Glenair®

SPRING-LOADED SOLDERLESS CONTACT

AlphaLink PC Board Connectors and Jumpers

BOARD-LEVEL SOLUTIONS FOR MISSION-CRITICAL APPLICATIONS

OCTOBER 2013

SERIES 171

AlphaLink

Discrete connectors and turnkey I/O to board flex and wire jumpers for high-performance applications—shielded, rugged, high-temperature, spring-loaded, solderless.

AlphaLink is an innovative high-performance printed circuit board connector built on .050" center-to-center contact spacing with spring-loaded board contacts and flex, wire, or solder cup terminations. Spring-loaded contacts interconnect directly to board pads and circuits to effect an ultra-low-profile and lightweight solution. Direct connection to the board eliminates a mating connector half and makes for easier and faster board preparation and masking. On the termination side, AlphaLink connectors are equipped with either PC tail, pre-terminated wire pigtails, or solder cups for complete versatility in flex circuit or conventional wire termination. AlphaLink may be ordered as a discrete connector or in turnkey jumper configurations paired with Glenair I/O connectors, including Series 80 Mighty Mouse, Series 88 SuperFly, Series 79 Micro-Crimp™, Series 89 circular and rectangular Nanominiature, and our mil-qualified 83513 (MWDM) Micro-D connectors.

Glenair®

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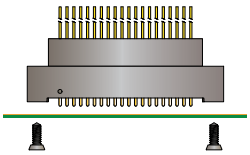
SERIES 171

AlphaLink SL spring-loaded printed circuit board connectors and flex / wire jumpers



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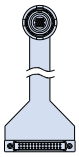

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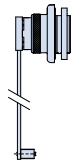

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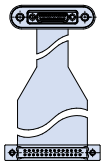

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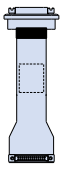

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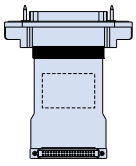

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CUSTOM MICRO AND NANOMINIATURE FLEX SOLUTIONS

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SERIES 171

AlphaLink SL

Board-level spring-loaded-contact connectors and turnkey flex jumpers

AlphaLink SL is a high-performance, solderless board-level connector technology developed by Glenair that significantly expands board-level interconnection options for users of mil-spec caliber connectors. Precision-machined and EMI shielded, these ultralightweight PC tail, solder cup, and/or pigtail equipped connectors are designed for high-reliability applications that require avionic system levels of vibration and shock tolerance. Ultra low-profile and high-density, AlphaLink SL connectors are equipped with 2–3 Amp spring-loaded contacts and may be ordered either as discrete connectors or in turnkey flex jumpers that combine popular Glenair high-reliability I/O connectors. Glenair is perfectly positioned to provide the entire solution with in-house manufacturing for every component part—from connectors and contacts to rugged polyimide-based flex. AlphaLink SL flex jumpers are available with Series 80 Mighty Mouse, Series 88 SuperFly, and Series 89 nanominiature circular connectors, as well as Series 89 nanominiature, Micro-D subminiature and Series 79 Micro-Crimp rectangular connectors. A wide range of insert arrangements, from 4–40 contacts is available.

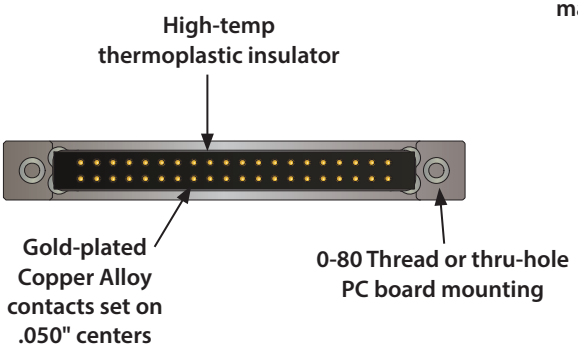
Flex offers many advantages over conventional wire, including reduced size, weight, and complexity

ALPHALINK ADVANTAGES

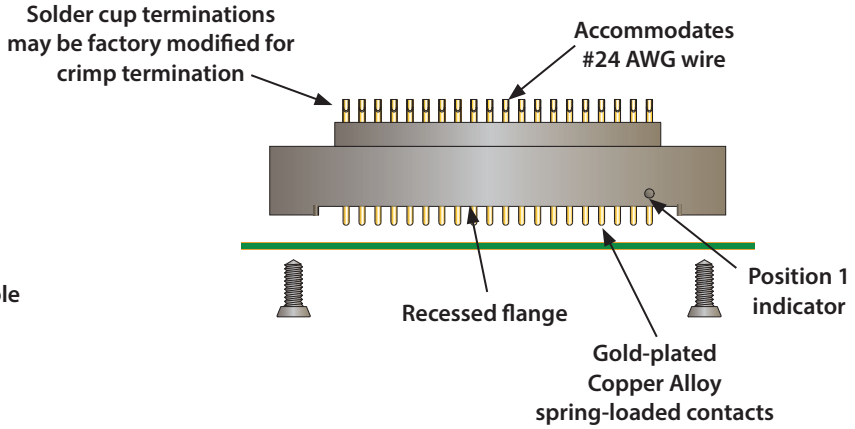
- **Spring-loaded, solderless board-level connector solution**
- **PC tail and solder cup versions offer easy termination to flex or wire**
- **Available turnkey I/O to board flex and pigtail wire jumpers**
- **Lightweight and low-profile—up to 40% space savings compared to 2mm pitch solutions**
- **High-density .050" center-to-center contact footprint**
- **Fast and easy PC board integration with reduced board preparation and masking**
- **Withstands temperature, vibration and shock extremes**

Spring-loaded board level connector Design features

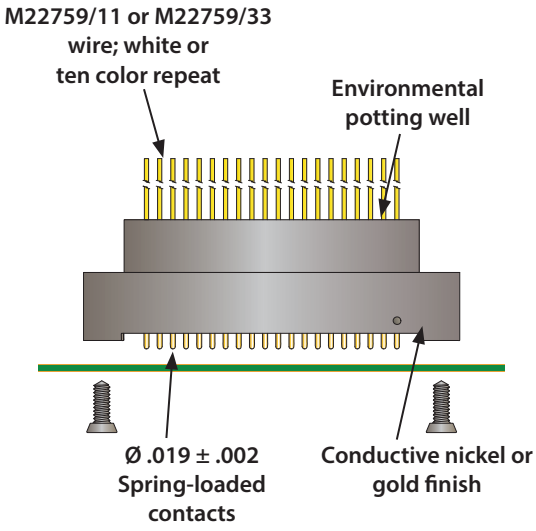
AlphaLink® SL Spring-Loaded Contact Interface



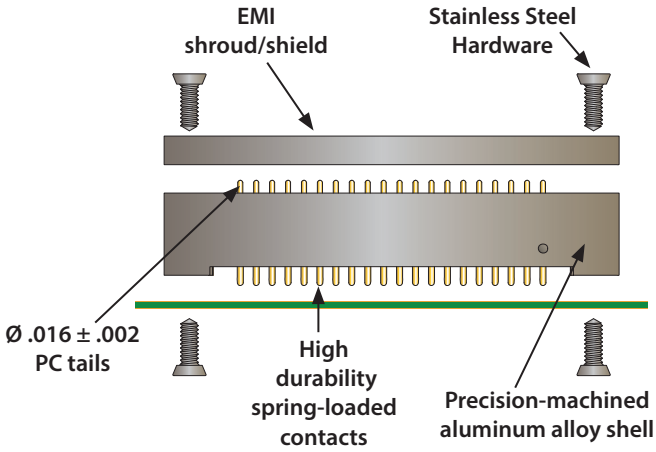
171-134-01 Solder Cup Termination



171-134-03 Wire Pigtail Termination

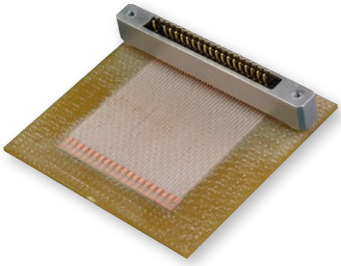


171-134-02 PC Tail Termination



AlphaLink® SL flex jumpers: Compact interconnect assemblies that combine circuit board technology and cabling into a lightweight, integrated package. These turnkey jumper assemblies reduce system size and weight and are ideally suited for prototype applications and new product development efforts.

AlphaLink® SL spring-loaded contact PC board connectors deliver up to 50% footprint savings versus conventional 2mm pitch solutions. PC tail equipped connectors, the 171-134-02, are supplied with an EMI shroud / shield for improved EMC compared to low-cost plastic board connectors. All connector styles incorporate a high-reliability spring-loaded contact that delivers a virtually unlimited number of mating cycles. Connectors are typically mated to the PC board using conductive pads or via's. Stainless steel mounting hardware provides a robust, vibration-resistant attachment solution compared to stamped-and-formed retention barbs.



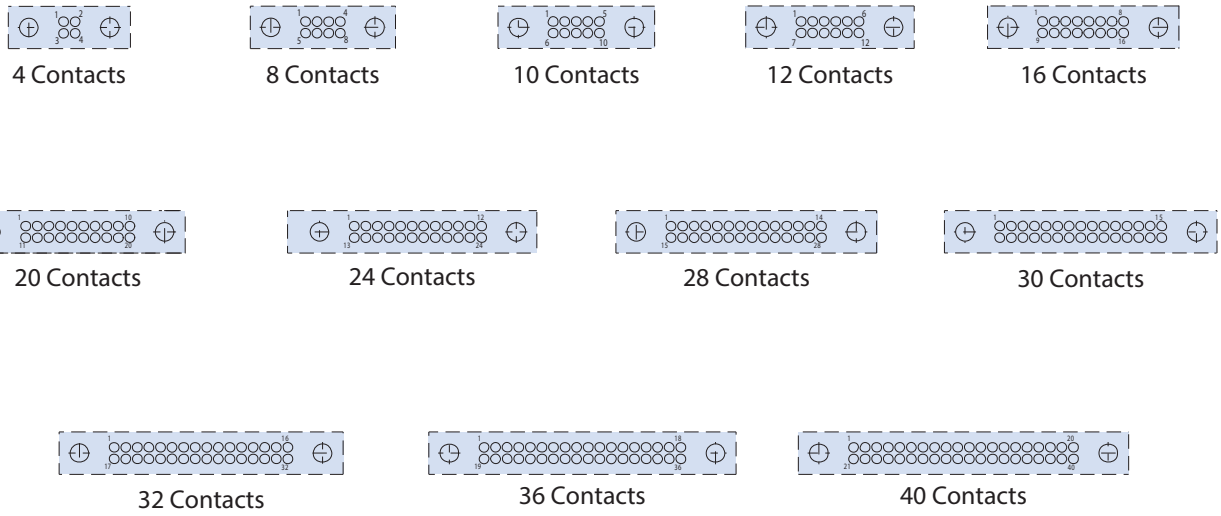
Glenair®

For more information contact Glenair at **818-247-6000** or visit our website at **www.glenair.com**
U.S. CAGE code 06324

AlphaLink® SL connectors with spring loaded contacts

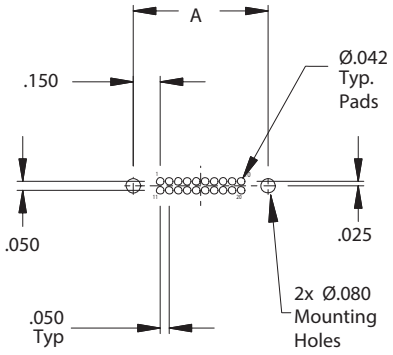
Printed circuit board layouts, dimensions and specifications

AlphaLink Available PCB Layouts
(view from top of board)



ALPHALINK® SPRING LOADED CONTACT CONNECTORS TECHNICAL SPECIFICATIONS

Modular contacts set on .050" centers, supplied in double-row contact arrangements.
Precision-machined piston / base and gold-plated components assure a 1,000 minimum cycle life.
Pistons have a .0275" mid stroke (when fully mated to PC board with a 60 gram/contact force.)
Low resistance, high current contacts are rated at 2 amps continuous 3 amps peak.
High temperature thermoplastic insulators are suitable for surface mount processes.
Contact strips are designed for manual placement into ø.023±.003" Plated thru-holes in the circuit board.
Recommended for board thicknesses of .062" or greater.



Recommended PCB Layout

Materials

Contact piston and base: machined Copper Alloy plated 20 micro inches Gold over 100 micro inches Nickel.
Spring: Beryllium Copper plated 10 micro inches Gold.
Insulator: high temp. thermoplastic rated UL94 V-0
Shell: Aluminum Alloy

Shell Finishes

Plating Code 2 = Electroless Nickel (Glenair M code, AMS-C-26074, Class 4 Grade B; ASTM-B-733, SC2, Type IV)
Plating Code 5 = Gold (Glenair code Z2, MIL-DTL-45204, Class 1 over Electroless Nickel)

Electrical

Voltage rating: 100vrms/150vdc
Current rating: 2A (continuous), 3A (peak) per contact.
Contact resistance: 20 milliohms maximum.
Insulation resistance: 5,000 megohms minimum.
Dielectric strength: 700 vrms minimum.
Capacitance: 1 pf maximum.

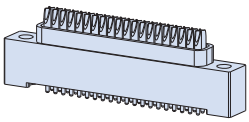
Mechanical

Spring force at initial height (a): 25 grams
Spring force at mid stroke (b/2): 60 grams
Durability: 1,000 cycles
Vibration sensitivity: 1.52mm DA or 20g. Duration 4h (in ea. Of 3 axis) per EIA-364-28D
Shock severity: 100g for 6ms per EIA-364-27B
Operational temperature: -65°c to +150°c

Contacts and Dimensions	
Contacts	A
4	0.350 (8.9)
8	0.450 (11.4)
10	0.500 (12.7)
12	0.550 (14.0)
16	0.650 (16.5)
20	0.750 (19.1)
24	0.850 (21.6)
28	0.950 (24.1)
30	1.000 (25.4)
32	1.050 (26.7)
36	1.150 (29.2)
40	1.250 (31.8)

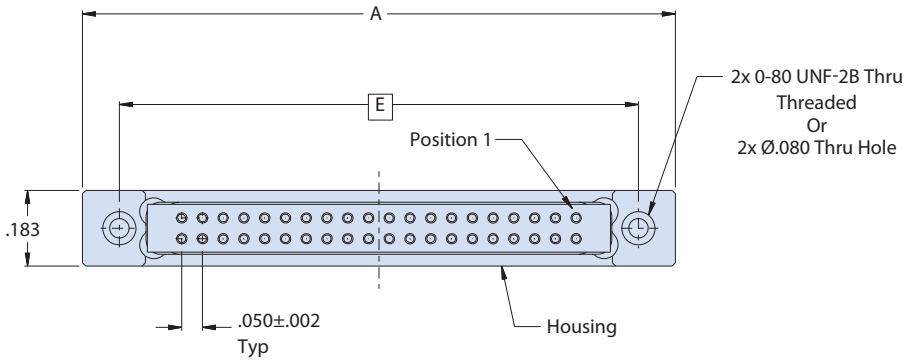
AlphaLink® SL connector with spring loaded contacts and solder cups

171-134-01



How To Order 171-134-01				
Sample Part Number	**171-134-01**	**2**	**-10**	**T**
Series / Basic Part No.	AlphaLink® SL connector with spring loaded contacts and solder cups			
Shell Finish	**2** = Nickel **5** = Gold			
Contact Layout	See Table I and Contact Arrangements, page 4			
Hardware	**T** = Threaded thru hole **Omit** for thru hole			

B



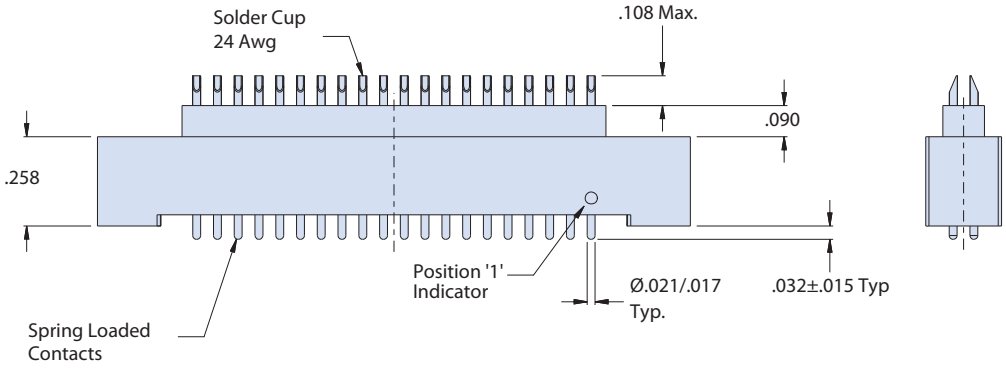
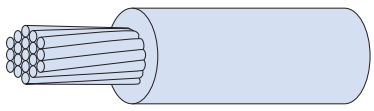


Table I: Layout and Dimensions

No. of contacts	A	E
4	0.527 (13.4)	0.350 (8.9)
8	0.627 (15.9)	0.450 (11.4)
10	0.677 (17.2)	0.500 (12.7)
12	0.727 (18.5)	0.550 (14.0)
16	0.827 (21.0)	0.650 (16.5)
20	0.927 (23.5)	0.750 (19.1)
24	1.027 (26.1)	0.850 (21.6)
28	1.127 (28.6)	0.950 (24.1)
30	1.177 (29.9)	1.000 (25.4)
32	1.227 (31.2)	1.050 (26.7)
36	1.327 (33.7)	1.150 (29.2)
40	1.427 (36.2)	1.250 (31.8)

Compatible Wire



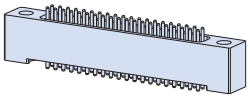
AS22759 qualified single-ended data transmission wire for termination of AlphaLink® SL solder-cup connectors—see page 42 of this catalog

MATERIALS AND FINISHES

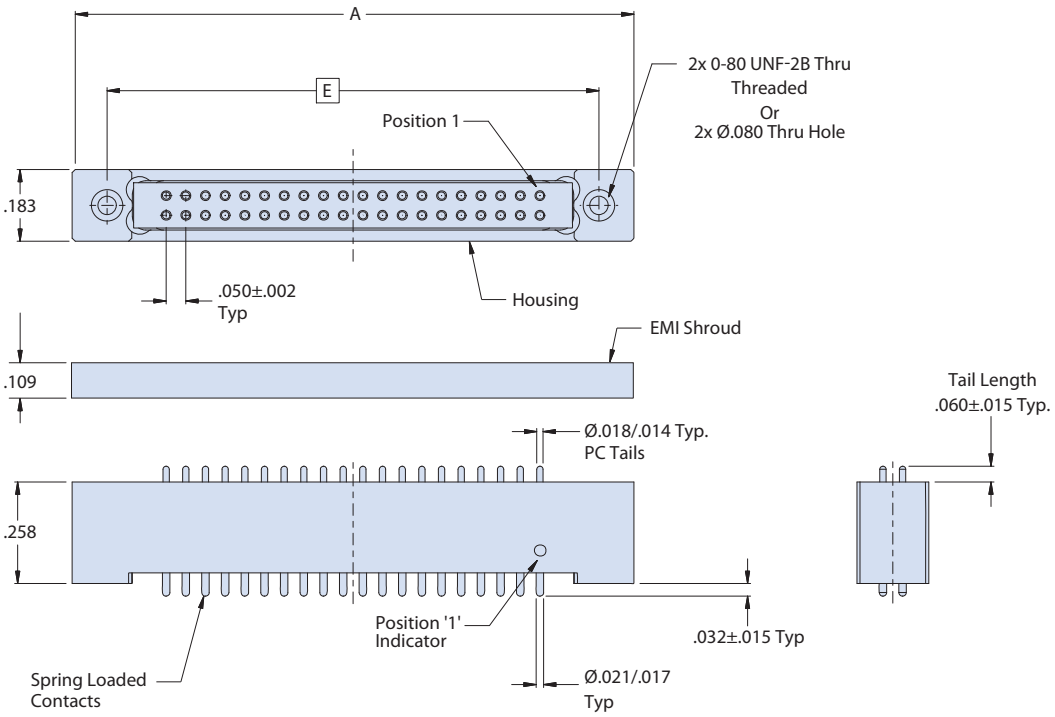
Shell: Aluminum Alloy
Insulator: High-temperature thermoplastic rated UL94 V-0
Contacts: Copper Alloy/Gold Plated

AlphaLink® SL connector with spring loaded contacts and PC tails

171-134-02



How To Order 171-134-02				
Sample Part Number	**171-134-02**	**2**	**-10**	**T**
Series / Basic Part No.	AlphaLink® SL connector with spring loaded contacts and PC tails			
Shell Finish	**2** = Nickel **5** = Gold			
Contact Layout	See Table I and Contact Arrangements, page 4			
Hardware	**T** = Threaded thru hole **Omit** for thru hole			



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12	0.727 (18.5)	0.550 (14.0)
16	0.827 (21.0)	0.650 (16.5)
20	0.927 (23.5)	0.750 (19.1)
24	1.027 (26.1)	0.850 (21.6)
28	1.127 (28.6)	0.950 (24.1)
30	1.177 (29.9)	1.000 (25.4)
32	1.227 (31.2)	1.050 (26.7)
36	1.327 (33.7)	1.150 (29.2)
40	1.427 (36.2)	1.250 (31.8)

