##### Contact

**Impedance:** 50 Ohms nominal

##### Frequency Range:

0–3 GHz Operable at higher frequencies depending on cable selection.

Consult Amphenol for details.

##### Dielectric withstanding Voltage (for a mated pair):

- At sea level = 1000 VRMS
- At 50,000 ft. = 250 VRMS

##### Insulation

**Resistance:** 5 gigaohms min. @ 25°C

**VSWR:** 1.20 + .04F (F in GHz) max. up to 3 GHz

##### Insertion Loss:

- .11  $\sqrt{f}$  GHz dB max.
- Size 12 75 Ohm cable to cable contacts limited to 2.1 GHz max
- Size 12 75 Ohm cable to PCB Pin limited to 3 GHz max
- Size 8 75 Ohm cable to cable contacts or cable to PCB limited to 3 GHz max

#### ENVIRONMENTAL SPECIFICATIONS:

##### Thermal

**limits:** –65°C to 175°C

#### MECHANICAL SPECIFICATIONS:

**Mating:** Slide-on

**Mounting:** Conforms to M39029/102 & /103 envelope dimensions (Size 12)

# Matched Impedance Coaxial Contacts

for MIL-DTL-38999

## HIGH PERFORMANCE SIZE 12 AND 8 COAX 50 OR 75 OHM MATCHED MIL-DTL-38999- LJT-R, SERIES I, JT-R, SERIES II, AND TV-R, SERIES III

Impedance (Ohms)	Contact Size	Use with Cable	Comment	Pin (Termination Instruction Sheet)**	Socket (Termination Instruction Sheet)**
50	12	RG316	M39029/102/103	21-033651-011 (L-2092-C)	21-033650-011 (L-2092-C)
		Semflex SM405			
		T-Flex-405			
		RG-316	JT-R, MIL-DTL-38999 Series II	21-033729-011 (L-2092-P)	
		T-Flex-405			
		ET124962	M39029/102/103 Type	21-033651-017 (L-2092-F)	21-033650-017 (L-2092-F)
		Filotex			
		M17/152-00001			
		RD316	JN1104*50C	21-033213-042	21-033214-042 (L-2092-D)
		JN1088WT			
		JN1088WU	JN1104*50C	21-033213-043	21-033214-043
		PAN6422XQ	PAN6841*50C	21-033651-012 (L-2092-E)	21-033650-012
		Gore CXN 3403	M39029/102/103 Type	21-033651-018 (L-2092-K)	21-033650-018 (L-2092-K)
		RG178			
		Gore CXN 3403	JT-R, MIL-DTL-38999 Series II	21-033729-018 (L-2092-K)	21-033729-018 (L-2092-K)
		RG178			
		SFT-316-TR	M39029/102/103 Type	21-033651-022 (L-2092-N)	21-033650-022 (L-2092-N)
		Semflex SW060	M39029/102/103 Type	21-033651-025	21-033650-025
Semflex SW086 (solid inner conductor)	M39029/102/103 Type	21-033651-026	21-033650-026		
75	12	RT179, RG179	21-033651-030 (L-2092-AM)	21-033650-030 21-033729-030 (Series II)	
		PIC V73263			
		S86208	21-033651-041	21-033650-041 21-033729-041 (Series II)	
		VDM230			
75	8	RG-179†	21-033592-001 (L-1107-AP)	21-033591-001 (L-1107-AP)	
		PIC V76261	21-033592-021 (L-1107-AL)	21-033591-021 (L-1107-AL)	
		PIC V73263			
		Whitmore/Wirenetics W-4200-1135			
		179DT	21-033592-031 (L-1107-AR)	21-033591-031 (L-1107-AR)	
		Belden 1855A			
		VDM230			
V78209	21-033592-041 (L-1107-AU)	21-033591-041 (L-1107-AU)			

Size 12 75-Ohm crimp to crimp limited to 2.1 GHz

Size 12 75-Ohm to PCB tail limited to 5 Gbps (2.5 GHz)

\*\* Termination instructions are packaged with each contact and can be found on-line at:  
[www.amphenol-aerospace.com/serviceinstructions.asp](http://www.amphenol-aerospace.com/serviceinstructions.asp)

† Consult Amphenol Aerospace for current release of this contact or instruction sheet if applicable

\* Add P or S for pin or socket

† 21-033591-XXX sockets will only mate with Amphenol 21-0333592-XXX pins

### PCB CONTACTS -75 OHMS MATCHED IMPEDANCE CONTACTS

Contact Size	Length	Pin	Socket
8	0.525	21-033599-001	21-033590-001
	0.739	21-033599-031	
	0.833	21-033599-021	
	0.849	21-033599-041	
	0.886		21-033596-031
12	0.518	21-033686-023	
	0.847	21-033686-026	
	0.850		21-033614-151
	1.244	21-033686-027	

# Concentric Twinax Contacts

General Description, Application Data - Size 8

## SIZE 8 CONCENTRIC TWINAX CONTACTS

The size 8 concentric Twinax contact was developed for use in MIL-STD-1553 Airborne multiplex data bus applications which require high performance interconnect characteristics in multi-pin connectors. Ideal for this application need is the high performance Tri-Start connector with its fully scoop-proof feature of recessed pins. The concentric Twinax contact is crimp terminable to twisted shielded cable.

### FEATURES INCLUDE:

- Protection from magnetic and electrostatic interference including nuclear electromagnetic pulse
- Shield integrity through a multi-pin circular connector and does not require contact polarization within the insert
- 175°C rated and meets performance levels of MIL-DTL-38999 Series III connectors
- MIL-C-17/176-00002 cable termination
- Gold plated full crimp termination contacts qualified to M39029/90 & /91
- Integral part of the MIL-STD-1760 interconnection system
- Also available in modified, intermateable versions for termination to a host of cables (See chart on next page)

### TYPICAL ELECTRICAL PERFORMANCE

#### Size 8 Concentric Twinax Contacts

##### Voltage Rating:

- 500 Vrms max. @ sea level

##### Contact Resistance:

- Center @ 1 Amp, 55 millivolts max. voltage drop @ 25°C
- Intermediate @ 1 Amp, 55 millivolts max. voltage drop @ 25°C
- Outer @ 12 Amps, 75 millivolts max. voltage drop @ 25°C
- Operating Frequency: 0–20 MHz

##### Dielectric Withstanding Voltage:

- Center to Intermediate: 1000 VAC Rms @ Sea Level
- Intermediate to Outer: 500 VAC Rms @ Sea Level

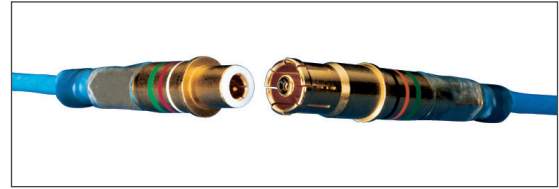
### SHORT PROFILE TWINAX CONTACT OPTION

A Short Profile size 8 Twinax is available that can be used with a low profile right angle backshell and can offer increased packaging efficiency. Consult Amphenol Aerospace for further information.

### TWINAX CABLE IN DATA BUS SYSTEMS

#### Benefits:

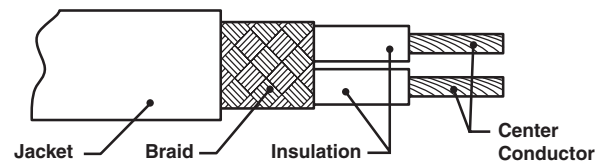
- Protection from magnetic interference
- Protection from electrostatic interference including nuclear electromagnetic pulse
- Meets parameters defined by MIL-STD-1553B
- Maintains shield integrity through a multi-pin circular connector and does not require contact polarization within the insert