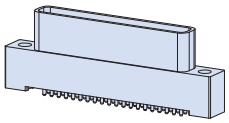
MATERIALS AND FINISHES

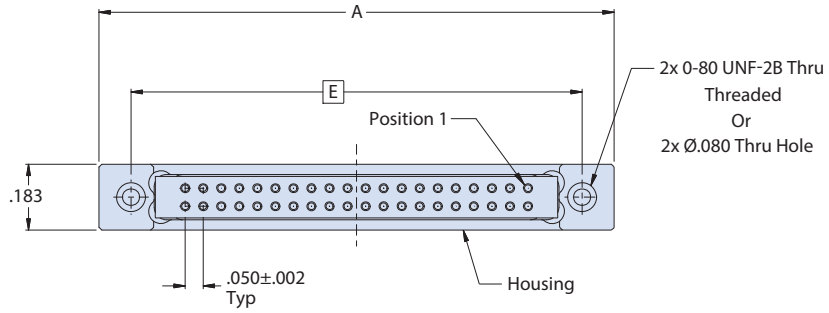
Shell: Aluminum alloy
Insulator: High-temperature thermoplastic rated UL94 V-0
Contacts: Copper Alloy/Gold Plated

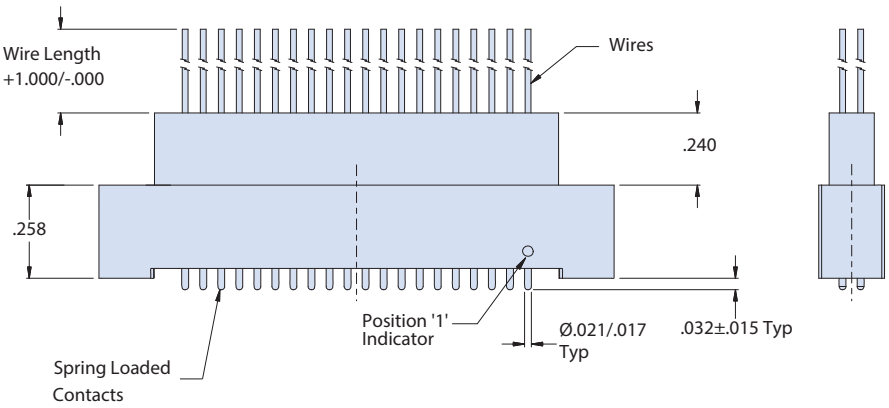
AlphaLink® SL connector with spring loaded contacts and pigtail wires

171-134-03

How To Order 171-134-03									
Sample Part Number	**171-134-03**	**2**	**-10**	**-4**	**K**	**7**	**-18**	**T**
Series / Basic Part No.	AlphaLink® SL connector with spring loaded contacts and pigtail wires							
Shell Finish	**2** = Nickel **5** = Gold							
Contact Layout	See Table I and Contact Arrangements, page 4							
Wire Gage (AWG)	**4** = #24 **6** = #26 **8** = #28 **0** = #30							
Wire Type	**K** = M22759/11 (#24-#28) **J** = M22759/33 (#24-#30)							
Wire Color Code	**1** = White **7** = Ten Color Repeat							
Wire Length	In inches							
Hardware	**T** = Threaded thru hole **Omit** for thru hole							







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8	0.627 (15.9)	0.450 (11.4)
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12	0.727 (18.5)	0.550 (14.0)
16	0.827 (21.0)	0.650 (16.5)
20	0.927 (23.5)	0.750 (19.1)
24	1.027 (26.1)	0.850 (21.6)
28	1.127 (28.6)	0.950 (24.1)
30	1.177 (29.9)	1.000 (25.4)
32	1.227 (31.2)	1.050 (26.7)
36	1.327 (33.7)	1.150 (29.2)
40	1.427 (36.2)	1.250 (31.8)

MATERIALS AND FINISHES

Shell: Aluminum alloy
Insulator: High-temperature thermoplastic rated UL94 V-0
Contacts: Copper Alloy/Gold Plated

SERIES 171

AlphaLink SL Flex Jumpers

The easiest and fastest way to incorporate flexible circuit cabling in your high-performance application

Glenair AlphaLink SL I/O-to-board jumper assemblies are cataloged according to I/O connector type. Glenair currently offers six families of AlphaLink jumpers for Series 801 and 804 Mighty Mouse, Series 79 Micro-Crimp, MIL-DTL-83513 Micro-D, Series 89 Nanominiature circular and rectangular, and our nanominiature Series 88 SuperFly. Flex-to-board solutions available in each family are designed to optimize weight and package size reduction as well as maintain electrical performance equivalent with I/O connector performance*.

* Contacts mapped 1-to-1 from I/O to B/L connector (unused B/L contacts not connected). For alternative wire schedules, please consult factory.

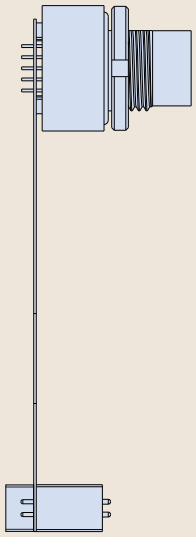
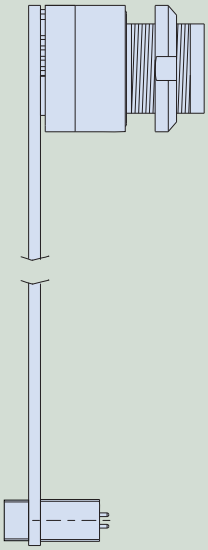
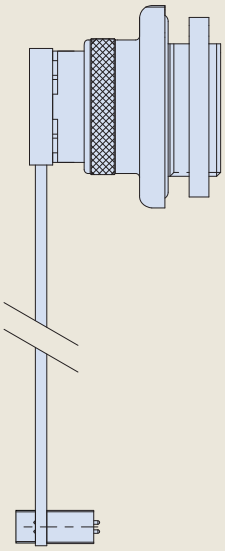
Easy-to-Order, Ready-to-Use

- **Solderless connection allows fast yet rugged PC board mating**
- **Easy ordering of high-performance I/O connector-to-board flex jumpers**
- **Chemically etched, copper-clad polyimide flex circuits offer excellent temperature tolerance, dimensional stability, and reduced size and weight**
- **Designed for optimal electrical performance, including matched-impedance applications**
- **Ideal for rapid prototyping**
- **Superior electrical and mechanical performance compared to other cabling options**
- **A high-availability, fast-turn catalog solution**

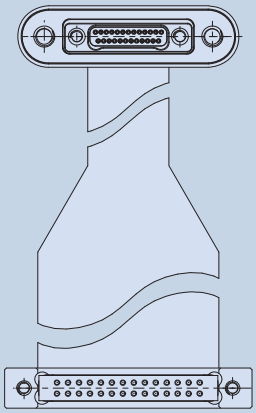
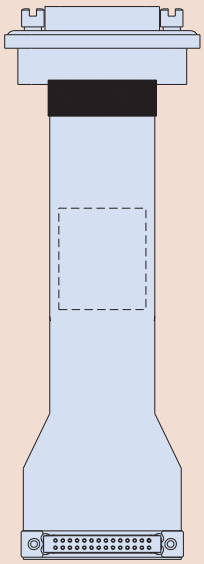
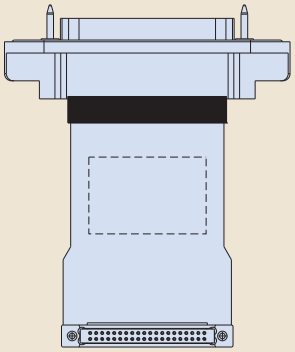
SERIES 171

AlphaLink SL flex jumpers selection guide

Circular connector family selection guide

Nano Circular Section C	**Series 88 SuperFly** Section D	**Series 80 Mighty Mouse** Section E
		
Glenair Series 89 Circular Nanominiature connectors with breakaway or threaded coupling in 6 contact arrangements, terminated with rugged polyimide-based flex to high-performance AlphaLink SL board level connectors.	Glenair Series 88 SuperFly connectors with quick-disconnect or threaded coupling in 7 contact arrangements, terminated with rugged polyimide-based flex to high-performance AlphaLink SL board level connectors.	Glenair Series 801 double-start ACME thread and Series 804 quick-disconnect Mighty Mouse receptacles in 8 contact arrangements terminated with rugged polyimide-based flex to high-performance AlphaLink SL board level connectors.

Rectangular connector family selection guide

Rectangular Nano Section F	**MIL-DTL-83513 Type Micro-D** Section G	**Series 79 Micro-Crimp** Section H
		
Glenair Series 89 Rectangular Nanominiature rear-panel-mount plugs or receptacles in 7 contact arrangements, terminated with rugged polyimide-based flex to high-performance AlphaLink SL board level connectors.	High-reliability Micro-D MIL-DTL-83513 type rectangular connectors in 7 contact arrangements, terminated with rugged polyimide-based flex to high-performance AlphaLink SL board level connectors.	Glenair Series 79 Micro-Crimp advanced-performance rectangular connectors in 7 contact arrangements, terminated with rugged polyimide-based flex to AlphaLink board level connectors.

Contact arrangements • materials and finishes • dimensions • PCB layout • panel cutout

Circular Nano to AlphaLink Flex Jumpers

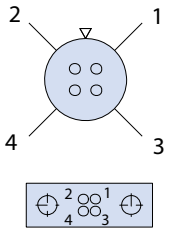
Glenair Series 89 Circular Nanominiature connectors available in 6 contact arrangements, terminated with rugged polyimide-based flex to AlphaLink board level connectors.

Circular Nano to AlphaLink flex jumper

Recommended Circular Nano I/O to AlphaLink Contact Arrangements*

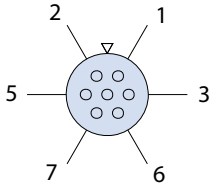
Receptacle Mating Face Views

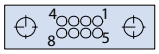
Size 1-4
4 Contacts



4 Contacts

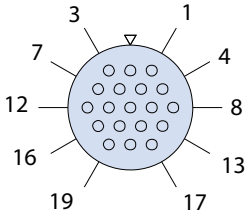
Size 1-7
7 Contacts

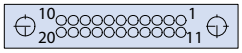




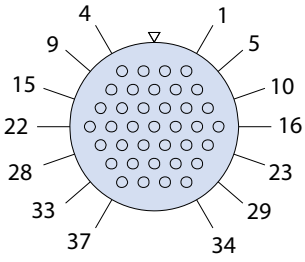
8 Contacts

Size 2-19
19 Contacts

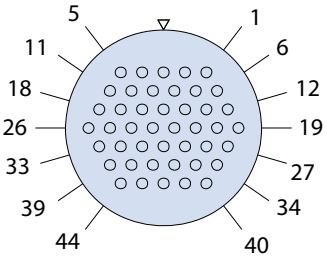




20 Contacts

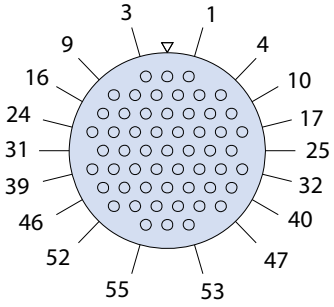


Size 3-37
37 Contacts



Size 4-44
44 Contacts

40 Contacts

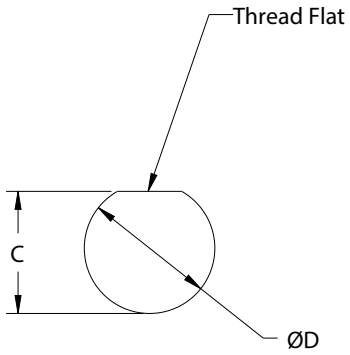


Size 4-55
55 Contacts

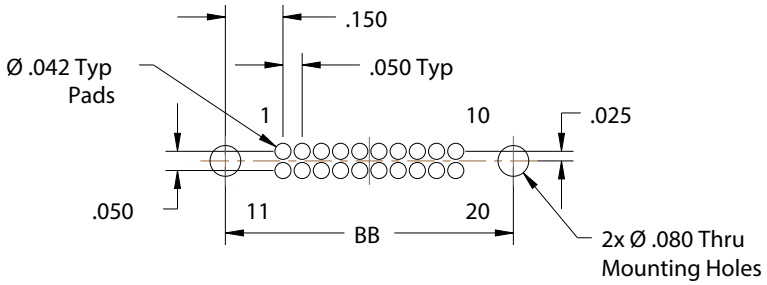
* These are recommended contact arrangements only, but do offer best availability. Contacts are mapped 1-to-1 from I/O to B/L connector (unused B/L contacts not connected). For alternative wire schedules, please consult factory.

To optimize the 40-contact AlphaLink board level connector, 40 contacts of a 44- or 55-contact size Circular Nanominiature connector can be used.

Contact arrangements • materials and finishes • dimensions • PCB layout • panel cutout

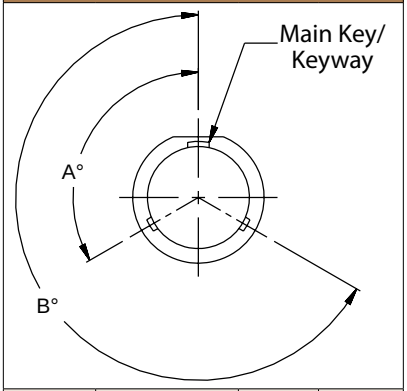


Panel Cut-Out



Recommended PCB Layout

Key Positions



Size	Polarization	A°	B°
1-4	N	150	210
	A	75	210
1-7	N	95	230
	A	140	275
2-19	N	150	210
	A	75	210
3-37	N	150	210
	A	75	210
4-44	N	150	210
	A	75	210
4-55	N	95	230
	A	140	275

Table I: I/O Panel Mount Dimensions

Arrangement	C +.002/-.001	ØD +.002/-.001
4	0.260 (6.6)	0.280 (7.1)
7	0.260 (6.6)	0.280 (7.1)
19	0.318 (8.1)	0.340 (8.6)
37	0.361 (9.2)	0.378 (9.6)
44	0.401 (10.2)	0.420 (10.7)
55	0.401 (10.2)	0.420 (10.7)

Table II: B/L AlphaLink Layout and Dimensions

No. of contacts	AA	BB
4	0.527 (13.4)	0.350 (8.9)
8	0.627 (15.9)	0.450 (11.4)
10	0.677 (17.2)	0.500 (12.7)
12	0.727 (18.5)	0.550 (14.0)
16	0.827 (21.0)	0.650 (16.5)
20	0.927 (23.5)	0.750 (19.1)
24	1.027 (26.1)	0.850 (21.6)
28	1.127 (28.6)	0.950 (24.1)
30	1.177 (29.9)	1.000 (25.4)
32	1.227 (31.2)	1.050 (26.7)
36	1.327 (33.7)	1.150 (29.2)
40	1.427 (36.2)	1.250 (31.8)

I/O Shell Material/Finish

Sym	Material	Finish
A2	Aluminum Alloy	Electroless Nickel
A5		Gold over Nickel
S1	Stainless Steel	Black Zinc Cobalt
S2		Passivate

Circular Nanominiature breakaway rear-panel-mount receptacle connector to AlphaLink® SL flex jumper

893-012

SERIES 89 CIRCULAR NANOMINIATURE INPUT/OUTPUT (I/O) BREAKAWAY RECEPTACLE TO ALPHALINK® SL SPRING LOADED CONTACT BOARD LEVEL (B/L) CONNECTOR

How To Order 893-012									
Sample Part Number	**893-012**	**-19**	**N**	**A2**	**-20**	**2**	**T**	**-12**	**S**
Series / Basic Part No.	Series 89 Circular Nanominiature Breakaway I/O receptacle to Series 171 AlphaLink® SL								
I/O Contact Arrangement	See Table I								
I/O Polarization	**N** = Normal **A** = Alternate								
I/O Shell and Spanner Nut Material and Finish	**A2** = Aluminum / Electroless Nickel **A5** = Aluminum / Gold over Nickel **S1** = Stainless Steel / Zinc Cobalt (Black) **S2** = Stainless Steel / Passivated								
AlphaLink® Layout	See Table II								
AlphaLink® Finish	**2** = Nickel **5** = Gold								
AlphaLink® Hardware Option	**Omit** for .080+/- clearance hole in body, #0-80 UNF-2B threaded thru hole **T** = #0-80 UNF-2B Threaded Thru in Body, Contersink Clearance Hole in Cover								
Assembly Length (L)	**3** = 3.00 ± .05 inches **6** = 6.00 ± .05 inches **12** = 12.00 ± .05 inches								
Optional Shielding	**S** = With shielding **Omit** for none								

MATERIALS AND FINISHES

B/L connector shell: Aluminum alloy.
I/O shell, jam nut: See P/N development
I/O Insulator: LCP
I/O O-ring: Fluorosilicone
I/O Contacts: Gold Alloy per ASTM B477 and ASTM B541
B/L Insulator: High-temperature thermoplastic rated UL94 V-0
B/L Contact: Copper Alloy/Gold Plated

NOTES

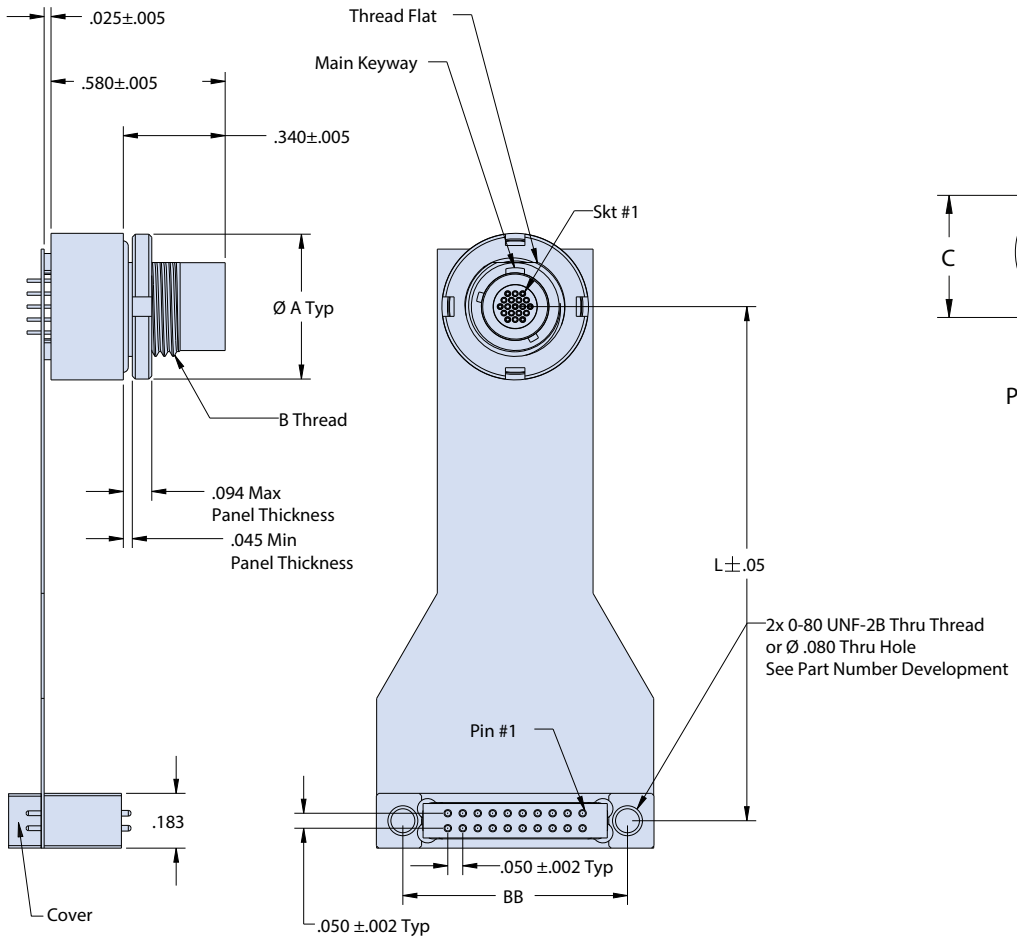
Input/Output Series 89 Nanominiature breakaway receptacle performance IAW MIL-DTL-32139
As a miniumum, assembly identified with date code, and Pin 1 identifier. Bag and tag with Glenair part number, CAGE code, and date code.
Contacts mapped 1-to-1 from I/O to B/L connector (unused B/L contacts not connected). For alternative wire schedules, please consult factory.
Unused Cavities in I/O panel mount connector to be populated with contacts.
B/L AlphaLink® SL interface dimensions IAW Glenair drawing 171-134-02. Interface shown for reference.
Unused cavities in B/L connector to be populated with contacts.
Flex Performance:
- Shielding - EMI shielding film will be used when shielding option is chosen
- Bend radius is 6 to 10 times the flex thickness.
- Typical flex will be .01 ± .005 thick, rugged, potted, polyimide-based flex.
- Flex cables are terminated from the I/O connector to the B/L connector on a 1 to 1 connection (unused B/L contacts are not connected)
- Workmanship shall be IAW IPC-6013, Class 2.