Concentric Twinax Contacts Size 8



Short Profile Twinax vs  
Standard Length Twinax Contact



CABLE ILLUSTRATION - TWINAX CONTACT



# Concentric Twinax Contacts

## Contact Part Number Guide by Cable

### SIZE 8 CONCENTRIC TWINAX CONTACTS FOR USE IN D38999 CONNECTORS

Connector Series	For use with Cable	Comments	Size 8 Concentric Twinaxial Contact Part Number (Termination Instruction Sheet)**	
			Pin	Socket
	M17/176-00002	AS39029/113-625 & /114-628 (Amphenol) Supplied with heat shrink seal	21-033190-625 (L-1253-AG)	21-033191-628 (L-1253-AG)
D38999 Series I, III	5PTM1T04-2	AS39029/90/91 (Amphenol) Supplied with heat shrink seal	21-033190-529 (L-1253-A)	21-033191-530 (L-1253-B)
	M17/176-00002, PIC 6771553			
	M17/176-00002, PIC 6771553	M39029/90/91 (Pyle) Supplied with heat shrink seal	T3-46T08-LD (PN-430)	T3-47T08-LD (PN-430)
	M17/176-00002, PIC 6771553	Without seals	21-033190-000 (L-1253-A)	21-033191-000 (L-1253-B)
	M17/176-00002, PIC 6771553	Supplied with piggyback grommet seal	21-033190-001 (L-1253-A)	21-033191-001 (L-1253-B)
	5M2022-003	Without seals	21-033190-026 (L-1253-AA)	21-033191-026†
	Raychem 10612			
	05A0771			
	7724C8664			
	EPD22189B			
	GC875TM24H			
	Raychem 10614			
	T10971	Supplied with heat shrink seal	21-033190-027 (L-1253-K)	21-033191-027 (L-1253-L)
	23089/RC			
	PAN711-6421			
	Raychem 10613	Supplied with piggyback grommet seal	21-033190-029 (L-1253-K)	21-033191-029 (L-1253-L)
	23089/RC			
	PAN711-6421			
	Raychem 10613	Without seals	21-033190-030 (L-1253-K)	21-033191-030 (L-1253-L)
	23089/RC			
	PAN711-6421			
	Raychem 10613	Supplied with heat shrink sleeve	21-033190-040 (L-1253-S)	21-033191-040 (L-1253-T)
	7726D0664			
	ASNE 08072003-09			
	GSC-12-2548-00	Supplied with piggyback grommet seal	21-033190-081 (L-1253-W)†	21-033191-081 (L-1253-Y)†
	Axon P517417			
	5M2022-003			
	Raychem 10612	Supplied with heat shrink seal	21-033190-261 (L-1253-AA)	21-033191-261†
	5M2022-003			
	Raychem 10612			
7724C8664	Without seals	T3-46TB08-LD (PN-494)	T3-47TB08-LD (PN-494)	
Raychem 10614				
7820D0111 (20 AWG)	Without seals	T3-46TC08-LD (PN-537)	T3-47TC08-LD (PN-537)	
Gore CXN2268	Short profile Supplied with heat shrink seal (.465)	T3-46TE08-LD (PN-1001)	T3-47TE08-LD (PN-1001)	
M17/176-00002, PIC 6771553	Short profile Supplied with heat shrink seal (.465)	T3-46TD08-LD (PN-1000)	T3-47TD08-LD (PN-1000)	
M17/176-00002, PIC 6771553	Short profile Without seals (.263)	21-033910-015† (PN-1005)	21-033922-015 (PN-1005)	
M17/176-00002, PIC 6771553	Short profile Supplied with piggyback grommet seal (.465)	21-033617-001 (REF PN-100)	21-033922-015 (PN-1005)	
Gore CNX2702	Short profile Supplied with heat shrink seal (.465)	T3-46TF08-LD (PN-1002)	T3-47TF08-LD (PN-1002)	
M17/176-00002, PIC 6771553	Short profile Without seals (.303)		P-209546-27†	

\*\* Termination instructions are packaged with each contact and can be found on-line at: [www.amphenol-aerospace.com/serviceinstructions.asp](http://www.amphenol-aerospace.com/serviceinstructions.asp)

† Consult Amphenol Aerospace for current release of this contact or instruction sheet if applicable.

# Concentric Twinax Contacts

Contact Part Number Guide by Cable

SIZE 8 CONCENTRIC TWINAX CONTACTS FOR USE IN D38999 CONNECTORS				
Connector Series	For use with Cable	Comments	Size 8 Concentric Twinaxial Contact Part Number (Termination Instruction Sheet)**	
			Pin	Socket
D38999 Series I, III	0024A0024	Without seals	21-033190-070 (L-1253-U)	21-033191-070 (L-1253-V)
	Fileca F2709-13-CA			
	HS5930			
	S280W502-1			
	Raychem 10602 0024G0024			
	0024A0024	Supplied with piggyback grommet seal	21-033190-071 (L-1253-U)	21-033191-071 (L-1253-V)
	Fileca F2709-13-CA			
	HS5930			
	Raychem 10602 0024G0024			
	S280W502-1			
	Tensolite 24463/9P025x-2(LD)	Supplied with heat shrink seal	21-033190-072 (L-1253-U)	21-033191-072 (L-1253-V)
	0024A0024			
	Fileca F2709-13-CA			
	HS5930			
	Raychem 10602 0024G0024			
	S280W502-1	Without seals	21-033190-090†	21-033191-090 (L-1253-AD)
	0024A0311			
	PIC E10244	Supplied with piggyback grommet seal	21-033190-091†	21-033191-091 (L-1253-AD)
	0024A0311			
	PIC E10224	Supplied with heat shrink seal	21-033190-092†	21-033191-092 (L-1253-AD)
	0024A0311			
	PIC E10224	M39029/113-625 & /114-628 Supplied with heat shrink seal	21-033190-625 (L-1253-AG)	21-033191-628 (L-1253-AG)
	M17/176-00002			