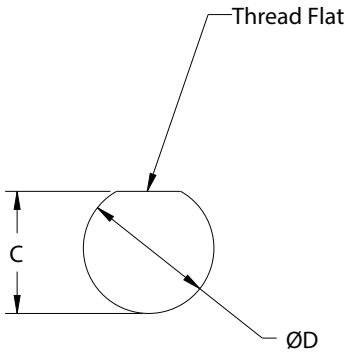
Consult factory for more options and/or special designs and requirements

Circular Nanominiature breakaway rear-panel-mount receptacle connector to AlphaLink SL flex jumper

893-012

I/O





Panel Cut-Out

B/L

Alpha Link
SL

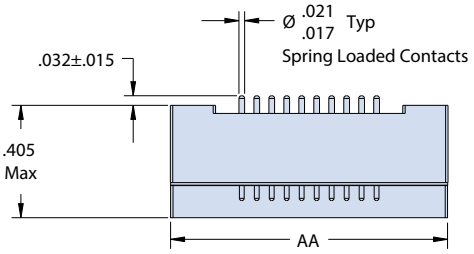


Table I: I/O Panel Mount Arrangement And Dimensions				
Arrangement	ØA	B Thread	C +.002/-.001	ØD +.002/-.001
4	0.429 (10.9)	M7.0 X 0.75-6G	0.260 (6.6)	0.280 (7.1)
7	0.429 (10.9)	M7.0 X 0.75-6G	0.260 (6.6)	0.280 (7.1)
19	0.488 (12.4)	M8.5 X 0.75-6G	0.318 (8.1)	0.340 (8.6)
37	0.528 (13.4)	M9.5 X 0.75-6G	0.361 (9.2)	0.378 (9.6)
44	0.567 (14.4)	M10.5 X 0.75-6G	0.401 (10.2)	0.420 (10.7)
55	0.567 (14.4)	M10.5 X 0.75-6G	0.401 (10.2)	0.420 (10.7)

Table II: B/L AlphaLink Layout and Dimensions		
No. of contacts	AA	BB
4	0.527 (13.4)	0.350 (8.9)
8	0.627 (15.9)	0.450 (11.4)
10	0.677 (17.2)	0.500 (12.7)
12	0.727 (18.5)	0.550 (14.0)
16	0.827 (21.0)	0.650 (16.5)
20	0.927 (23.5)	0.750 (19.1)
24	1.027 (26.1)	0.850 (21.6)
28	1.127 (28.6)	0.950 (24.1)
30	1.177 (29.9)	1.000 (25.4)
32	1.227 (31.2)	1.050 (26.7)
36	1.327 (33.7)	1.150 (29.2)
40	1.427 (36.2)	1.250 (31.8)

Circular Nanominiature threaded coupling rear-panel-mount receptacle connector to AlphaLink® SL flex jumper

893-013

SERIES 89 CIRCULAR NANOMINIATURE INPUT/OUTPUT (I/O) THREADED-COUPLING RECEPTACLE TO ALPHALINK® SL SPRING LOADED CONTACT BOARD LEVEL (B/L) CONNECTOR

How To Order 893-013									
Sample Part Number	**893-013**	**-19**	**N**	**A2**	**-20**	**2**	**T**	**-12**	**S**
Series / Basic Part No.	Series 89 Circular Nanominiature Threaded Coupling I/O receptacle to Series 171 AlphaLink® SL								
I/O Contact Arrangement	See Table I								
I/O Polarization	**N** = Normal **A** = Alternate								
I/O Shell and Spanner Nut Material and Finish	**A2** = Aluminum / Electroless Nickel **A5** = Aluminum / Gold over Nickel **S1** = Stainless Steel / Zinc Cobalt (Black) **S2** = Stainless Steel / Passivated								
AlphaLink® Layout	See Table II								
AlphaLink® Finish	**2** = Nickel **5** = Gold								
AlphaLink® Hardware Option	**Omit** for .080+/- clearance hole in body, #0-80 UNF-2B threaded thru hole **T** = #0-80 UNF-2B Threaded Thru in Body, Contersink Clearance Hole in Cover								
Assembly Length (L)	**3** = 3.00 ± .05 inches **6** = 6.00 ± .05 inches **12** = 12.00 ± .05 inches								
Optional Shielding	**S** = With shielding **Omit** for none								

MATERIALS AND FINISHES

B/L connector shell: Aluminum alloy.
I/O shell, jam nut: See P/N development
I/O Insulator: LCP
I/O O-ring: Fluorosilicone
I/O Contacts: Gold Alloy per ASTM B477 and ASTM B541
B/L Insulator: High-temperature thermoplastic rated UL94 V-0
B/L Contact: Copper Alloy/Gold Plated

NOTES

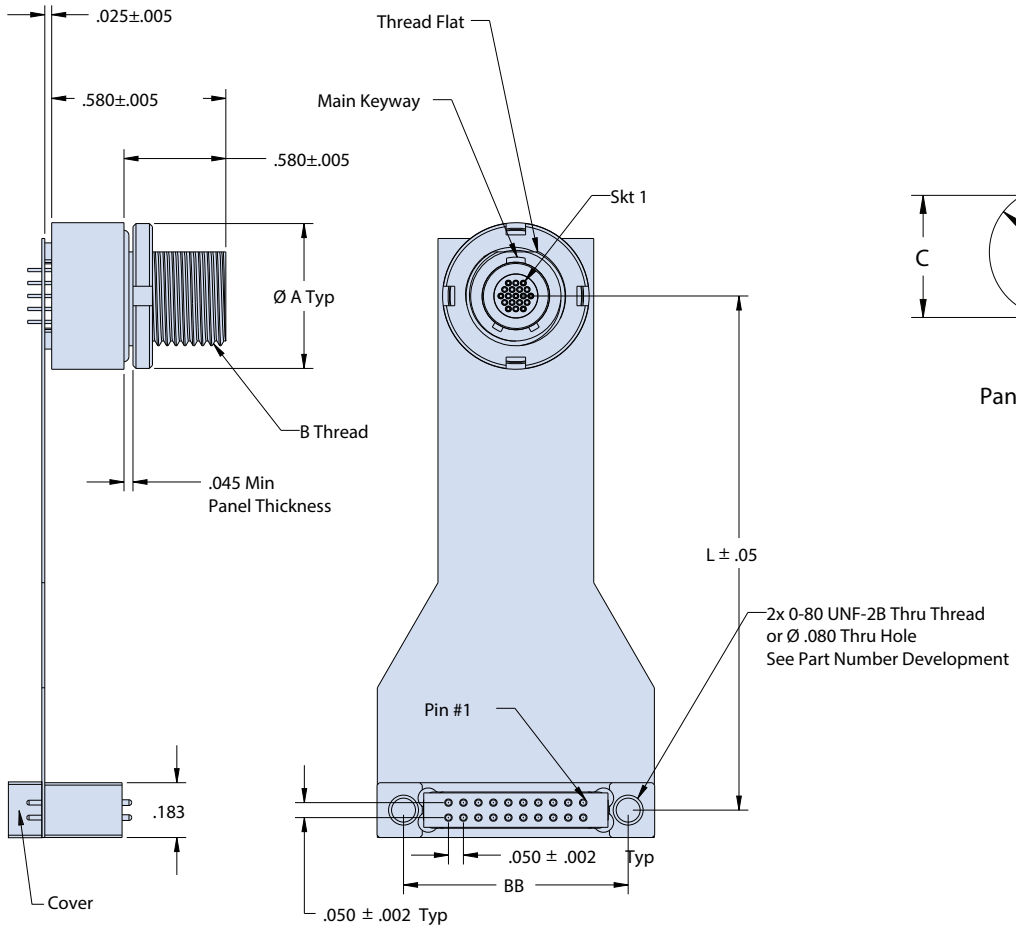
Input/Output Series 89 Nanominiature breakaway receptacle performance IAW MIL-DTL-32139
As a miniumum, assembly identified with date code, and Pin 1 identifier. Bag and tag with Glenair part number, CAGE code, and date code.
Contacts mapped 1-to-1 from I/O to B/L connector (unused B/L contacts not connected). For alternative wire schedules, please consult factory.
Unused Cavities in I/O panel mount connector to be populated with contacts.
B/L AlphaLink® SL interface dimensions IAW Glenair drawing 171-134-02. Interface shown for reference.
Unused cavities in B/L connector to be populated with contacts.
Flex Performance:
- Shielding - EMI shielding film will be used when shielding option is chosen
- Bend radius is 6 to 10 times the flex thickness.
- Typical flex will be .01 ± .005 thick, rugged, potted, polyimide-based flex.
- Flex cables are terminated from the I/O connector to the B/L connector on a 1 to 1 connection (unused B/L contacts are not connected)
- Workmanship shall be IAW IPC-6013, Class 2.

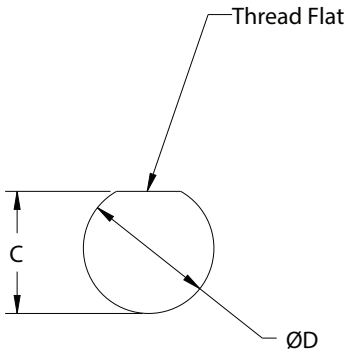
Consult factory for more options and/or special designs and requirements

Circular Nanominiature threaded coupling rear-panel-mount receptacle connector to AlphaLink SL flex jumper

893-013

I/O





Panel Cut-Out

B/L

Alpha Link SL

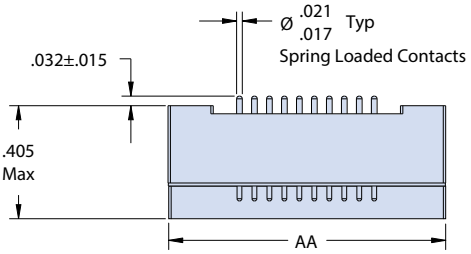


Table I: I/O Panel Mount Arrangement And Dimensions

Arrangement	ØA	B Thread	C +.002/-.001	ØD +.002/-.001
4	0.429 (10.9)	M7.0 X 0.75-6G	0.260 (6.6)	0.280 (7.1)
7	0.429 (10.9)	M7.0 X 0.75-6G	0.260 (6.6)	0.280 (7.1)
19	0.488 (12.4)	M8.5 X 0.75-6G	0.318 (8.1)	0.340 (8.6)
37	0.528 (13.4)	M9.5 X 0.75-6G	0.361 (9.2)	0.378 (9.6)
44	0.567 (14.4)	M10.5 X 0.75-6G	0.401 (10.2)	0.420 (10.7)
55	0.567 (14.4)	M10.5 X 0.75-6G	0.401 (10.2)	0.420 (10.7)

Table II: B/L AlphaLink Layout and Dimensions

No. of contacts	AA	BB
4	0.527 (13.4)	0.350 (8.9)
8	0.627 (15.9)	0.450 (11.4)
10	0.677 (17.2)	0.500 (12.7)
12	0.727 (18.5)	0.550 (14.0)
16	0.827 (21.0)	0.650 (16.5)
20	0.927 (23.5)	0.750 (19.1)
24	1.027 (26.1)	0.850 (21.6)
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30	1.177 (29.9)	1.000 (25.4)
32	1.227 (31.2)	1.050 (26.7)
36	1.327 (33.7)	1.150 (29.2)
40	1.427 (36.2)	1.250 (31.8)

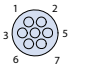
SuperFly® to AlphaLink® flex jumper

SuperFly® to AlphaLink® Flex Jumpers

Glenair Series 88 SuperFly™ Cordsets represent a perfect storm of high-performance contacts, shells, wires, termination and mating technologies. SuperFly™ combines the weight-saving and performance advantages of nanominiature contacts in a precision package made to order for battlefield and other high-performance applications. Now available in turnkey flex jumper format for easy integration in printed circuit board applications, each SuperFly jumper ships with rugged Polyimide-based flex terminated to your choice of threaded or quick disconnect coupling SuperFly and an AlphaLink® SL board level connector.

D

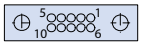
Recommended SuperFly I/O to AlphaLink Contact Arrangements*



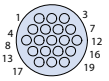
B7N

8 Contacts

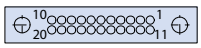
C10N



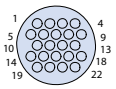
10 Contacts



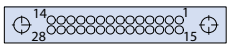
E19N



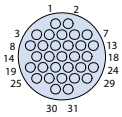
20 Contacts



F22N

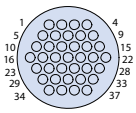


28 Contacts

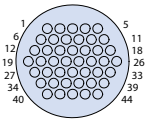


G31N

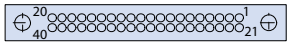
32 Contacts



H37N



J44N

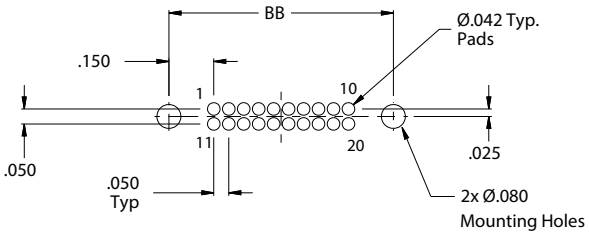


40 Contacts

To optimize the 40-contact AlphaLink board level connector, 40 contacts of a 44-contact size SuperFly connector can be used.

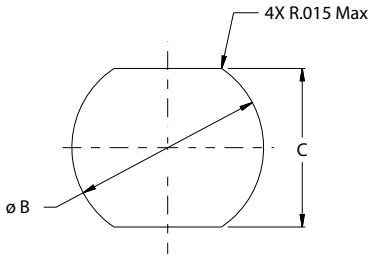
* These are recommended contact arrangements only, but do offer best availability. Contacts are mapped 1-to-1 from I/O to B/L connector (unused B/L contacts not connected). For alternative wire schedules, please consult factory.

Contact arrangements • materials and finishes • dimensions • PCB layout • panel cutout



Recommended PCB Layout

(See Table V)



Recommended Panel Cutout

(See Table IV)

D

Table I - I/O Material/Finish		
Sym	**Material**	**Finish**
M	Aluminum Alloy	Electroless Nickel
ZR		Black Zinc-Nickel over Electroless Nickel
MT		Nickel-PTFE
NF		Olive drab over Cadmium
ZC	Stainless Steel	Black Zinc Cobalt
ZK		Passivate
ZMT		Nickel Fluoropolymer

Table III - Available I/O Insert Arrangement and B/L Assembly Pairs*			
Ins. Arr.	**I/O Contact**		**B/L Layout**
	Size	**Qty**	
B7N	Nano	7	8
C10N	Nano	10	10
E19N	Nano	19	20
F22N	Nano	22	28
G31N	Nano	31	32
H37N	Nano	37	40
J44N	Nano	44	40

* Contacts mapped 1-to-1 from I/O to B/L connector (unused B/L contacts not connected). For alternative wire schedules, please consult factory.

Table IV - I/O Connector Panel Cutout Dimensions			
Shell Size	**Ø A**	**Ø B**	**C Flats**
B	.392 (10.0)	.283 (7.2)	.241 (6.1)
C	.412 (10.5)	.305 (7.7)	.261 (6.6)
E	.451 (11.5)	.344 (8.7)	.300 (7.6)
F	.471 (12.0)	.364 (9.2)	.320 (8.1)
G	.490 (12.4)	.383 (9.7)	.340 (8.6)
H	.530 (13.5)	.349 (8.9)	.379 (9.6)
J	.569 (14.5)	.459 (11.7)	.418 (10.6)

Table V - B/L Connector Dimensions		
Layout	**AA**	**BB**
4	.527 (13.4)	.350 (8.9)
8	.627 (15.9)	.450 (11.4)
10	.677 (17.2)	.500 (12.7)
16	.827 (21.0)	.650 (16.5)
20	.927 (23.5)	.750 (19.1)
28	1.127 (28.6)	.950 (24.1)
32	1.227 (31.2)	1.050 (26.7)
40	1.427 (36.2)	1.250 (31.8)

SuperFly quick-disconnect rear-panel-mount receptacle connector to AlphaLink® SL flex jumper

880-034

SERIES 88 SUPERFLY INPUT/OUTPUT (I/O) QDC RECEPTACLE TO ALPHALINK® SL SPRING LOADED CONTACT BOARD LEVEL (B/L) CONNECTOR

How To Order 880-034								
Sample Part Number	**880-034R**	**A**	**-F22N**	**-M**	**-2**	**T**	**-6**	**S**
Series / Basic Part No.	Series 88 SuperFly QDC I/O receptacle to Series 171 AlphaLink® SL							
I/O Insert Configuration	**A** = Unshrouded contacts (e.g. Nano socket) **B** = Shrouded contacts (e.g. Nano TwistPin)							
I/O Shell Size / Contact Arrangement	**B7N**, **C10N**, **E19N**, **F22N**, **G31N**, **H37N**, **J44N** (See Contact Arrangements and Table III, page 16 – 17)							
I/O Shell Material/Finish	(See Table I)							
AlphaLink® Finish	**2** = Nickel **5** = Gold							
AlphaLink® Hardware Option	**T** = Threaded thru hole **Omit** for thru hole							
Assembly Length (L)	**3** = 3.00 ± .05 inches **6** = 6.00 ± .05 inches **12** = 12.00 ± .05 inches							
Optional Shielding	**S** = With shielding **Omit** for none							

D

Table I - I/O Material/Finish		
Sym	**Material**	**Finish**
M	Aluminum Alloy	Electroless Nickel
ZR		Black Zinc-Nickel over Electroless Nickel
MT		Nickel-PTFE
NF		Olive drab over Cadmium
ZC	Stainless Steel	Black Zinc Cobalt
ZK		Passivate
ZMT		Nickel Fluoropolymer

MATERIALS AND FINISHES

B/L connector shell: Aluminum alloy. I/O shell, jam nut: See Table I
Insulator: High-temperature thermoplastic rated UL94 V-0
Seals, grommet, O-ring: Fluorosilicone or equivalent
Contacts: Copper Alloy/Gold Plated
Potting: Epoxy

NOTES

Input/Output Series 88 SuperFly quick-disconnect receptacle:
- I/O connector will mate with all plug QDC SuperFly connectors with same polarization and opposite insert configuration.
- Insert arrangement per 889-001. See page 16 and 17, Table III for available arrangements. Unshrouded configurations are opposite of shrouded.
- Contacts mapped 1-to-1 from I/O to B/L connector (unused B/L contacts not connected). For alternative wire schedules, please consult factory.
- See 880-032 for other connector dimensions

Board Level AlphaLink® SL connector:
- B/L AlphaLink® SL connectors are built in accordance with Glenair drawing 171-134-02
- B/L connectors are paired with I/O connectors as shown on Table III

Flex Performance:
- Shielding - EMI shielding film.
- Bend radius is 6 to 10 times the flex thickness.
- Typical flex will be .01 ± .005 thick, rugged, potted, polyimide-based flex.
- Flex cables are terminated from the I/O connector to the B/L connector on a 1 to 1 connection (unused B/L contacts are not connected)
- Workmanship shall be IAW IPC-6013, Class 2.