\*\* Termination instructions are packaged with each contact and can be found on-line at:  
[www.amphenol-aerospace.com/serviceinstructions.asp](http://www.amphenol-aerospace.com/serviceinstructions.asp)

† Consult Amphenol Aerospace for current release of this contact or instruction sheet if applicable.

# Concentric Twinax Contacts

General Description, Contact Part Number Guide by Cable

## AMPHENOL TWINAX CONTACTS

### SIZE 10 & 12 CONCENTRIC TWINAX CONTACTS

The size 12 concentric twinax contact interface was developed for JN1104 EuroFighter contacts, and can be used in any size 12 cavity M38999 I, II or III or SJT connector.

#### FEATURES:

- Operating temperature -65°C to 175°C
- Pins are scoop-proof
- Meets performance levels of M38999 connector
- 4 components, gold plated crimp termination
- For use with a variety of cables (See chart below)

### TYPICAL ELECTRICAL PERFORMANCE

#### Size 10 & 12 Concentric Twinax Contacts

##### Voltage Rating:

- 500 Vrms max. @ sea level

##### Contact Resistance:

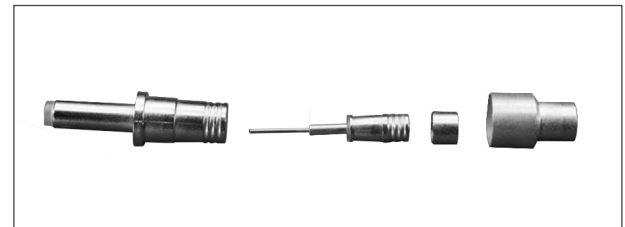
- Center @ 1 Amp, 55 millivolts max. voltage drop @ 25°C
- Intermediate @ 1 Amp, 55 millivolts max. voltage drop @ 25°C
- Outer @ 12 Amps, 85 millivolts max. voltage drop @ 25°C
- Operating Frequency: 0-30 MHz

##### Dielectric Withstanding Voltage:

- Center to Intermediate 800 VAC Rms @ Sea Level
- Intermediate to Outer 500 VAC Rms @ Sea Level



Concentric Twinax Contacts Size 12



Unassembled Components of Size 12 Concentric Twinax Contact

### SIZE 10 & 12 CONCENTRIC TWINAX CONTACTS FOR USE IN D38999 CONNECTORS

Connector Series	Contact Size	For use with Cable	Comments	Concentric Twinaxial Contact Part Number (Termination Instruction Sheet)**	
				Pin	Socket
D38999 Series I, III	10	5M2022-003	Supplied with Thermal fit sleeve	21-033844-001 (L-1255-A)	21-033843-001 (L-1255-B)
D38999 Series I, III	12	M17/176-00002	JN1104 Interface	21-033909-025 (L-2092-G)	21-033908-025 (L-2092-G)
		ST5M1212-002			
		TWC-78-1			
		G771553			
		0024A0024			
		5M 2022-003		21-033909-028 (L-2092-G)	21-033908-028 (L-2092-G)
		Fileca F2709-13-CA			
		10612			
		EPD32263A		21-033909-029 (L-2092-H)	21-033908-029 (L-2092-H)
		GSC-12-2548-00			
		5PTM1T04-1	21-033909-081 (L-2092-AB)	21-033908-081 (L-2092-AB)	
		ASNE0849			
		VG95218T023D002	21-033909-091 (L-2092-AC)	21-033908-091 (L-2092-AC)	
		55PC1221-24			
VG95218T023D002	Same as -91 except new ferrule with wire support	21-033909-101 (L-2092-AC)	21-033908-101 (L-2092-AC)		
M27500A22D2T23					
D38999 Series II	12	GSC-12-2549-00	JN1104 Interface	21-033909-131	21-033908-131
		M17/176-00002			
		0024A0024			
					21-033640-028 (L-2092-V)

\*\* Termination instructions are packaged with each contact and can be found on-line at: [www.amphenol-aerospace.com/serviceinstructions.asp](http://www.amphenol-aerospace.com/serviceinstructions.asp)

### AMPHENOL TRIAX CONTACTS

Provide additional shielding when terminated to triax cable having solid or stranded center conductors. Amphenol supplies triax contacts in sizes 8, 10 and 12 and they are ideally suited for use in D38999 Series I, II and III circular connectors.

#### FEATURES AND BENEFITS:

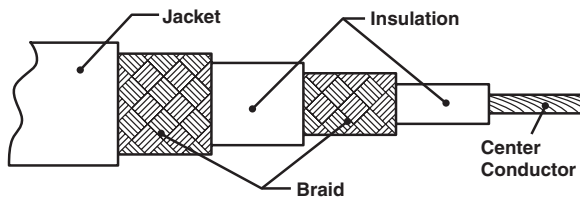
- Incorporates three conductors, designed for use with triax cable
- Each of the three conductors are separated by dielectric insulation to isolate ground planes
- Shielding effectiveness is improved with two isolated shields
- May be specified for direct connection to printed circuit boards
- May be mixed with coax, twinax and power contacts in a single connector



Triax Size 8 Pin Contact



Triax Size 12 Socket Contact



Cable Illustration - Triax Contact

#### TYPICAL ELECTRICAL PERFORMANCE

##### Size 8, 10 and 12 Triax Contacts

##### Contact Resistance:

- Center @ 1 Amp, 120 millivolts max. voltage drop @ 25°C
- Intermediate @ 1 Amp, 60 millivolts max. voltage drop @ 25°C
- Outer @ 12 Amps, 90 millivolts max. voltage drop @ 25°C

##### Operating Frequency:

- Size 12: 0-30 MHz
- Size 10: 0-300 MHz
- Size 8: 0-500 MHz

##### Dielectric Withstanding Voltage:

- Center to Intermediate 800 VAC Rms @ Sea Level
- Intermediate to Outer 500 VAC Rms @ Sea Level

##### Insulation Resistance:

- 1000 megohms minimum @ 25°C

# Triax Contacts

## Contact Part Number Guide by Cable

SIZE 8, 10 & 12 TRIAX CONTACTS FOR USE IN D38999 SERIES I & III CONNECTORS				
Size	For use with Cable	Comments	Size 8, 10, 12 Triax Contact Part Number (Termination Instruction Sheet)**	
			Pin	Socket
8	28883/02060X-1		21-033198-003 (L-1254-F)	21-033197-003 (L-1254-E)
	5M2397-002			
	7528A5314			
	81264-02			
	Champlain 81-00321A			
	RGX-179			
	RT-179			
	RTG 179			
	Tensolite 28883/02060X-1(LD)			
	Thermatics 12447			
	Times RT316 (AA-6861)			
	PAN6595XM			
	752866314		21-033198-011 (L-1254-V)	21-033197-011 (L-1254-T)
	7528G6314			
	5M2559-001		21-033198-004 (L-1254-D)	21-033197-004 (L-1254-C)
	81264-01			
	Cheminax 9530F5214			
	Teledyne 13809			
	Tensolite 28598/9J063T-1			
	ST5M1323-001		21-033198-010 (L-1254-S)	21-033197-010 (L-1254-S)
	Champlain 81-00700			
Teledyne 11914/1				
Tensolite 26895/90334X-1				
Times AA6603				
Tyco 7530A5314		21-033198-014	21-033197-014	
10602 (Twinax)	Special design with triax mating end and twinax cable termination	21-033724-015 (L-1255-C)	(Consult with Amphenol for availability)	
RT316		21-033198-031	21-033197-031	
Pic L7626TX (75 Ohm)		21-033198-015	21-033197-015	
Gore GSC-03-81497-00		21-033198-041	21-033197-041	
ST5M1322-001 (AA2317)		21-033198-051	21-033197-051	
10	5M2397-002		21-033800-001 (L-1256-A)	21-033801-001 (L-1256-B)
12	JN1088WT (50 Ohm)	JN1104 Interface	21-033909-012 (L-1256-J)	21-033908-012 (L-1256-J)
	JN1088WU (75 Ohm)			
	GSC-03-81497-00 (75 Ohm)	Replaced by -33 with improved rear insulator	21-033909-023 (L-1256-M)	21-033908-023 (L-1256-M)
	GSC-03-81497-00 (75 Ohm)	JN1104 Interface	21-033909-033 (L-1256-P)	21-033908-033 (L-1256-P)
	540-1050-000 (75 Ohm)			
	Axon RGX-179			
	Harbour TRX179			
Times Microwave AA-6151 (RT-179)		21-033909-071 (L-1256-AA)	21-033908-071 (L-1256-AA)	