Consult factory for more options and/or special designs and requirements

SuperFly quick-disconnect rear-panel-mount receptacle connector to AlphaLink® SL flex jumper

880-034

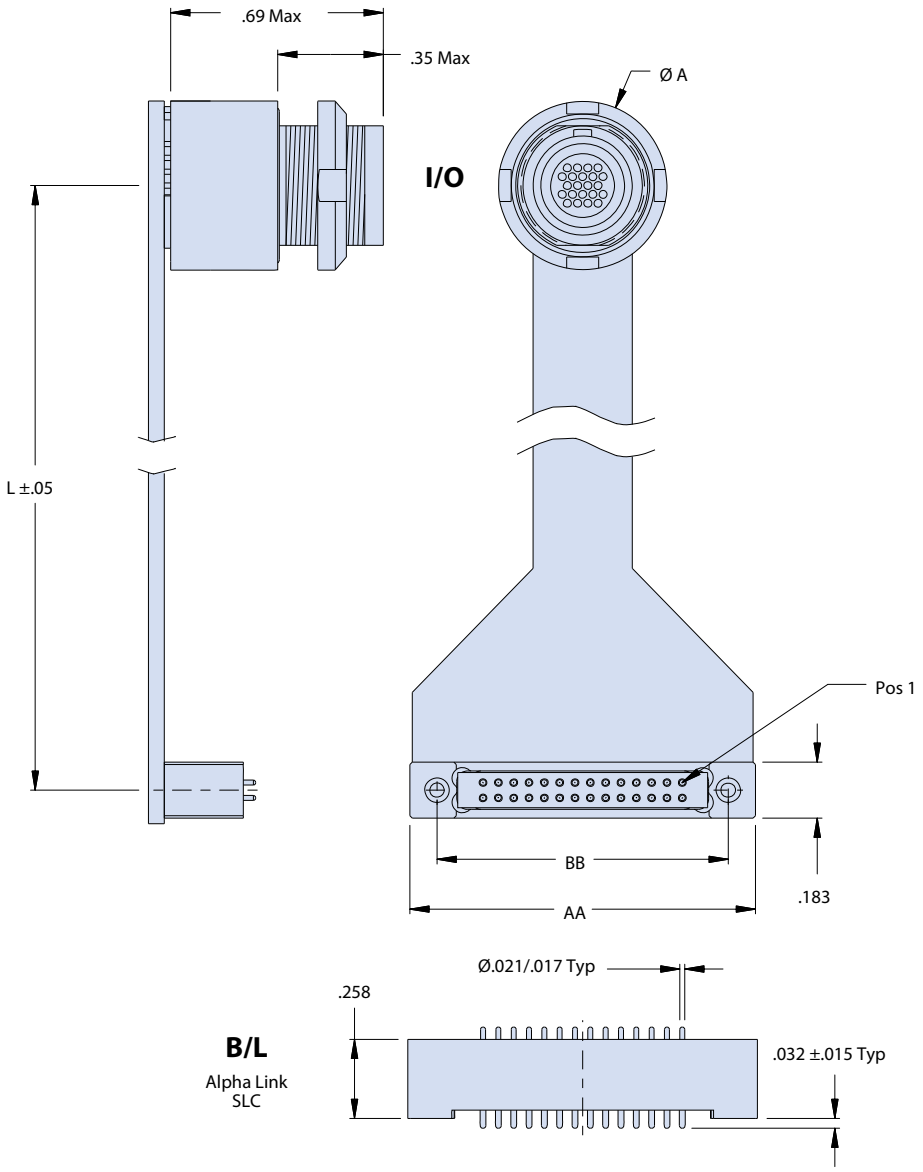


Table IV - I/O Connector Dimensions			
Shell Size	Ø A	Ø B	C Flats
B	.392 (10.0)	.283 (7.2)	.241 (6.1)
C	.412 (10.5)	.305 (7.7)	.261 (6.6)
E	.451 (11.5)	.344 (8.7)	.300 (7.6)
F	.471 (12.0)	.364 (9.2)	.320 (8.1)
G	.490 (12.4)	.383 (9.7)	.340 (8.6)
H	.530 (13.5)	.349 (8.9)	.379 (9.6)
J	.569 (14.5)	.459 (11.7)	.418 (10.6)

Table V - B/L Connector Dimensions		
Layout	AA	BB
4	.527 (13.4)	.350 (8.9)
8	.627 (15.9)	.450 (11.4)
10	.677 (17.2)	.500 (12.7)
16	.827 (21.0)	.650 (16.5)
20	.927 (23.5)	.750 (19.1)
28	1.127 (28.6)	.950 (24.1)
32	1.227 (31.2)	1.050 (26.7)
40	1.427 (36.2)	1.250 (31.8)

SuperFly threaded rear-panel-mount receptacle connector to AlphaLink® SL flex jumper

881-021

SERIES 88 SUPERFLY INPUT/OUTPUT (I/O) THREADED RECEPTACLE TO ALPHALINK® SL SPRING LOADED CONTACT BOARD LEVEL (B/L) CONNECTOR

How To Order 881-021								
Sample Part Number	**881-021R**	**A**	**-F22N**	**-M**	**-2**	**T**	**-6**	**S**
Series / Basic Part No.	Series 88 SuperFly QDC I/O receptacle to Series 171 AlphaLink® SL							
I/O Insert Configuration	**A** = Unshrouded contacts (e.g. Nano socket) **B** = Shrouded contacts (e.g. Nano TwistPin)							
I/O Shell Size / Contact Arrangement	**B7N**, **C10N**, **E19N**, **F22N**, **G31N**, **H37N**, **J44N** (See Contact Arrangements and Table III, page 16 – 17)							
I/O Shell Material/Finish	(See Table I)							
AlphaLink® Finish	**2** = Nickel **5** = Gold							
AlphaLink® Hardware Option	**T** = Threaded thru hole **Omit** for thru hole							
Assembly Length (L)	**3** = 3.00 ± .05 inches **6** = 6.00 ± .05 inches **12** = 12.00 ± .05 inches							
Optional Shielding	**S** = With shielding **Omit** for none							

D

Table I - I/O Material/Finish		
Sym	**Material**	**Finish**
M	Aluminum Alloy	Electroless Nickel
ZR		Black Zinc-Nickel over Electroless Nickel
MT		Nickel-PTFE
NF		Olive drab over Cadmium
ZC	Stainless Steel	Black Zinc Cobalt
ZK		Passivate
ZMT		Nickel Fluoropolymer

MATERIALS AND FINISHES

B/L connector shell: Aluminum alloy. I/O shell, jam nut: See Table I
Insulator: High-temperature thermoplastic rated UL94 V-0
Seals, grommet, O-ring: Fluorosilicone or equivalent
Contacts: Copper Alloy/Gold Plated
Potting: Epoxy

NOTES

Input/Output Series 88 SuperFly threaded receptacle:
- I/O connector will mate with all plug threaded SuperFly connectors with same polarization and opposite insert configuration.
- Insert arrangement per 889-001. See page 16 and 17, Table III for available arrangements. Unshrouded configurations are opposite of shrouded.
- Contacts mapped 1-to-1 from I/O to B/L connector (unused B/L contacts not connected). For alternative wire schedules, please consult factory.
- See 881-019 for other connector dimensions

Board Level AlphaLink® SL connector:
- B/L AlphaLink® SL connectors are built in accordance with Glenair drawing 171-134-02
- B/L connectors are paired with I/O connectors as shown on Table III

Flex Performance:
- Shielding - EMI shielding film.
- Bend radius is 6 to 10 times the flex thickness.
- Typical flex will be .01 ± .005 thick, rugged, potted, polyimide-based flex.
- Flex cables are terminated from the I/O connector to the B/L connector on a 1 to 1 connection (unused B/L contacts are not connected)
- Workmanship shall be IAW IPC-6013, Class 2.

Consult factory for more options and/or special designs and requirements

SuperFly threaded rear-panel-mount receptacle connector to AlphaLink® SL flex jumper

881-021

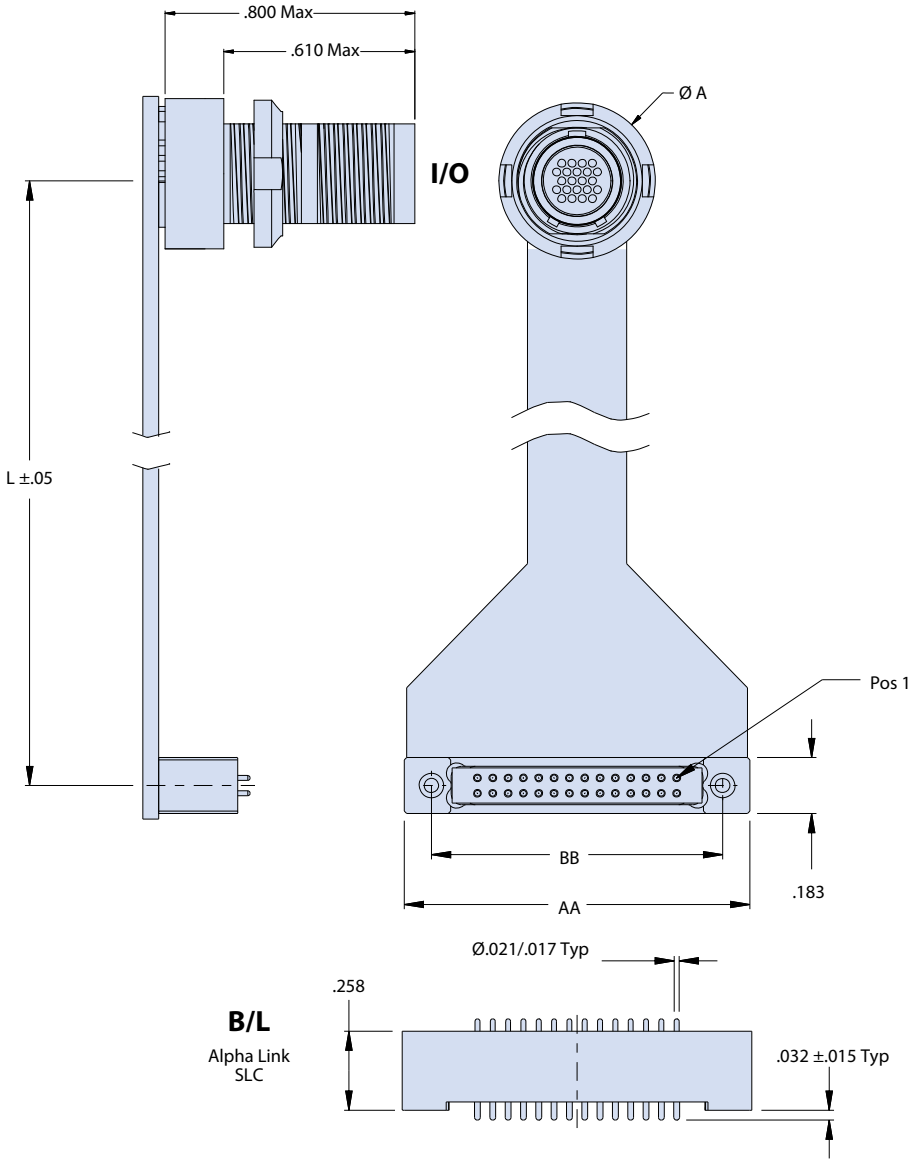


Table IV - I/O Connector Dimensions			
Shell Size	Ø A	Ø B	C Flats
B	.392 (10.0)	.283 (7.2)	.241 (6.1)
C	.412 (10.5)	.305 (7.7)	.261 (6.6)
E	.451 (11.5)	.344 (8.7)	.300 (7.6)
F	.471 (12.0)	.364 (9.2)	.320 (8.1)
G	.490 (12.4)	.383 (9.7)	.340 (8.6)
H	.530 (13.5)	.349 (8.9)	.379 (9.6)
J	.569 (14.5)	.459 (11.7)	.418 (10.6)

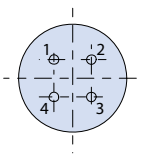
Table V - B/L Connector Dimensions		
Layout	AA	BB
4	.527 (13.4)	.350 (8.9)
8	.627 (15.9)	.450 (11.4)
10	.677 (17.2)	.500 (12.7)
16	.827 (21.0)	.650 (16.5)
20	.927 (23.5)	.750 (19.1)
28	1.127 (28.6)	.950 (24.1)
32	1.227 (31.2)	1.050 (26.7)
40	1.427 (36.2)	1.250 (31.8)

Mighty Mouse to AlphaLink Flex Jumpers

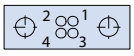
Glenair Series 801 double-start ACME thread and Series 804 quick-disconnect Mighty Mouse receptacles in 8 contact arrangements terminated with rugged polyimide-based flex to high-performance AlphaLink SL board level connectors.

Mighty Mouse to AlphaLink flex jumper

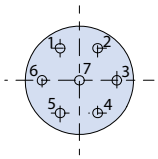
Recommended Mighty Mouse I/O to AlphaLink Contact Arrangements*



6-4



4 Contacts



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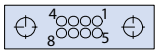
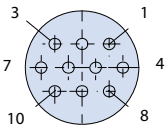
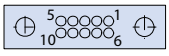


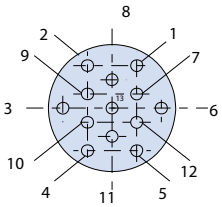
8 Contacts



7-10



10 Contacts



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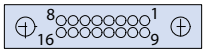
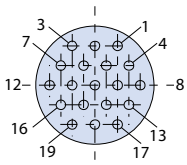


16 Contacts



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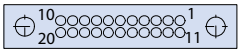
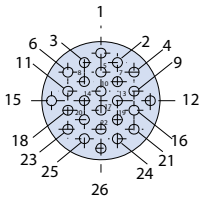
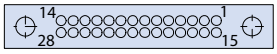


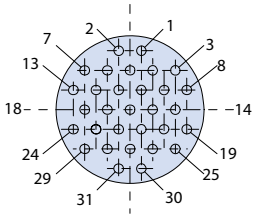
20 Contacts



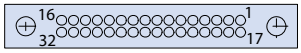
10-26



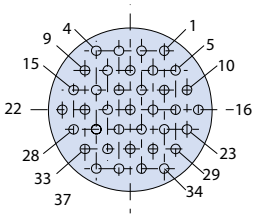
28 Contacts



11-31



32 Contacts



12-37
(13-37)

40 Contacts

* These are recommended contact arrangements only, but do offer best availability. Contacts are mapped 1-to-1 from I/O to B/L connector (unused B/L contacts not connected). For alternative wire schedules, please consult factory.

Contact arrangements • dimensions • alternate key positions

Table IV
Available I/O Insert Arrangement and B/L Assembly Pairs*

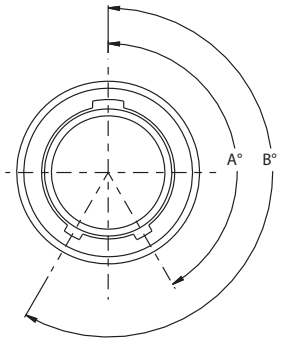
Ins. Arr.	I/O Contact		B/L Layout
	Size	Qty	
6-4	23	4	4
6-7	23	7	8
7-10	23	10	10
8-13	23	13	16
9-19	23	19	20
10-26	23	26	28
11-31	23	31	32
12-37/13-37	23	37	40

* Contacts mapped 1-to-1 from I/O to B/L connector (unused B/L contacts not connected). For alternative wire schedules, please consult factory.

Table V - B/L Connector Dimensions

Layout	AA	BB
4	.527 (13.4)	.350 (8.9)
8	.627 (15.9)	.450 (11.4)
10	.677 (17.2)	.500 (12.7)
16	.827 (21.0)	.650 (16.5)
20	.927 (23.5)	.750 (19.1)
28	1.127 (28.6)	.950 (24.1)
32	1.227 (31.2)	1.050 (26.7)
40	1.427 (36.2)	1.250 (31.8)

Table VII
I/O Connector Alternate Key and Keyway Position



Position	A°	B°
A	150°	210°
B	75°	210°
C	95°	230°
D	140°	275°
E	75°	275°
F	95°	210°

MATERIALS AND FINISHES

B/L connector shell: Aluminum alloy. I/O shell, jam nut: See Table I
Insulator: High-temperature thermoplastic rated UL94 V-0
Seals, grommet, O-ring: Fluorosilicone
Contacts: Copper Alloy/Gold Plated
Potting: Epoxy

NOTES

Input/Output Series 801 and 804 Mighty Mouse connectors:
- I/O connector will mate with all quick-coupling high density plug connectors with same polarization and opposite contact gender

Contacts mapped 1-to-1 from I/O to B/L connector (unused B/L contacts not connected). For alternative wire schedules, please consult factory.

Board Level AlphaLink® SL connector:
- B/L AlphaLink® SL connectors are built in accordance with Glenair drawing 171-134-02
- B/L connectors are paired with I/O connectors as shown on Table IV

Flex Performance:
- Shielding - EMI shielding film.
- Bend radius is 6 to 10 times the flex thickness.
- Typical flex will be .01 ± .005 thick, rugged, potted, polyimide-based flex.
- Flex cables are terminated from the I/O connector to the B/L connector on a 1 to 1 connection (unused B/L contacts are not connected)
- Workmanship shall be IAW IPC-6013, Class 2.

Consult factory for more options and/or special designs and requirements

Rear-panel-mount environmental double-start ACME thread connector to AlphaLink SL flex jumper

801-110

SERIES 801 MIGHTY MOUSE INPUT/OUTPUT (I/O) JAM NUT OR SQUARE FLANGE RECEPTACLE TO ALPHALINK SL SPRING LOADED CONTACT BOARD LEVEL (B/L) CONNECTOR

How To Order 801-110										
Sample Part Number	**801-110**	**-07**	**NF**	**10-26**	**P**	**A**	**-2**	**T**	**-6**	**S**
Series / Basic Part No.	Series 801 Mighty Mouse I/O receptacle to Series 171 AlphaLink SL									
I/O Connector Style	**02** = Square flange receptacle **07** = Jam nut receptacle									
I/O Material / Finish	See Table I									
I/O Insert Arrangement	**6-4**, **6-7**, **7-10**, **8-13**, **9-19**, **10-26**, **11-31**, **13-37** (See Table IV)									
I/O Contact Gender	**P** = Pin **S** = Socket									
I/O Alternate Polarization	**A**, **B**, **C**, **D**, **E**, **F** (See Table VII)									
AlphaLink Finish	**2** = Nickel **5** = Gold									
AlphaLink Hardware Option	**T** = Threaded thru hole **Omit** for thru hole									
Assembly Length	**3** = 3.00 ± .05 inches **6** = 6.00 ± .05 inches **12** = 12.00 ± .05 inches									
Optional Shielding	**S** = With shielding **Omit** for none									

E

Table VI - Series 801 I/O Connector Dimensions and Cutouts

Shell Size	A Sq	B Bsc	Ø C	Ø D	E Flat	F Flat	J Holes
6	.590 (15.0)	.423 (10.7)	.750 (19.1)	.635 (16.1)	.595 (15.1)	.410 (10.4)	.096 (2.4) .091 (2.3)
7	.650 (16.5)	.483 (12.3)	.850 (21.6)	.755 (19.2)	.723 (18.4)	.536 (13.6)	
8	.712 (18.1)	.545 (13.8)	.938 (23.8)	.755 (19.2)	.723 (18.4)	.536 (13.6)	
9	.850 (21.6)	.607 (15.4)	1.125 (28.6)	.830 (21.1)	.790 (20.1)	.596 (15.1)	.130 (3.3) .126 (3.2)
10	.890 (22.6)	.670 (17.0)	1.188 (30.2)	.890 (22.6)	.855 (21.7)	.658 (16.7)	
11	.935 (23.7)	.715 (18.2)	1.250 (31.8)	.960 (24.4)	.925 (23.5)	.718 (18.2)	
13	1.030 (26.2)	.812 (20.6)	1.375 (34.9)	1.078 (27.4)	1.044 (26.5)	.845 (21.5)	

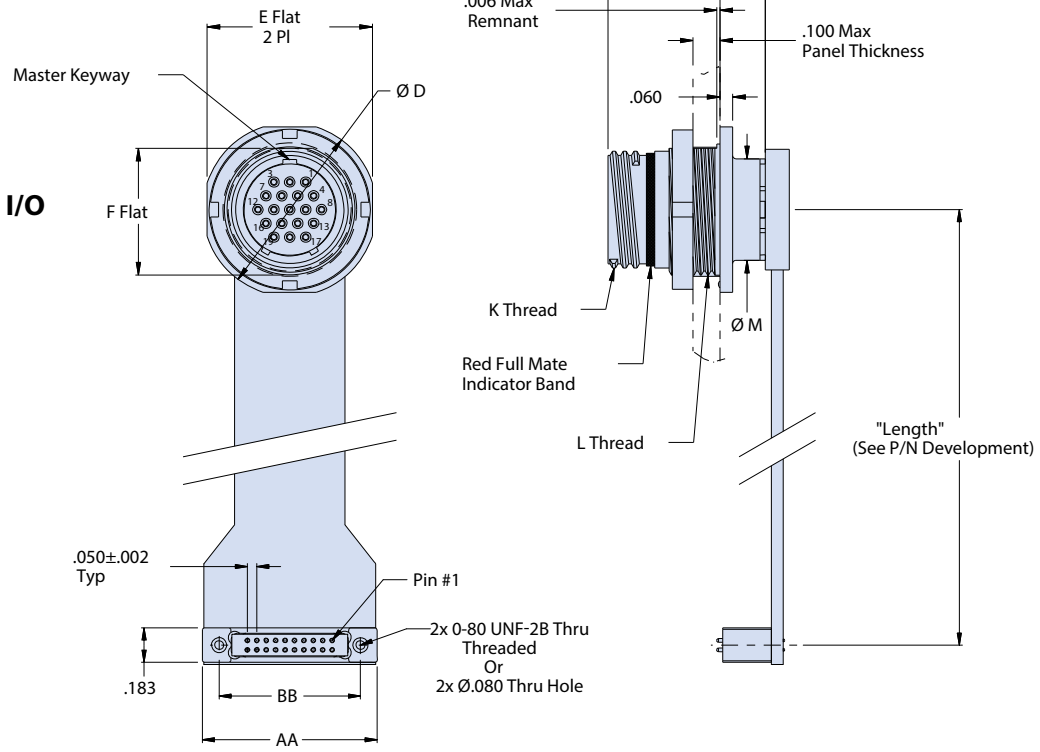
Table VI (continued) - Series 801 I/O Connector Dimensions and Cutouts