\*\* Termination instructions are packaged with each contact and can be found on-line at: [www.amphenol-aerospace.com/serviceinstructions.asp](http://www.amphenol-aerospace.com/serviceinstructions.asp)

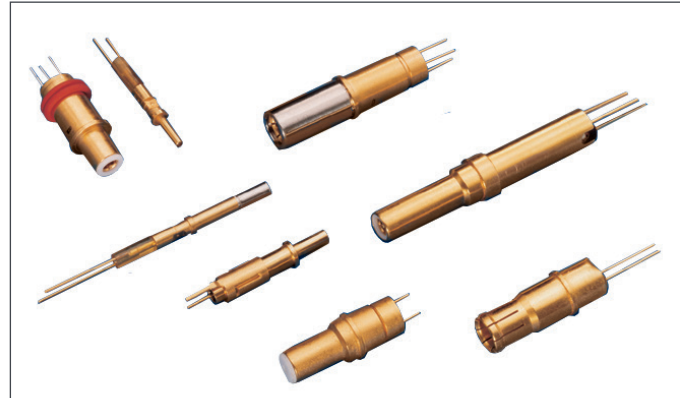
### AMPHENOL PRINTED CIRCUIT TAIL CONTACTS

Contacts are currently supplied as follows:

- 8, 12 and 16 Coax
- 8, 10 and 12 Twinax
- 8 Triax (socket only)

PC Tail shielded contacts provide a cost effective packaging solution for limited space applications where connectors are attached to printed circuit boards. High reliability is assured with factory pre-assembled contacts and standardization termination to the board.

PC Tail contacts are available for MIL-DTL-38999 Series I and III circular connectors and also for ARINC 404, ARINC 600 and R27 rectangular connectors. The following pages show the available PC Tail contact part numbers for 38999 Circular connectors. See page 41 for information on twinax contacts for ARINC Rectangular connectors along with compatible cable terminations. Consult Amphenol Aerospace for further information on the applicable tooling for these contacts.



*PC Tail Coax and Twinax Contacts for Attachment to Printed Circuit Boards*

### TYPICAL ELECTRICAL PERFORMANCE

#### Size 8, 12 & 16 PC Tail Coax Contacts

##### Contact Resistance:

- Center @ 1 Amp, 55 millivolts max. voltage drop @ 25°C
- Outer @ 1 Amp, 55 millivolts max. voltage drop @ 25°C
- Operating Frequency: 0–500 MHz

##### Dielectric Withstanding Voltage:

- Center to Outer 500 VAC Rms @ Sea Level

##### Insulation Resistance:

- 1,000 megohms minimum @ 25°C

### TYPICAL ELECTRICAL PERFORMANCE

#### Size 8, 10 & 12 PC Tail Twinax Contacts

##### Contact Resistance:

- Center @ 1 Amp, 55 millivolts max. voltage drop @ 25°C
- Intermediate @ 1 Amp, 55 millivolts max. voltage drop @ 25°C
- Outer @ 1 Amp, 55 millivolts max. voltage drop @ 25°C
- Operating Frequency: 0–20 MHz

##### Dielectric Withstanding Voltage:

- Center to Intermediate 500 VAC Rms @ Sea Level
- Intermediate to Outer 500 VAC Rms @ Sea Level

##### Insulation Resistance:

- 1,000 megohms minimum @ 25°C



*Size 8, PC Tail Twinax Socket Contact for use in D38999 Connectors*

### TYPICAL ELECTRICAL PERFORMANCE

#### Size 8 PC Tail Triax Contacts

##### Contact Resistance:

- Center @ 1 Amp, 55 millivolts max. voltage drop @ 25°C
- Intermediate @ 1 Amp, 55 millivolts max. voltage drop @ 25°C
- Outer @ 1 Amp, 55 millivolts max. voltage drop @ 25°C
- Operating Frequency: 0–500 MHz

##### Dielectric Withstanding Voltage:

- Center to Intermediate 500 VAC Rms @ Sea Level
- Intermediate to Outer 500 VAC Rms @ Sea Level