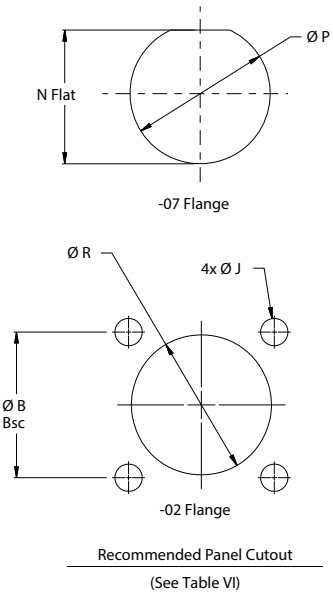
Shell Size	K Thread	L Thread	Ø M	N Flat	Ø P	Ø R
6	.3750-.05P-.1L-2A	.4375-28 UNEF-2A	.330 (8.4)	0.418 (10.6) 0.414 (10.5)	.448 (11.4)	.390 (9.9)
7	.4375-.05P-.1L-2A	.5625-32 UN-2A	.432 (11.0)	0.544 (13.8) 0.540 (13.7)	.573 (14.6)	.450 (11.4)
8	.5000-.05P-.1L-2A	.5625-32 UN-2A	.493 (12.5)	0.544 (13.8) 0.540 (13.7)	.573 (14.6)	.510 (13.0)
9	.5625-.05P-.1L-2A	.6250-28 UN-2A	.551 (14.0)	0.604 (15.3) 0.600 (15.2)	.635 (16.1)	.575 (14.6)
10	.6250-.05P-.1L-2A	.6875-28 UN-2A	.620 (15.7)	0.668 (17.0) 0.664 (16.9)	.698 (17.7)	.640 (16.3)
11	.6875-.05P-.1L-2A	.7500-28 UN-2A	.662 (16.8)	0.728 (18.5) 0.724 (18.4)	.760 (19.3)	.700 (17.8)
13	.8125-.1P-.2L-2A	.8750-28 UN-2A	.703 (17.9)	0.853 (21.7) 0.849 (21.6)	.885 (22.5)	.825 (21.0)

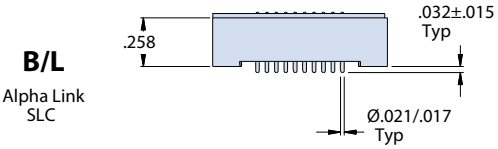
Rear-panel-mount environmental double-start ACME thread connector to AlphaLink SL flex jumper

801-110

07 - JAM NUT MOUNT I/O RECEPTACLE



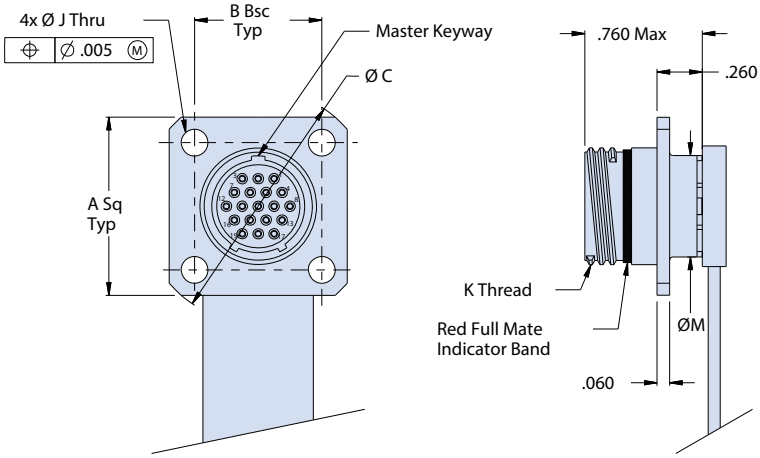




Tag/bag Label

(Part Number)
(Job Number)
Glenair 06324
1 Each D/C (YYWW)

02 - SQUARE FLANGE I/O RECEPTACLE



Rear-panel-mount environmental push-pull connector to AlphaLink SL flex jumper

804-110

SERIES 804 MIGHTY MOUSE INPUT/OUTPUT (I/O) JAM-NUT RECEPTACLE TO ALPHALINK SL SPRING LOADED CONTACT BOARD LEVEL (B/L) CONNECTOR

How To Order 804- 110										
Sample Part Number	**804-110**	**-07**	**NF**	**10-26**	**P**	**A**	**-2**	**T**	**-6**	**S**
Series / Basic Part No.	Series 804 Mighty Mouse I/O receptacle to Series 171 AlphaLink SL									
I/O Connector Style	**07** = Jam nut receptacle									
I/O Material / Finish	See Table I									
I/O Insert Arrangement	**6-4**, **6-7**, **7-10**, **8-13**, **9-19**, **10-26**, **11-31**, **13-37** (See Table IV)									
I/O Contact Gender	**P** = Pin **S** = Socket									
I/O Alternate Polarization	**A**, **B**, **C**, **D**, **E**, **F** (See Table VII)									
AlphaLink Finish	**2** = Nickel **5** = Gold									
AlphaLink Hardware Option	**T** = Threaded thru hole **Omit** for thru hole									
Assembly Length	**3** = 3.00 ± .05 inches **6** = 6.00 ± .05 inches **12** = 12.00 ± .05 inches									
Optional Shielding	**S** = With shielding **Omit** for none									

E

Table VI - Series 804 I/O Connector Dimensions and Cutouts

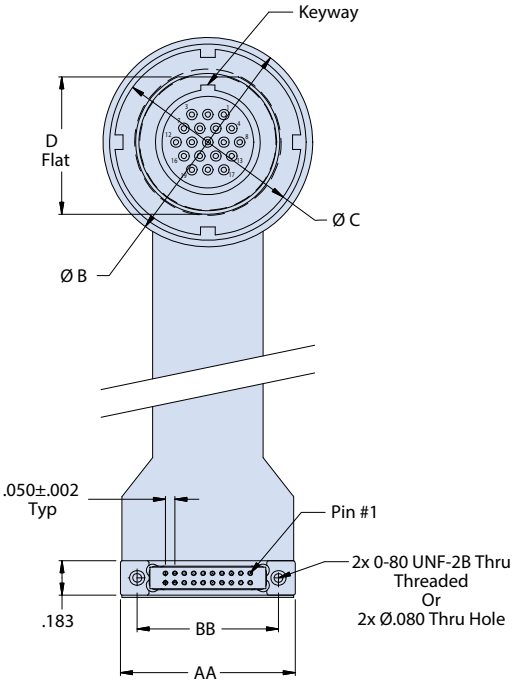
Shell Size	A Thread	Ø B	Ø C	D-Flat	Ø E	Ø F	M Flat	Ø N
6	.5000-32 UN-2A	.730 (18.5)	.625 (15.9)	.467 (11.9)	.330 (8.4)	.483 (12.3)	.479 (12.2) .475 (12.1)	.510 (13.0)
7	.6250-28 UN-2A	.910 (23.1)	.750 (19.1)	.594 (15.1)	.432 (11.0)	.570 (14.5)	.606 (15.4) .601 (15.3)	.635 (16.1)
8	.6250-28 UN-2A	.955 (24.3)	.750 (19.1)	.594 (15.1)	.493 (12.5)	.593 (15.1)	.606 (15.4) .601 (15.3)	.635 (16.1)
9	.6875-28 UN-2A	1.000 (25.4)	.812 (20.6)	.655 (16.6)	.551 (14.0)	.685 (17.4)	.667 (16.9) .663 (16.8)	.695 (17.7)
10	.7500-28 UN-2A	1.085 (27.6)	.875 (22.2)	.721 (18.3)	.620 (15.7)	.725 (18.4)	.734 (18.6) .729 (18.5)	.760 (19.3)
11	.8125-28 UN-2A	1.135 (28.8)	.938 (23.8)	.788 (20.0)	.662 (16.8)	.810 (20.6)	.801 (20.3) .796 (20.2)	.822 (20.9)
12	.8750-28 UN-2A	1.190 (30.2)	1.000 (25.4)	.843 (21.4)	.703 (17.9)	.850 (21.6)	.855 (21.7) .851 (21.6)	.885 (22.5)

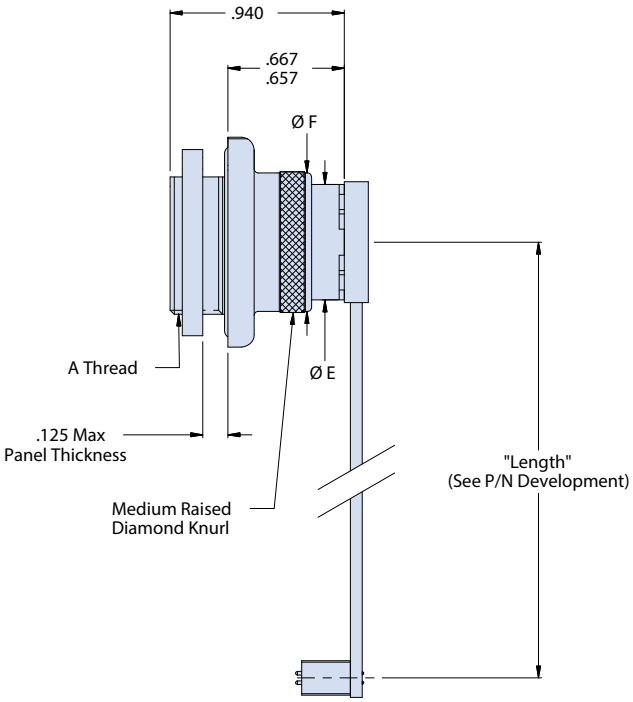
Rear-panel-mount environmental push-pull connector to AlphaLink SL flex jumper

804-110

07 - JAM NUT MOUNT I/O RECEPTACLE

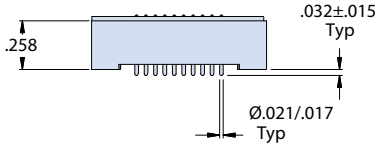
I/O





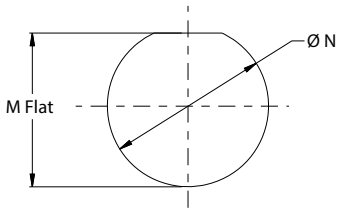
B/L

Alpha Link
SLC



Tag/bag Label

(Part Number)
(Job Number)
Glenair 06324
1 Each D/C (YYWW)



-07 Flange

Recommended Panel Cutout

(See Table VI)

E

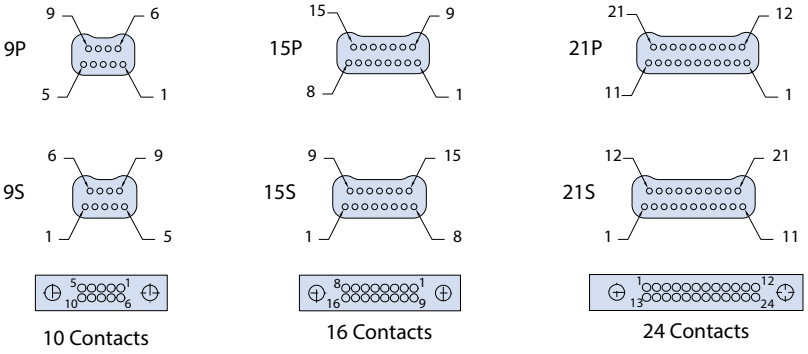
Contact arrangements

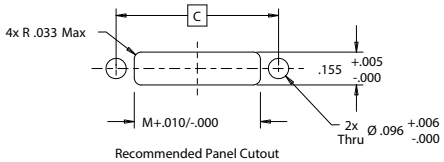
Rectangular Nano to AlphaLink Flex Jumpers

Glenair Series 89 Rectangular Nanominiature connectors available in 6 contact arrangements, terminated with rugged polyimide-based flex to AlphaLink board level connectors.

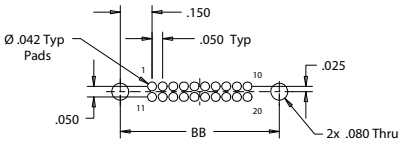
Rectangular Nano to AlphaLink flex jumper

Recommended Rectangular Nano I/O to AlphaLink Contact Arrangements*

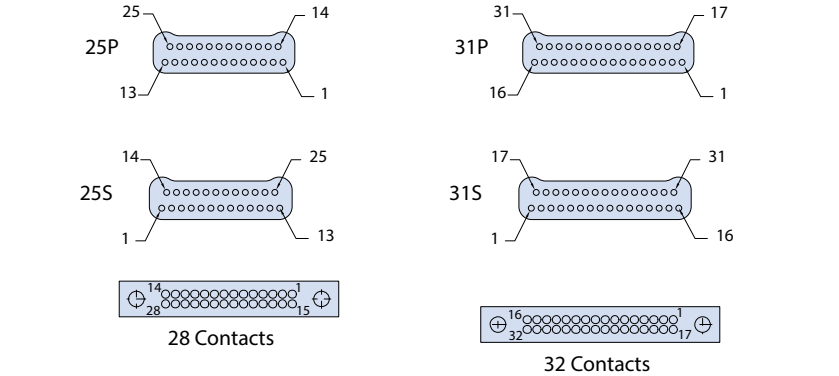


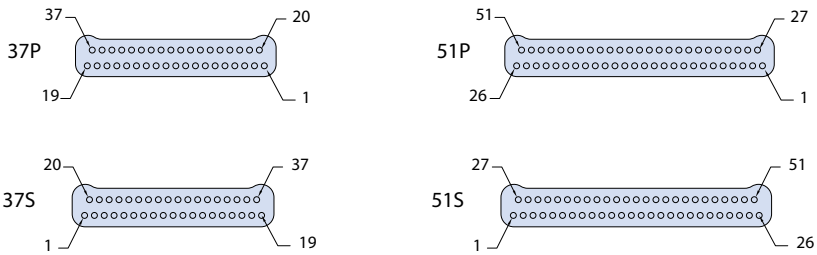


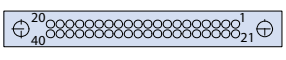
Recommended Panel Cutout



Recommended PCB Layout







40 Contacts

To optimize the 40-contact AlphaLink board level connector, 40 contacts of a 51-contact size Nano connector can be used.

* These are recommended contact arrangements only, but do offer best availability. Contacts are mapped 1-to-1 from I/O to B/L connector (unused B/L contacts not connected). For alternative wire schedules, please consult factory.

F

Rectangular Nanominiature rear-panel-mount connectors to AlphaLink® SL flex jumper

891-041 • How to order

SERIES 89 RECTANGULAR NANOMINIATURE INPUT/OUTPUT (I/O) REAR PANEL MOUNT CONNECTORS TO ALPHALINK® SL SPRING LOADED CONTACT BOARD LEVEL (B/L) CONNECTOR

How To Order 891-041										
Sample Part Number	**891-041**	**-19**	**P**	**S**	**01**	**-28**	**2**	**T**	**-12**	**S**
Series / Basic Part No.	Series 89 Rectangular Nanominiaturerear panel mount V/PTH to Series 171 AlphaLink® SL									
I/O Contact Arrangement	See Table I									
Contact Type	**P** = Plug (See Table I) **S** = Receptacle (See Table III)									
I/O Shell Material and Finish	**S** = Stainless Steel, Passivated **T** = Titanium, Unplated									
I/O Gasket Material	**Omit** for no Gasket **01** = Fluorosilicone IAW MIL-DTL-25988, Type II, Class I, Grade 70 **02** = Passivated Silver-Plated Aluminum filled Fluorosilicone IAW MIL-DTL-83528, Type "D" (CHO-Seal 1298 or equivalent)									
AlphaLink® Layout	See Table II									
AlphaLink® Finish	**2** = Nickel **5** = Gold									
AlphaLink® Hardware Option	**T** = Threaded thru hole **Omit** for thru hole									
Assembly Length (L)	**3** = 3.00 ± .05 inches **6** = 6.00 ± .05 inches **12** = 12.00 ± .05 inches									
Optional Shielding	**S** = With shielding **Omit** for none									

F

MATERIALS AND FINISHES

B/L connector shell: Aluminum alloy.
I/O shell: See P/N development
I/O Insulator: LCP
I/O Gasket: Fluorosilicone
I/O Contacts: Gold Alloy per ASTM B477 and ASTM B541
B/L Insulator: High-temperature thermoplastic rated UL94 V-0
B/L Contact: Copper Alloy/Gold Plated

NOTES

Input/Output Series 89 Nanominiature connector performance IAW MIL-DTL-32139
As a miniumum, assembly identified with date code, and Pin 1 identifier. Bag and tag with Glenair part number, CAGE code, and date code.
Contacts mapped 1-to-1 from I/O to B/L connector (unused B/L contacts not connected). For alternative wire schedules, please consult factory.
Unused Cavities in I/O panel mount connector to be populated with contacts.
B/L AlphaLink® SL interface dimensions IAW Glenair drawing 171-134-02. Interface shown for reference.
Unused cavities in B/L connector to be populated with contacts.
Flex Performance:
- Shielding - EMI shielding film will be used when shielding option is chosen
- Bend radius is 6 to 10 times the flex thickness.
- Typical flex will be .01 ± .005 thick, rugged, potted, polyimide-based flex.
- Flex cables are terminated from the I/O connector to the B/L connector on a 1 to 1 connection (unused B/L contacts are not connected)
- Workmanship shall be IAW IPC-6013, Class 2.

Consult factory for more options and/or special designs and requirements

Rectangular Nanominiature rear-panel-mount plug to AlphaLink SL flex jumper

891-041 - Plug

SERIES 89 RECTANGULAR NANOMINIATURE INPUT/OUTPUT (I/O) REAR PANEL MOUNT PLUG TO ALPHALINK SL SPRING LOADED CONTACT BOARD LEVEL (B/L) CONNECTOR

Table I: Panel Mount Plug Insert Arrangement

Size	A Bsc.	B Bsc.	C Bsc.	E	F
9	.270 (6.9)	.160 (4.1)	.566 (14.4)	.688 (17.5)	.808 (20.5)
15	.345 (8.8)	.235 (6.0)	.641 (16.3)	.736 (18.7)	.883 (22.4)
21	.420 (10.7)	.310 (7.9)	.716 (18.2)	.838 (21.3)	.958 (24.3)
25	.470 (11.9)	.360 (9.1)	.766 (19.5)	.888 (22.6)	1.008 (25.6)
31	.545 (13.8)	.435 (11.0)	.841 (21.4)	.963 (24.5)	1.083 (27.5)
37	.620 (15.7)	.510 (13.0)	.916 (23.3)	1.038 (26.4)	1.158 (29.4)
51	.795 (20.2)	.685 (17.4)	1.091 (27.7)	1.213 (30.8)	1.333 (33.9)

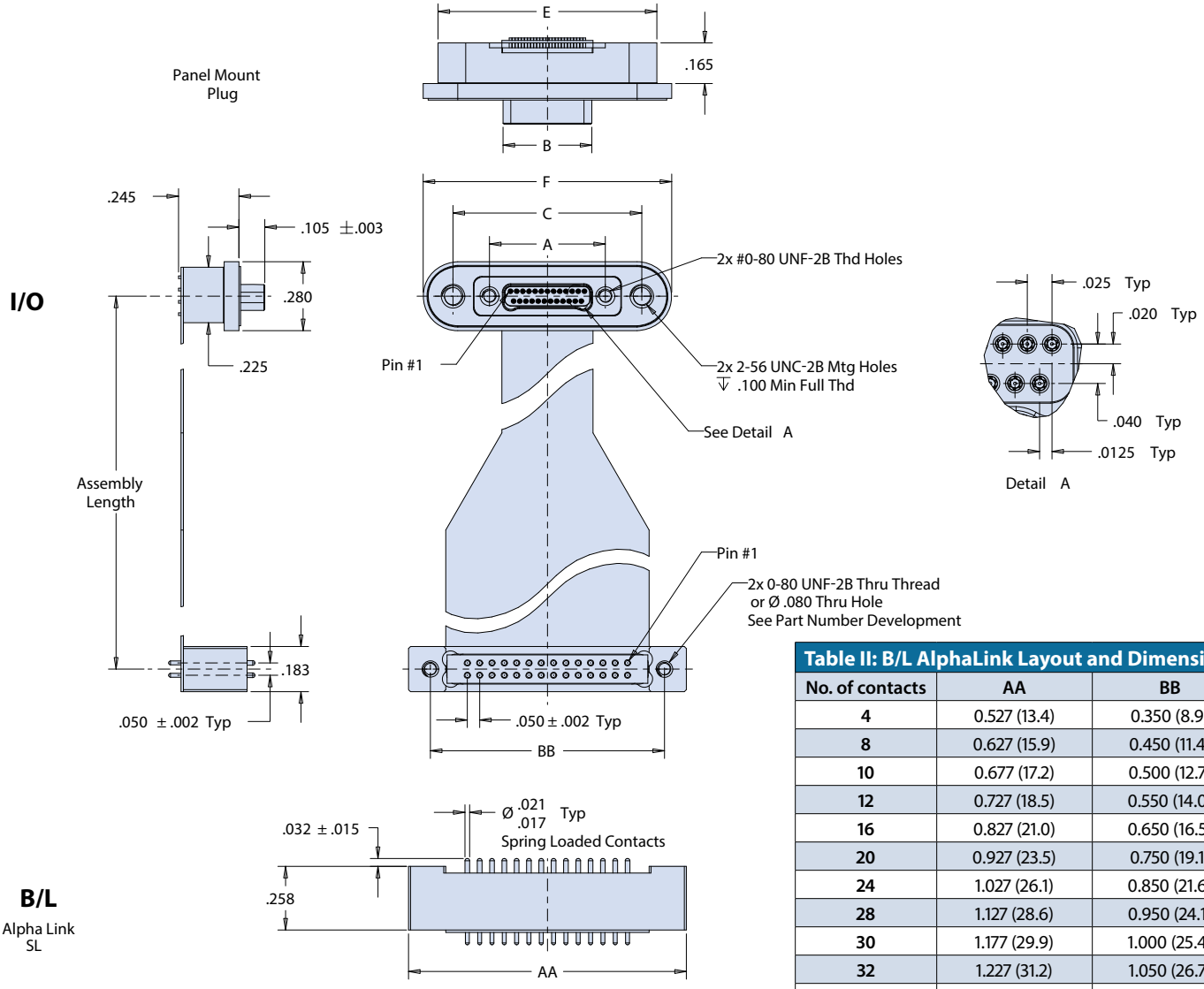


Table II: B/L AlphaLink Layout and Dimensions

No. of contacts	AA	BB
4	0.527 (13.4)	0.350 (8.9)
8	0.627 (15.9)	0.450 (11.4)
10	0.677 (17.2)	0.500 (12.7)
12	0.727 (18.5)	0.550 (14.0)
16	0.827 (21.0)	0.650 (16.5)
20	0.927 (23.5)	0.750 (19.1)
24	1.027 (26.1)	0.850 (21.6)
28	1.127 (28.6)	0.950 (24.1)
30	1.177 (29.9)	1.000 (25.4)
32	1.227 (31.2)	1.050 (26.7)
36	1.327 (33.7)	1.150 (29.2)
40	1.427 (36.2)	1.250 (31.8)

Rectangular Nanominiature rear-panel-mount receptacle to AlphaLink SL flex jumper

891-041 - Receptacle

SERIES 89 RECTANGULAR NANOMINIATURE INPUT/OUTPUT (I/O) REAR PANEL MOUNT RECEPTACLE TO ALPHALINK SL SPRING LOADED CONTACT BOARD LEVEL (B/L) CONNECTOR

Table III: Panel Mount Receptacle Insert Arrangement

Size	A Bsc	B Bsc.	C Bsc.	D	E	F
9	.270 (6.9)	.163 (4.1)	.566 (14.4)	.375 (9.5)	.688 (17.5)	.808 (20.5)
15	.345 (8.8)	.238 (6.0)	.641 (16.3)	.450 (11.4)	.736 (18.7)	.883 (22.4)
21	.420 (10.7)	.313 (8.0)	.716 (18.2)	.525 (13.3)	.838 (21.3)	.958 (24.3)
25	.470 (11.9)	.363 (9.2)	.766 (19.5)	.575 (14.6)	.888 (22.6)	1.008 (25.6)
31	.545 (13.8)	.438 (11.1)	.841 (21.4)	.650 (16.5)	.963 (24.5)	1.083 (27.5)
37	.620 (15.7)	.513 (13.0)	.916 (23.3)	.725 (18.4)	1.038 (26.4)	1.158 (29.4)
51	.795 (20.2)	.688 (17.5)	1.091 (27.7)	.900 (22.9)	1.213 (30.8)	1.333 (33.9)

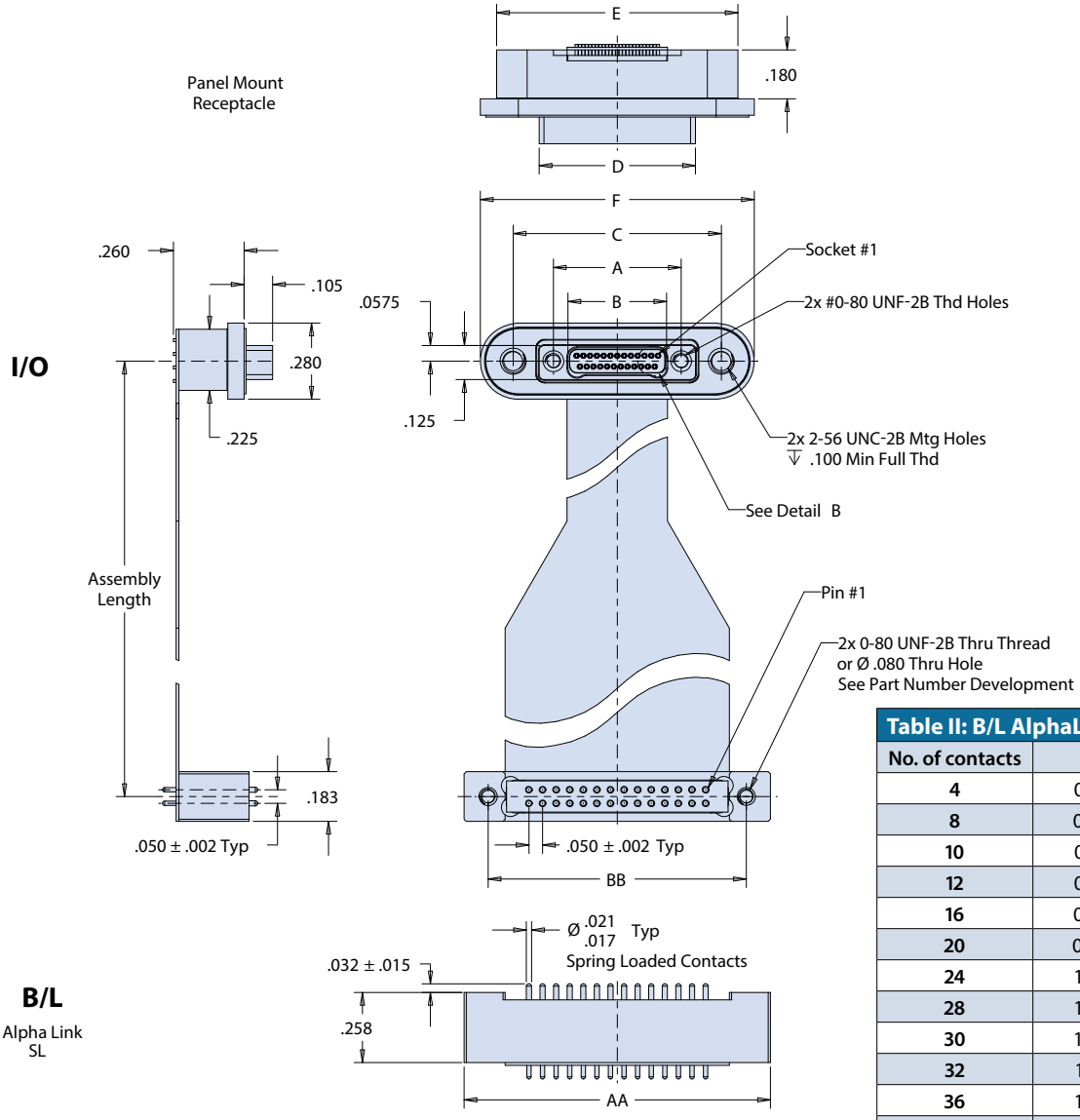


Table II: B/L AlphaLink Layout and Dimensions

No. of contacts	AA	BB
4	0.527 (13.4)	0.350 (8.9)
8	0.627 (15.9)	0.450 (11.4)
10	0.677 (17.2)	0.500 (12.7)
12	0.727 (18.5)	0.550 (14.0)
16	0.827 (21.0)	0.650 (16.5)
20	0.927 (23.5)	0.750 (19.1)
24	1.027 (26.1)	0.850 (21.6)
28	1.127 (28.6)	0.950 (24.1)
30	1.177 (29.9)	1.000 (25.4)
32	1.227 (31.2)	1.050 (26.7)
36	1.327 (33.7)	1.150 (29.2)
40	1.427 (36.2)	1.250 (31.8)

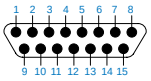
Micro-D to AlphaLink Flex Jumpers

High-reliability Micro-D MIL-DTL-83513 type rectangular connectors in 7 contact arrangements, terminated with rugged polyimide-based flex to high-performance AlphaLink SL board level connectors.

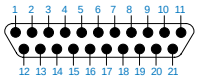
Micro-D to AlphaLink flex jumper

Recommended Micro-D I/O to AlphaLink Contact Arrangements*

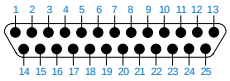
9 pin



15 pin

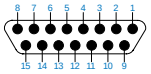


21 pin

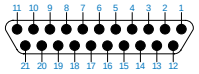


25 pin

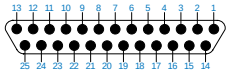
9 socket



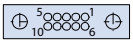
15 socket



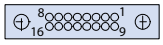
21 socket



25 socket

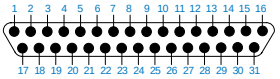


10 Contacts

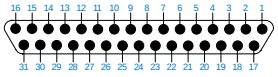


16 Contacts

28 Contacts

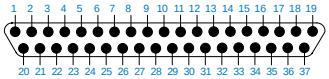


31 pin

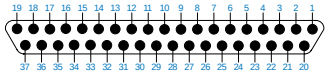


31 socket

32 Contacts

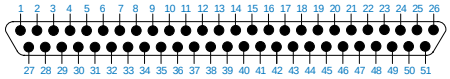


37 pin

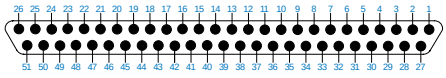


37 socket

40 Contacts



51 pin



51 socket

40 Contacts

To optimize the 40-contact AlphaLink board level connector, 40 contacts of a 51-contact size Micro-D connector can be used.

* These are recommended contact arrangements only, but do offer best availability. Contacts are mapped 1-to-1 from I/O to B/L connector (unused B/L contacts not connected). For alternative wire schedules, please consult factory.

G

Contact arrangements • materials and finishes • hardware options • dimensions • PCB layout

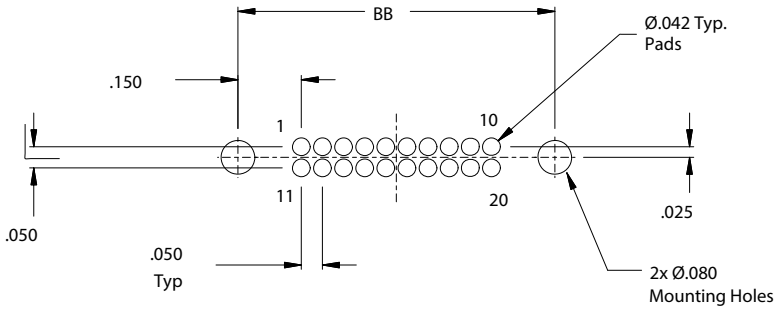
Table I- Shell Material/Finish	
Sym	**Description**
1	Aluminum Alloy-Cadmium
2	Aluminum Alloy-Electroless Nickel
3	Stainless Steel-Pasivated
5	Aluminum Alloy-Gold
33	Aluminum Alloy-Ni/Pfte

Table III- I/O Hardware Options	
Sym	**Description (Rear Panel Mount)**
R1	Jackpost for .032 Thick Panel
R2	Jackpost for .047 Thick Panel
R3	Jackpost for .062 Thick Panel
R4	Jackpost for .093 Thick Panel
R5	Jackpost for .125 Thick Panel
R6	Jackpost for .080 Thick Panel

Table IV - B/L Connector Dimensions		
Layout	**AA**	**BB**
4	.527 (13.4)	.350 (8.9)
8	.627 (15.9)	.450 (11.4)
10	.677 (17.2)	.500 (12.7)
16	.827 (21.0)	.650 (16.5)
20	.927 (23.5)	.750 (19.1)
28	1.127 (28.6)	.950 (24.1)
32	1.227 (31.2)	1.050 (26.7)
40	1.427 (36.2)	1.250 (31.8)

Table II (I/O Connector Dimensions)							
Shell Size	**A ±.005**	**B ±.003**	**C Max**	**D Max**	**E±.003**	**F±.005**	**G±.005**
9P	.960 (24.4)	.565 (14.4)	.334 (8.5)	.184 (4.7)	.183 (4.6)	.529 (13.4)	.775 (19.7)
9S	.960 (24.4)	.565 (14.4)	.400 (10.2)	.250 (6.4)	.195 (5.0)	.541 (13.7)	.775 (19.7)
15P	1.110 (28.2)	.715 (18.2)	.484 (12.3)	.184 (4.7)	.183 (4.6)	.529 (13.4)	.925 (23.5)
15S	1.110 (28.2)	.715 (18.2)	.550 (14.0)	.250 (6.4)	.195 (5.0)	.541 (13.7)	.925 (23.5)
21P	1.260 (32.0)	.865 (22.0)	.634 (16.1)	.184 (4.7)	.183 (4.6)	.529 (13.4)	1.075 (27.3)
21S	1.260 (32.0)	.865 (22.0)	.700 (17.8)	.250 (6.4)	.195 (5.0)	.541 (13.7)	1.075 (27.3)
25P	1.360 (34.5)	.965 (24.5)	.734 (18.6)	.184 (4.7)	.183 (4.6)	.529 (13.4)	1.175 (29.8)
25S	1.360 (34.5)	.965 (24.5)	.800 (20.3)	.250 (6.4)	.195 (5.0)	.541 (13.7)	1.175 (29.8)
31P	1.510 (38.4)	1.115 (28.3)	.884 (22.5)	.184 (4.7)	.183 (4.6)	.529 (13.4)	1.325 (33.7)
31S	1.510 (38.4)	1.115 (28.3)	.950 (24.1)	.250 (6.4)	.195 (5.0)	.541 (13.7)	1.325 (33.7)
37P	1.660 (42.2)	1.265 (32.1)	1.034 (26.3)	.184 (4.7)	.183 (4.6)	.529 (13.4)	1.473 (37.4)
37S	1.660 (42.2)	1.265 (32.1)	1.100 (27.9)	.250 (6.4)	.195 (5.0)	.541 (13.7)	1.473 (37.4)
51P	2.035 (51.7)	1.615 (41.0)	1.384 (35.2)	.228 (5.8)	.183 (4.6)	.529 (13.4)	1.990 (50.5)
51S	2.035 (51.7)	1.615 (41.0)	1.450 (36.8)	.296 (7.5)	.195 (5.0)	.541 (13.7)	1.990 (50.5)

* Contacts mapped 1-to-1 from I/O to B/L connector (unused B/L contacts not connected). For alternative wire schedules, please consult factory.



Recommended PCB Layout
(See Table IV)

G

Rear panel mount environmental Micro-D connector to AlphaLink® SL flex jumper

CB02-0300

GRPM PANEL-MOUNT MICRO-D INPUT/OUTPUT (I/O) CONNECTOR TO ALPHALINK® SL SPRING LOADED CONTACT BOARD LEVEL (B/L) CONNECTOR

How To Order CB02-0300								
Sample Part Number	**CB02-0300**	**-2**	**-15**	**S**	**R1**	**-2**	**T**	**-6**
Series / Basic Part No.	GRPM Panel-Mount Micro-D I/O connector to Series 171 AlphaLink® SL							
I/O Material / Finish	See Table I							
I/O Connector Shell Size	**-9**, **-15**, **-21**, **-25**, **-31**, **-37**, **-51** (See Table II)							
I/O Contact Style	**P** = Pin/Plug **S** = Socket/Receptacle							
I/O Hardware Option	**R1** = Jackpost for .032 Thick Panel **R2** = Jackpost for .047 Thick Panel **R3** = Jackpost for .062 Thick Panel **R4** = Jackpost for .093 Thick Panel **R5** = Jackpost for .125 Thick Panel **R6** = Jackpost for .080 Thick Panel							
AlphaLink® Finish	**2** = Nickel **5** = Gold							
AlphaLink® Hardware Option	**T** = Threaded thru hole **Omit** for thru hole							
Assembly Length	**3** = 3.00 ± .05 inches **6** = 6.00 ± .05 inches **12** = 12.00 ± .05 inches							

Table I- Shell Material/Finish	
Sym	**Description**
1	Aluminum Alloy-Cadmium
2	Aluminum Alloy-Electroless Nickel
3	Stainless Steel-Pasivated
5	Aluminum Alloy-Gold
33	Aluminum Alloy-Ni/Pfte

G

MATERIALS AND FINISHES

B/L connector shell: Aluminum alloy. I/O shell: See Table I
Insulator: High-temperature thermoplastic rated UL94 V-0
Socket interfacial seal: Fluorosilicone
Contacts: Copper Alloy/Gold Plated
Potting: Epoxy
Hardware: Stainless steel/passivated

NOTES

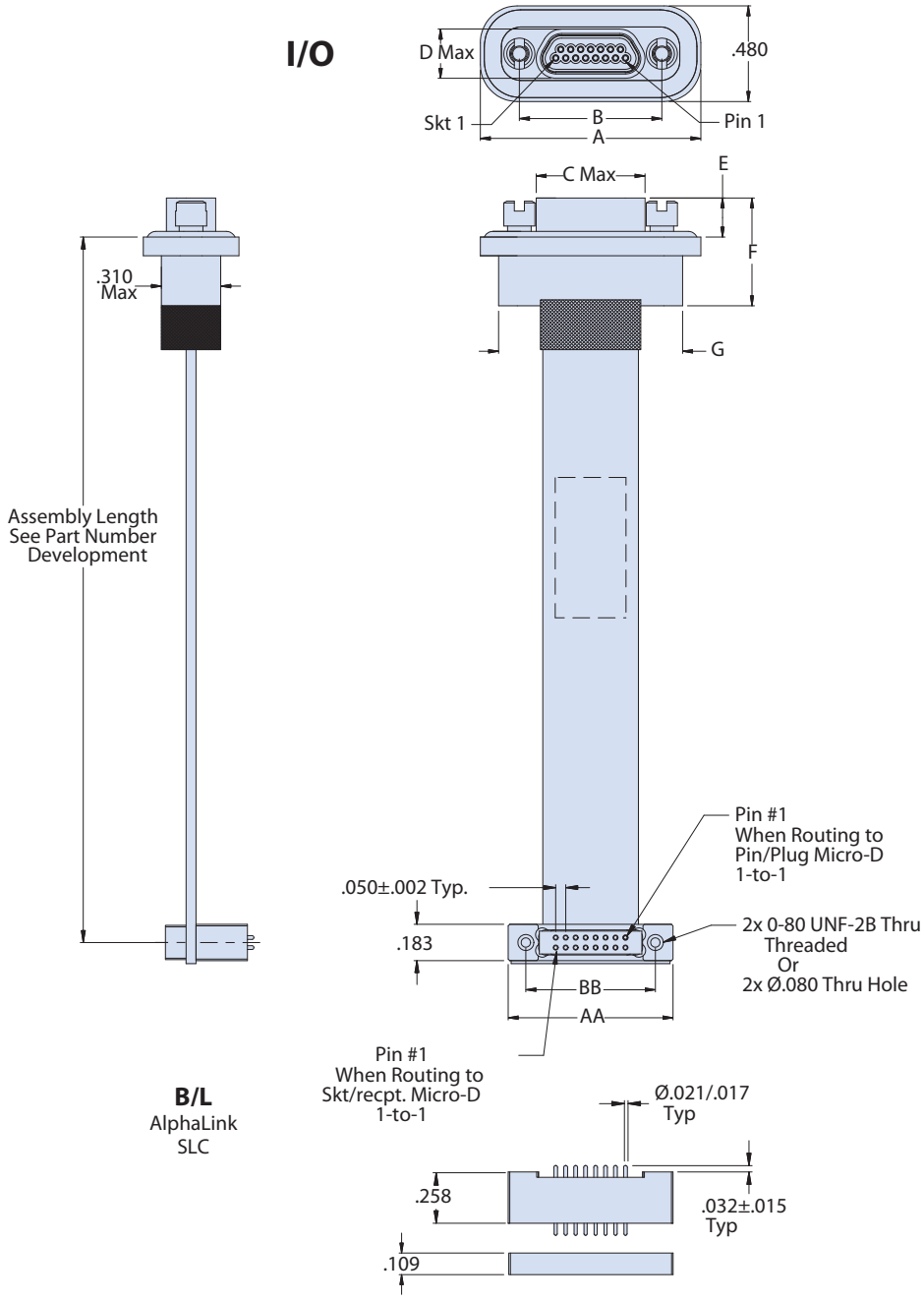
Input/Output Micro-D rectangular environmental connector:
- I/O connector designed to meet the performance requirements of MIL-DTL-83513 (MWDM series)
- I/O interface dimensions IAW MIL-DTL-83513

Board Level AlphaLink® SL connector:
- B/L AlphaLink® SL connectors are built in accordance with Glenair drawing 171-134-02. Interface shown for reference only. Unused cavities in AlphaLink B/L connector to be populated with contacts.