##### Insulation Resistance:

- 1,000 megohms minimum @ 25°C



*D38999 Connector with PC Tail Coax Contacts, Sealing Plugs in unused contact cavities and PC Tail Alignment Disc*

# Coax, Twinax & Triax PC Tail Contacts

## Contact Part Number Guide

PC TAIL COAX, TWINAX, AND TRIAX CONTACTS FOR USE IN D38999 SERIES I & III CONNECTORS						
Size	Tails*	Comments	PC Tail Coax Contact Part Number	PC Tail Twinax Contact Part Number	PC Tail Triax Contact Part Number	
8 Pin	PCB 2 tails		21-033733-007			
		For epoxy filled connector	21-033733-002			
		For epoxy filled connector	21-033733-004			
			21-033733-009			
			21-033733-008			
	PCB 4 outer tails, 1 inner		21-033733-005			
	PCB 3 tails	M39029/90/91 Interface			21-033967-115	
					21-033967-125	
					21-033967-015	
					21-033967-045	
					21-033967-055	
					21-033967-065	
					21-033967-085	
					21-033967-095	
	PCB 9 tails				P-209550†	
				P-209532-1		
				P-209532-2		
PCB 3 tails					21-033828-001	
					21-033828-021	
					21-033828-041	
8 Socket	PCB 2 tails		21-033426-001			
		M39029/91 Interface Outer body grounded to shell			DB-109002	
					21-033919-015	
					21-033919-025	
	PCB 3 tails			21-033426-021	21-033921-015	
				21-033426-041	21-033921-025	
					21-033921-045	
					21-033921-035	
					21-033921-065	
					21-033921-075	
					21-033921-115†	
		AS39029/114 Type (with hood)			21-033479-001	
	AS39029/114 Type (with hood)			21-033479-021		
	M39029/90/91 Interface .040 dia. tails			21-033921-105†		
PCB 2 tails	Outer body grounded to shell				21-033840-021	
	Outer body grounded to shell				21-033841-001	
PCB 3 tails					21-033840-001	
10 Pin	PCB 2 tails	Outer body grounded to shell		21-033844-002†		

\* Consult Amphenol Aerospace for tail configurations and tail diameters.

† Consult Amphenol Aerospace for current release of this contact.

# Coax, Twinax & Triax PC Tail Contacts

## Contact Part Number Guide

PC TAIL COAX, TWINAX, AND TRIAX CONTACTS FOR USE IN D38999 SERIES I & III CONNECTORS				
Size	Tails*	Comments	PC Tail Coax Contact Part Number	PC Tail Twinax Contact Part Number
12 Pin	PCB 2 tails		21-033686-008	
		Outer tail clip type	21-033686-009	
			21-033686-005	
		Outer tail clip type	21-033686-010	
			21-033686-013	
		For epoxy filled connector	21-033687-006	
			21-033687-007	
	21-033686-016†			
12 Socket	PCB 2 tails		21-033614-001	
			21-033614-021	
			21-033614-041	
		Outer tail clip type	21-033611-003	
	Outer tail clip type, M38999 Series II	21-033430-001		
	M38999 Series II	21-033430-021		
PCB 3 tails		21-033440-001		
	M38999 Series II	21-033430-041		
16 Pin	PCB 1 tail	Outer body grounded to shell	21-033634-015	
		Outer body grounded to shell	21-033634-035	
			21-033634-045	
	PCB 2 tails		21-033856-015	
			21-033856-065	
			21-033386-001	
	PCB 90 degree, 2 tails		21-033856-025	
16 Socket	PCB 2 tails		21-033857-001	
			21-033857-008	
			21-033857-007	
			21-033610-001	
			21-033610-002	
			21-033441-001	
		M38999 Series II	21-033606-001	
			21-033606-021†	
			21-033606-031†	
			21-033610-003	
	21-033857-003			
12 Pin	PCB 4 tails	JN1104 Interface		21-033633-001†**
			21-033633-002**	
			21-033633-006**	
			21-033633-007**	
12 Socket	PCB 4 tails	M38999 Series II, JN1104 Interface		21-033393-006**
				21-033393-005**
				21-033433-001**

\* Consult Amphenol Aerospace for tail configurations and tail diameters.

\*\* Size 12 twinax and triax contacts are intermatable.

† Consult Amphenol Aerospace for current release of this contact.