Flex Performance:
- Flex fabricated IAW IPC-6013, Class 3, and assembled IAW J-STD-001, Class 3, using SN63/PB37 solder.
- Flex cables are terminated from the I/O connector to the B/L connector on a 1-to-1 connection (extra pin on B/L connector not connected)
- Nets/connections rated for 100mA max. current
- Typical flex will be .01 ± .005 thick
- Bend radius is 6 to 10 times the flex thickness.
- Flex material: Polyimide

Rear panel mount environmental Micro-D connector to AlphaLink® SL flex jumper

CB02-0300



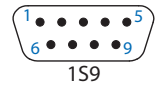
G

HiPer-D to AlphaLink® Flex Jumpers

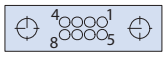
High-reliability HiPer-D MIL-DTL-24308 intermateable/intermountable rectangular connectors in 6 contact arrangements, terminated with rugged polyimide-based flex to high-performance AlphaLink® SL board level connectors.

HiPer-D to AlphaLink® flex jumper

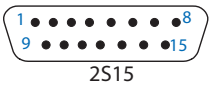
Recommended HiPer-D I/O to AlphaLink Contact Arrangements*



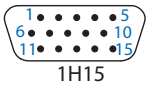
1S9



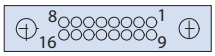
8 Contacts



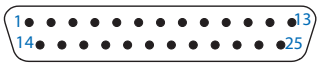
2S15



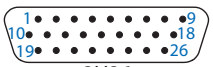
1H15



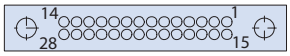
16 Contacts



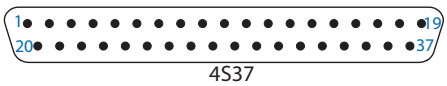
3S25



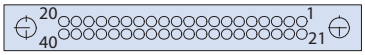
2H26



28 Contacts



4S37



40 Contacts

Table II - Available I/O Insert Layout and B/L Assembly Pair

Insert Layout	I/O Insert Layout		B/L Layout
	Contact Size	Qty.	
1S9	20HD	5	8
2S15	20HD	15	16
3S25	20HD	25	28
4S37	20HD	37	40
1H15	22D	15	16
2H26	22D	26	28

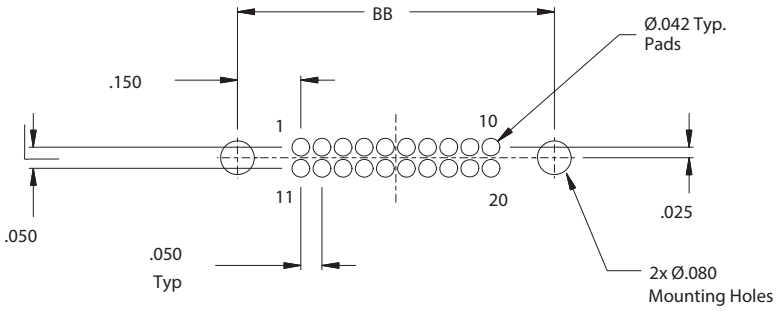
* These are recommended contact arrangements only, but do offer best availability. Contacts are mapped 1-to-1 from I/O to B/L connector (unused B/L or I/O contacts not connected). For alternative wire schedules, please consult factory.

Contact arrangements • materials and finishes • hardware options • dimensions • PCB layout

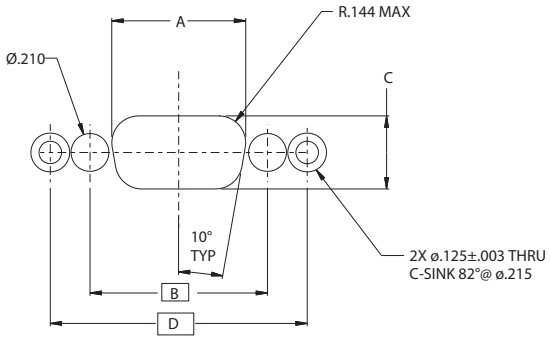
Table I- Shell Material/Finish	
Sym	Description
2	Aluminum Alloy-Electroless Nickel
5	Aluminum Alloy-Gold

Table IV - B/L Connector Dimensions		
Layout	AA	BB
8	.627 (15.9)	.450 (11.4)
16	.827 (21.0)	.650 (16.5)
28	1.127 (28.6)	.950 (24.1)
40	1.427 (36.2)	1.250 (31.8)

* Contacts mapped 1-to-1 from I/O to B/L connector (unused B/L or I/O contacts not connected). For alternative wire schedules, please consult factory.



Recommended PCB Layout
(See Table IV)



Recommended Panel Cutout as viewed from front face of panel

Panel Cutout Dimensions				
Shell Size	A +.005 -.000	B Bsc	C +.005 -.000	D Bsc
1	.746 (18.9)	.984 (25.0)	.409 (10.4)	1.424 (36.2)
2	1.074 (27.3)	1.312 (33.3)	.409 (10.4)	1.752 (44.5)
3	1.614 (41.0)	1.852 (47.0)	.409 (10.4)	2.292 (58.2)
4	2.262 (57.5)	2.500 (63.5)	.409 (10.4)	2.940 (74.7)

HiPer-D pin connector to AlphaLink® SL flex jumper

286-077P

HIPER-D (I/O) PIN CONNECTOR TO ALPHALINK® SL SPRING LOADED CONTACT BOARD LEVEL (B/L) CONNECTOR

How To Order 286-077P									
Sample Part Number	**286-077P**	**–3S25**	**ME**	**G**	**N**	**–2**	**T**	**–6**	**S**
Series / Basic Part No.	HiPer-D pin connector to Series 171 AlphaLink® SL								
I/O Insert Arrangement	See Table II								
I/O Material / Finish	**ME** = Electroless Nickel over Aluminum **Z1** = Passivated Stainless **ZM** = Electroless Nickel over Stainless **JF** = Yellow Chromate over Cadmium								
I/O Grounding Option	**G** = EMI Grounding **N** = None								
I/O Hardware Option	**N** = None (Tapped Hole) **P** = Female Jackpost **G** = Guide Pin **B** = Guide Bushing								
AlphaLink® Finish	**2** = Nickel **5** = Gold								
AlphaLink® Hardware Option	**T** = Threaded thru hole **Omit** for thru hole								
Assembly Length	**3** = 3.00 ± .05 inches **6** = 6.00 ± .05 inches **12** = 12.00 ± .05 inches								
Optional Shielding	**S** = With shielding **Omit** for none								

NOTES

Input/Output Series 28 HiPer-D connector:
- Right-angle pin-contact connector, rear panel mount with o-ring environmental seal.
- Refer to Glenair drawing 280-024 for materials, finishes, and performance specifications.
- Contacts mapped 1-to-1 from I/O to B/L connector (unused B/L contacts not connected). For alternative wire schedules, please consult factory.

Board Level AlphaLink® SL connector:
- B/L AlphaLink® SL connectors are built in accordance with Glenair drawing 171-134-02

Flex Performance:
- Shielding - EMI shielding film.
- Bend radius is 6 to 10 times the flex thickness.
- Typical flex will be .01 ± .005 thick, rugged, potted, polyimide-based flex.
- Flex cables are terminated from the I/O connector to the B/L connector on a 1 to 1 connection (unused B/L contacts are not connected)
- Workmanship shall be IAW IPC-6013, Class 2.

Consult factory for more options and/or special designs and requirements

HiPer-D plug connector to AlphaLink® SL flex jumper

286-077P

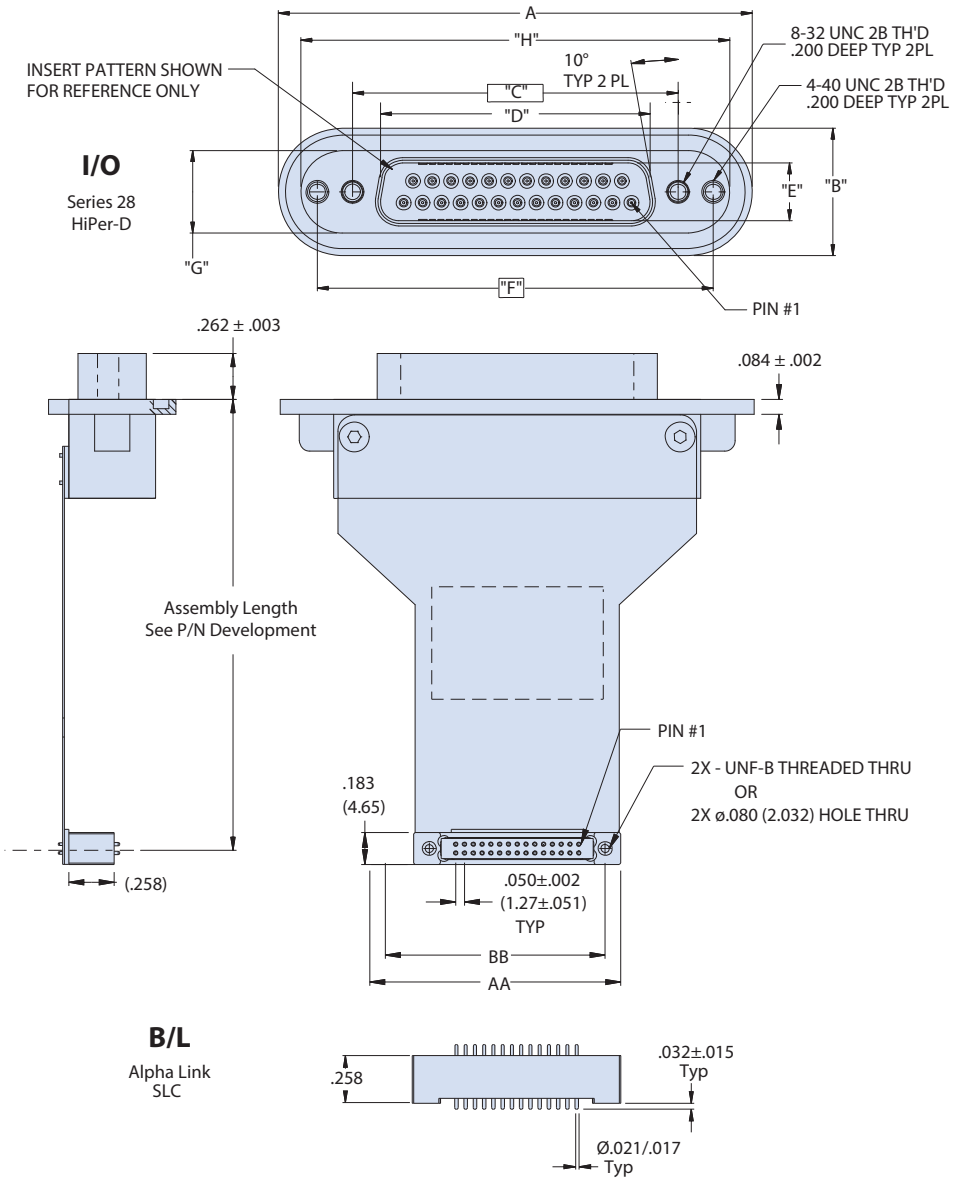


Table II (I/O Connector Dimensions)									
Shell Size	Insert Pattern	A ± .015	B ± .015	C Basic	D ± .005	E ± .005	F Basic	G ± .015	H ± .015
1	SD9 / HD15	1.865 (47.4)	0.725 (18.4)	0.984 (25.0)	0.666 (16.9)	0.329 (8.4)	1.424 (36.2)	0.469 (11.9)	1.609 (40.9)
2	SD15 / HD26	2.200 (55.9)	0.725 (18.4)	1.312 (33.3)	0.994 (25.2)	0.329 (8.4)	1.752 (44.5)	0.469 (11.9)	1.944 (49.4)
3	SD25	2.736 (69.5)	0.725 (18.4)	1.852 (47.0)	1.534 (39.0)	0.329 (8.4)	2.292 (58.2)	0.469 (11.9)	2.480 (63.0)
4	SD37	3.385 (86.0)	0.725 (18.4)	2.500 (63.5)	2.182 (55.4)	0.329 (8.4)	2.940 (74.7)	0.469 (11.9)	3.129 (79.5)

HiPer-D socket connector to AlphaLink® SL flex jumper

286-078S

HIPER-D (I/O) SOCKET CONNECTOR TO ALPHALINK® SL SPRING LOADED CONTACT BOARD LEVEL (B/L) CONNECTOR

How To Order 286-078S								
Sample Part Number	**286-078S**	**–3S25**	**ME**	**N**	**–2**	**T**	**–6**	**S**
Series / Basic Part No.	HiPer-D socket connector to Series 171 AlphaLink® SL							
I/O Insert Arrangement	See Table II							
I/O Material / Finish	**ME** = Electroless Nickel over Aluminum **Z1** = Passivated Stainless **ZM** = Electroless Nickel over Stainless **JF** = Yellow Chromate over Cadmium							
I/O Hardware Option	**N** = None (Tapped Hole) **P** = Female Jackpost **G** = Guide Pin **B** = Guide Bushing							
AlphaLink® Finish	**2** = Nickel **5** = Gold							
AlphaLink® Hardware Option	**T** = Threaded thru hole **Omit** for thru hole							
Assembly Length	**3** = 3.00 ± .05 inches **6** = 6.00 ± .05 inches **12** = 12.00 ± .05 inches							
Optional Shielding	**S** = With shielding **Omit** for none							

NOTES

Input/Output Series 28 HiPer-D connector:
- Right-angle socket-contact connector, rear panel mount with o-ring environmental seal.
- Refer to Glenair drawing 280-025 for materials, finishes, and performance specifications.
- Contacts mapped 1-to-1 from I/O to B/L connector (unused B/L contacts not connected). For alternative wire schedules, please consult factory.

Board Level AlphaLink® SL connector:
- B/L AlphaLink® SL connectors are built in accordance with Glenair drawing 171-134-02

Flex Performance:
- Shielding - EMI shielding film.
- Bend radius is 6 to 10 times the flex thickness.
- Typical flex will be .01 ± .005 thick, rugged, potted, polyimide-based flex.
- Flex cables are terminated from the I/O connector to the B/L connector on a 1 to 1 connection (unused B/L contacts are not connected)
- Workmanship shall be IAW IPC-6013, Class 2.

Consult factory for more options and/or special designs and requirements

HiPer-D receptacle connector to AlphaLink® SL flex jumper

286-078S

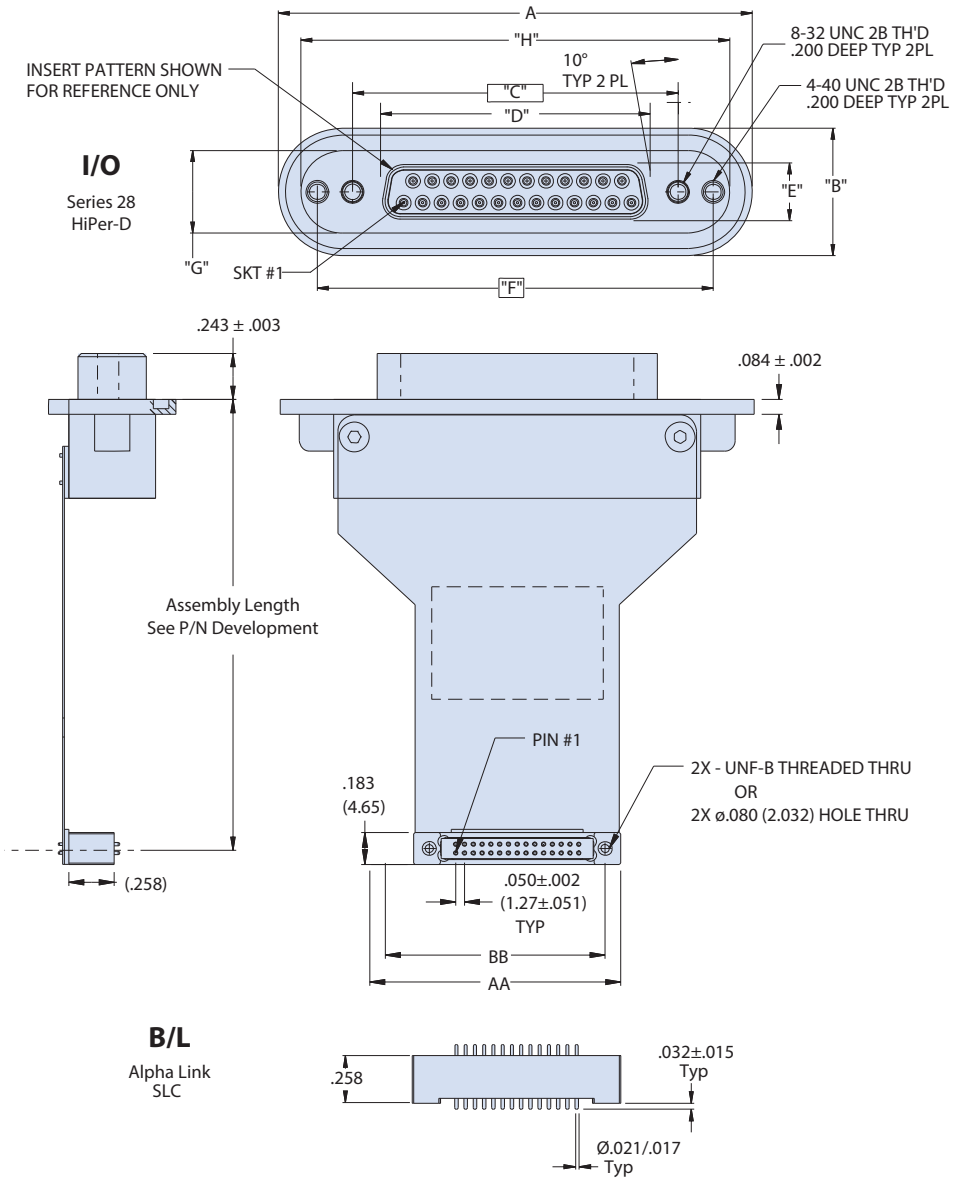


Table II (I/O Connector Dimensions)									
Shell Size	Insert Pattern	A ± .015	B ± .015	C Basic	D ± .005	E ± .005	F Basic	G ± .015	H ± .015
1	SD9	1.865 (47.4)	0.725 (18.4)	0.984 (25.0)	0.643 (16.3)	0.311 (7.9)	1.424 (36.2)	0.469 (11.9)	1.609 (40.9)
	HD15								
2	SD15	2.200 (55.9)	0.725 (18.4)	1.312 (33.3)	0.971 (24.7)	0.311 (7.9)	1.752 (44.5)	0.469 (11.9)	1.944 (49.4)
	HD26								
3	SD25	2.736 (69.5)	0.725 (18.4)	1.852 (47.0)	1.511 (38.4)	0.311 (7.9)	2.292 (58.2)	0.469 (11.9)	2.480 (63.0)
4	SD37	3.385 (86.0)	0.725 (18.4)	2.500 (63.5)	2.159 (54.8)	0.311 (7.9)	2.940 (74.7)	0.469 (11.9)	3.129 (79.5)

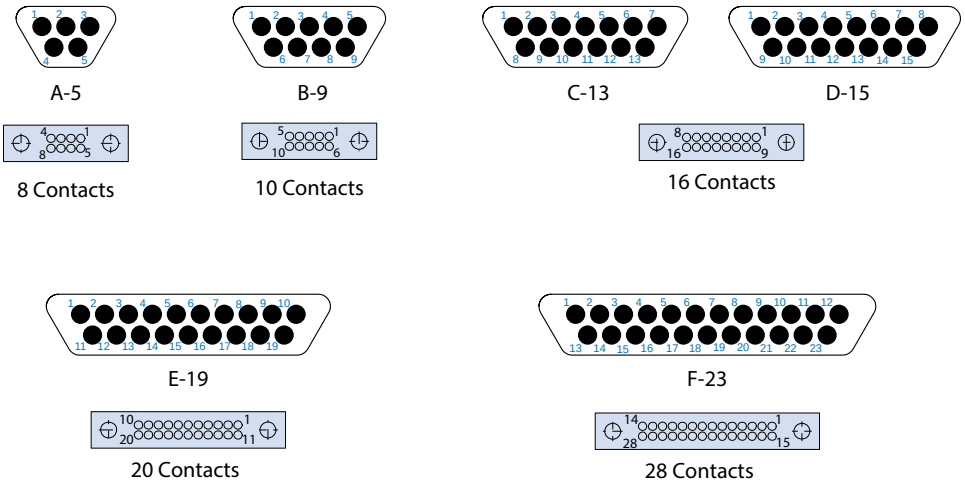
Contact arrangements • hardware options • dimensions • PCB layout

Micro-Crimp to AlphaLink Flex Jumpers

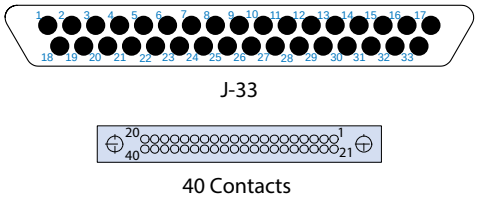
Glenair Series 79 Micro-Crimp advanced-performance rectangular connectors in 7 contact arrangements, terminated with rugged polyimide-based flex to AlphaLink board level connectors.

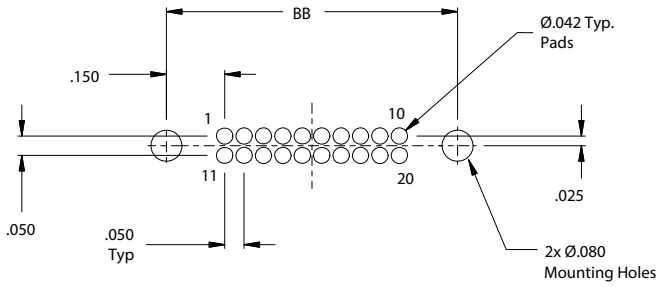
Micro-Crimp to AlphaLink flex jumper

Recommended Micro-Crimp I/O to AlphaLink Contact Arrangements*



* These are recommended contact arrangements only, but do offer best availability. Contacts are mapped 1-to-1 from I/O to B/L connector (unused B/L contacts not connected). For alternative wire schedules, please consult factory.





Recommended PCB Layout
(See Table Iv)

H

Contact arrangements • hardware options • dimensions • PCB layout

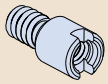
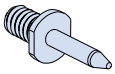
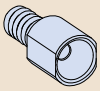
Table I: Hardware Option		
N No Mating Hardware		Connector supplied with blind tapped holes. .150" (3.8 mm) minimum depth. Connector supplied with blind tapped holes, .150 (3.8mm) minimum depth, #4-40 UNC-2B thread.
P Jackposts		Connector is supplied with non-removable stainless steel jackposts, #2-56 UNC-2B thread.
G Guide Pins		Connector is supplied with stainless steel non-removable guide pins for blind mate applications. Mates with type "S" guide sockets on corresponding plug connector.
S Guide Sockets		Connector is supplied with stainless steel non-removable bushings for blind mate applications. Mates with type "G" guide pins on corresponding plug connector.

Table II: Available I/O Insert Layout and B/L Assembly Pair			
I/O No. of Contacts	I/O Insert Layout		B/L No. of Contacts
	Contact Size	Config	
5	23	A-5	8
9	23	B-9	10
13	23	C-13	16
15	23	D-15	16
19	23	E-19	20
23	23	F-23	28
33	23	J-33	40
* Contacts mapped 1-to-1 from I/O to B/L connector (unused B/L contacts not connected). For alternative wire schedules, please consult factory.			

Table IV - B/L Connector Dimensions		
Layout	AA	BB
4	.527 (13.4)	.350 (8.9)
8	.627 (15.9)	.450 (11.4)
10	.677 (17.2)	.500 (12.7)
16	.827 (21.0)	.650 (16.5)
20	.927 (23.5)	.750 (19.1)
28	1.127 (28.6)	.950 (24.1)
32	1.227 (31.2)	1.050 (26.7)
40	1.427 (36.2)	1.250 (31.8)

Rear panel mount environmental Micro-Crimp pin contact receptacle to AlphaLink SL flex jumper

796-112

SERIES 79 MICRO-CRIMP INPUT/OUTPUT (I/O) RECEPTACLE CONNECTOR WITH PIN CONTACTS TO ALPHALINK SL SPRING-LOADED CONTACT BOARD LEVEL (B/L) CONNECTOR

How To Order 796-112								
Sample Part Number	**796-112**	**-9-10**	**M**	**G**	**-2**	**T**	**-6**	**S**
Series / Basic Part No.	Rear Panel-Mount Micro-Crimp I/O receptacle to Series 171 AlphaLink SL							
I/O Contact Arrangement	See Table II							
I/O Shell Finish	**Aluminum Shell** **M** - Electroless Nickel **MT** - Nickel-PTFE **E** - Chem Film **Z2** - Gold **UC** - Zinc Cobalt with Black Chromate **J** - Cadmium with Yellow Chromate **NF** - Cad/O.D. over Electroless Nickel							
I/O Hardware Option	**P** - Jackposts **G** - Male Guide Pins **S** - Female Guide Sockets **N** - No Mating Hardware (See Table I)							
AlphaLink Finish	**2** = Nickel **5** = Gold							
AlphaLink Hardware Option	**T** = Threaded thru hole **Omit** for thru hole							
Assembly Length	**3** = 3.00 ± .05 inches **6** = 6.00 ± .05 inches **12** = 12.00 ± .05 inches							
Optional Shielding	**S** = With shielding **Omit** for none							

MATERIALS AND FINISHES

Shell: Aluminum alloy
Insulators: Liquid crystal polymer
Interfacial seal: Fluorosilicone
Contacts: Copper Alloy/Gold Plated
Potting: Epoxy
Hardware: 300 series stainless steel

NOTES

Input/Output Series 79 Micro-Crimp connector:
- Receptacle connector with pin contacts, rear panel mount with o-ring environmental seal
- Refer to Glenair drawing 799-009 for insert arrangements
- Contacts mapped 1-to-1 from I/O to B/L connector (unused B/L contacts not connected). For alternative wire schedules, please consult factory.
- Refer to Glenair drawing 799-008 for materials, finishes and performance specifications
- Refer to Glenair drawing 799-005 for panel cutouts
- Blind mate ± .030 (0.76) allowable misalignment from centerline.

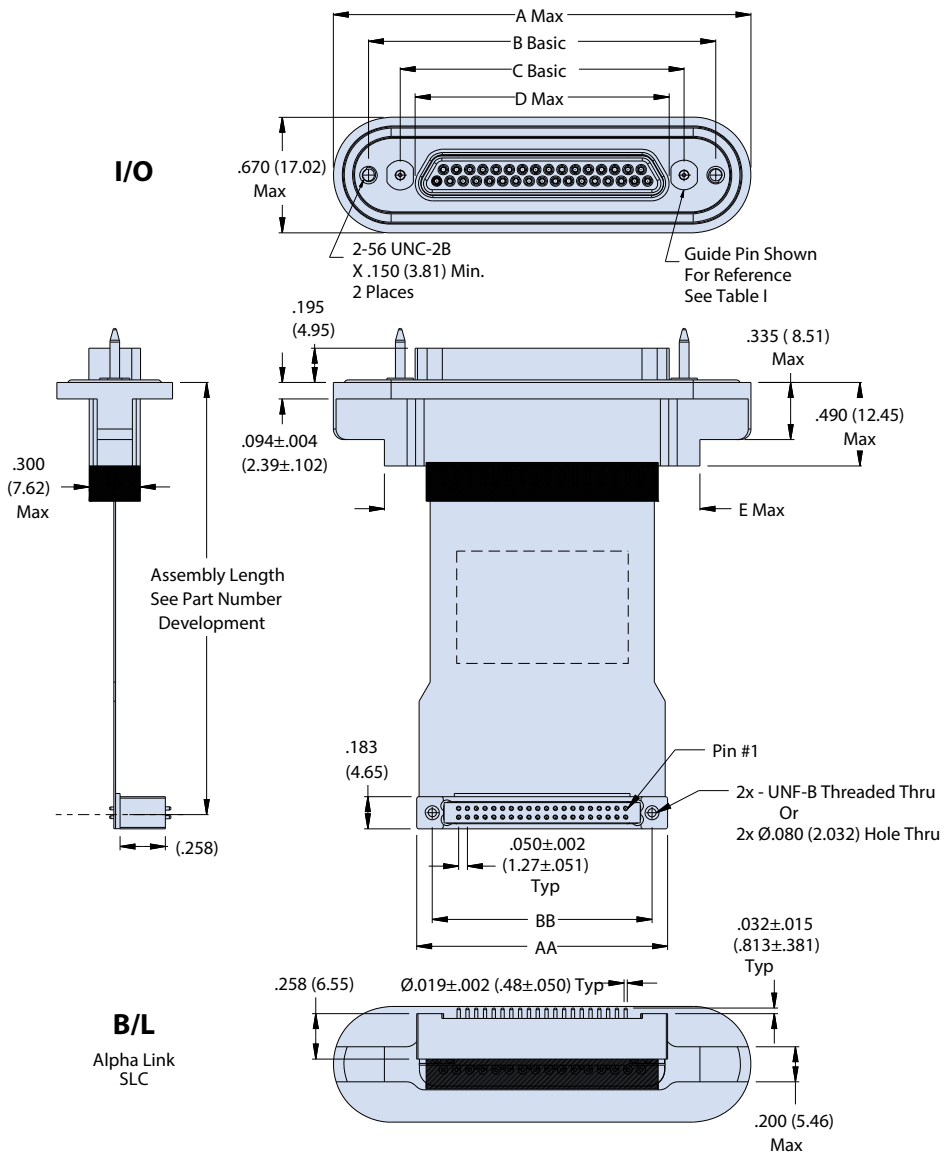
Board Level AlphaLink SL connector:
- B/L AlphaLink SL connectors are built in accordance with Glenair drawing 171-134-02
- B/L connectors are paired with I/O connectors as shown in Contact Arrangements diagram, page 36

Flex Performance:
- Shielding - EMI shielding film.
- Bend radius is 6 to 10 times the flex thickness.
- Typical flex will be .01 ± .005 thick, rugged, potted, polyimide-based flex.
- Flex cables are terminated from the I/O connector to the B/L connector on a 1 to 1 connection (unused B/L contacts are not connected)
- Workmanship shall be IAW IPC-6013, Class 2.

Consult factory for more options and/or special designs and requirements

Rear panel mount environmental Micro-Crimp pin contact receptacle to AlphaLink SL flex jumper

796-112



Micro-Crimp I/O Connector Shell Size/Dimensions										
Shell Size	A Max		B Basic		C Basic		D Max		E Max	
	In.	mm.	In.	mm.	In.	mm.	In.	mm.	In.	mm.
A	1.341	34.06	.925	23.50	.565	14.35	.401	10.19	.760	19.30
B	1.491	37.87	1.075	27.31	.715	18.16	.551	14.00	.910	21.11
C	1.641	41.68	1.225	31.12	.865	21.97	.701	17.81	1.060	26.92
D	1.741	44.22	1.325	33.66	.965	24.51	.801	20.35	1.160	29.46
E	1.891	48.03	1.475	37.47	1.115	28.32	.951	24.16	1.310	33.27
F	2.041	51.84	1.625	41.28	1.265	32.13	1.101	27.96	1.460	37.08
J	2.391	60.73	1.975	50.17	1.615	41.02	1.460	37.08	1.810	45.97

Rear panel mount environmental Micro-Crimp socket contact plug to AlphaLink SL flex jumper

796-113

SERIES 79 MICRO-CRIMP INPUT/OUTPUT (I/O) PLUG CONNECTOR WITH SOCKET CONTACTS TO ALPHALINK SL SPRING-LOADED CONTACT BOARD LEVEL (B/L) CONNECTOR

How To Order 796-113									
Sample Part Number	**796-113**	**-9-10**	**M**	**E**	**G**	**-2**	**T**	**-6**	**S**
Series / Basic Part No.	Rear Panel-Mount Micro-Crimp I/O plug to Series 171 AlphaLink SL								
I/O Contact Arrangement	See Table II								
I/O Shell Finish	**Aluminum Shell** **M** - Electroless Nickel **MT** - Nickel-PTFE **E** - Chem Film **Z2** - Gold **UC** - Zinc Cobalt with Black Chromate **J** - Cadmium with Yellow Chromate **NF** - Cad/O.D. over Electroless Nickel								
EMI Spring	**E** = EMI Spring **N** = No EMI Spring								
I/O Hardware Option	**P** - Jackposts **G** - Male Guide Pins **S** - Female Guide Sockets **N** - No Mating Hardware (See Table I)								
AlphaLink Finish	**2** = Nickel **5** = Gold								
AlphaLink Hardware Option	**T** = Threaded thru hole **Omit** for thru hole								
Assembly Length	**3** = 3.00 ± .05 inches **6** = 6.00 ± .05 inches **12** = 12.00 ± .05 inches								
Optional Shielding	**S** = With shielding **Omit** for none								

MATERIALS AND FINISHES

Shell: Aluminum alloy
Insulators: Liquid crystal polymer
Interfacial seal: Fluorosilicone
Contacts: Copper Alloy/Gold Plated
Potting: Epoxy
Hardware: 300 series stainless steel

NOTES

Input/Output Series 79 Micro-Crimp connector:
- Plug connector with socket contacts, rear panel mount with o-ring environmental seal
- Refer to Glenair drawing 799-009 for insert arrangements
- Refer to Glenair drawing 799-008 for materials, finishes and performance specifications
- Refer to Glenair drawing 799-005 for panel cutouts
- Blind mate ± .030 (0.76) allowable misalignment from centerline.

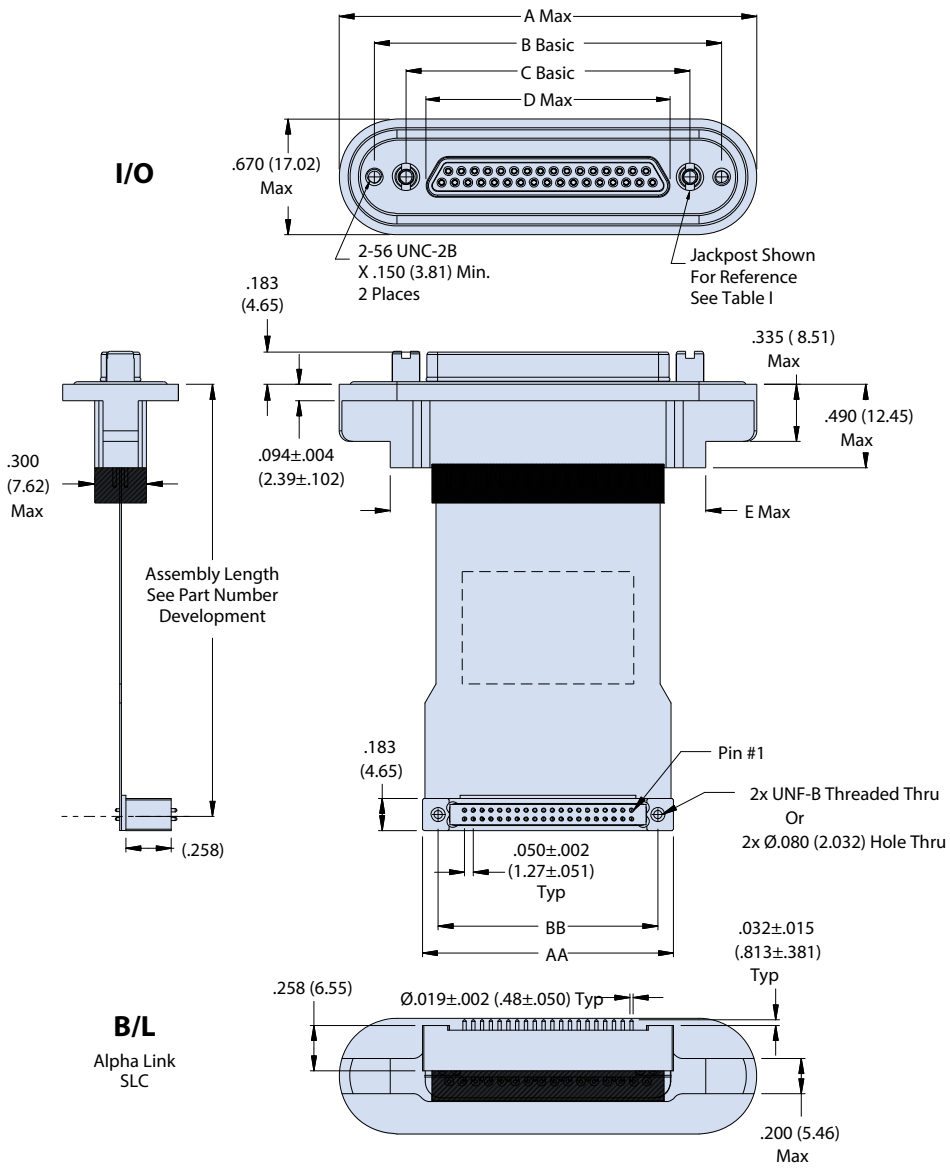
Board Level AlphaLink SL connector:
- B/L AlphaLink SL connectors are built in accordance with Glenair drawing 171-134-02
- B/L connectors are paired with I/O connectors as shown in Contact Arrangements diagram, page 36

Flex Performance:
- Shielding - EMI shielding film.
- Bend radius is 6 to 10 times the flex thickness.
- Typical flex will be .01 ± .005 thick, rugged, potted, polyimide-based flex.
- Flex cables are terminated from the I/O connector to the B/L connector on a 1 to 1 connection (unused B/L contacts are not connected)
- Workmanship shall be IAW IPC-6013, Class 2.

Consult factory for more options and/or special designs and requirements

Rear panel mount environmental Micro-Crimp socket contact plug to AlphaLink SL flex jumper

796-113



Micro-Crimp I/O Connector Shell Size/Dimensions										
Shell Size	A Max		B Basic		C Basic		D Max		E Max	
	In.	mm.	In.	mm.	In.	mm.	In.	mm.	In.	mm.
A	1.341	34.06	.925	23.50	.565	14.35	.335	8.51	.760	19.30
B	1.491	37.87	1.075	27.31	.715	18.16	.485	12.32	.910	21.11
C	1.641	41.68	1.225	31.12	.865	21.97	.635	16.13	1.060	26.92
D	1.741	44.22	1.325	33.66	.965	24.51	.735	18.67	1.160	29.46
E	1.891	48.03	1.475	37.47	1.115	28.32	.885	22.48	1.310	33.27
F	2.041	51.84	1.625	41.28	1.265	32.13	1.035	26.29	1.460	37.08
J	2.391	60.73	1.975	50.17	1.615	41.02	1.390	35.31	1.810	45.97

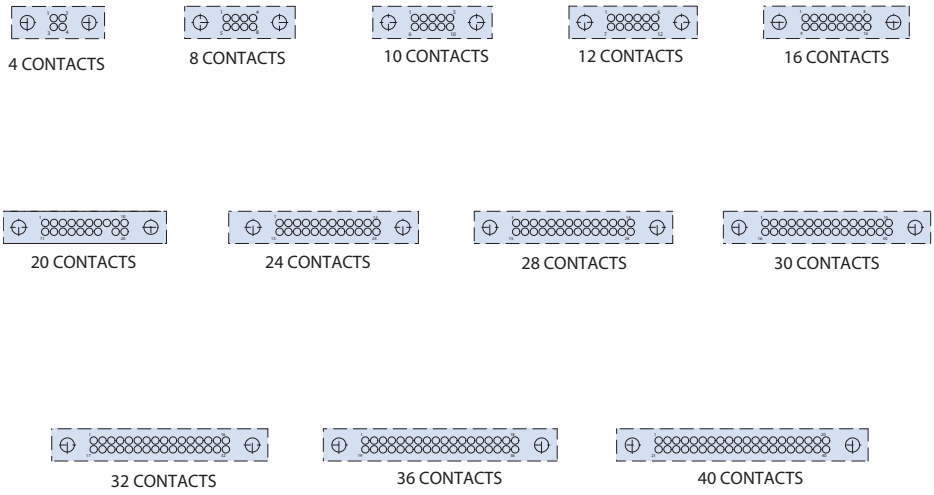
SERIES 171

AlphaLink® SL connector flex jumper assembly

CB02-0250

How To Order AlphaLink flex jumpers						
Sample Part Number	**CB02-0250**	**-2**	**-20**	**T**	**-6.00**	**X**
Series / Basic Part No.	AlphaLink® flex jumper					
Connector Finish	**2** = Nickel **5** = Gold					
Number of Nets / Pins	See Available PCB Layouts below					
Hardware	**T** = Threaded thru hole **Omit** for thru hole					
Assembly Length	in Inches					
Connector Configuration	**X** = same side **Y** = opposite sides					

AlphaLink Printed Circuit Board Layout - Pogo Pin Side



MATERIALS AND FINISHES

Shell: Aluminum alloy
Insulators: Liquid crystal polymer
Contacts: Copper Alloy/Gold Plated
Potting: Epoxy
Hardware: 300 series stainless steel

NOTES

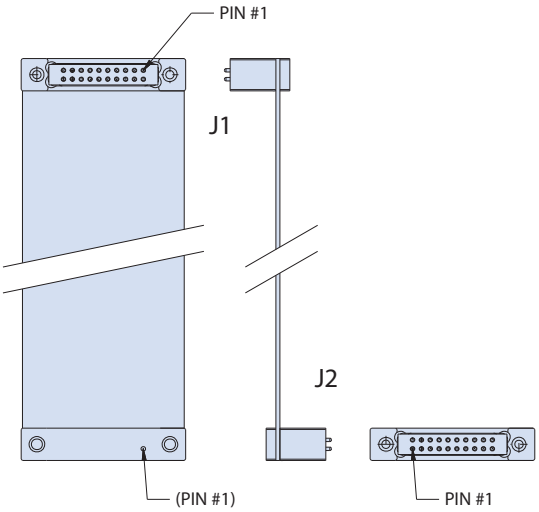
Flex Performance:
- Flex fabricated IAW IPC-6013, Class 3
- Flex cable nets are connected from J1 to J2 on a 1-to-1 connection
- Typical flex will be .01 ± .005 thick, rugged, potted, polyimide-based flex.
- Bend radius is 6 to 10 times the flex thickness.
- Workmanship / soldering IAW J-STD-001
- Maximum current per pin of 100 milliamps (.005" traces on half-ounce copper)

Consult factory for more options and/or special designs and requirements

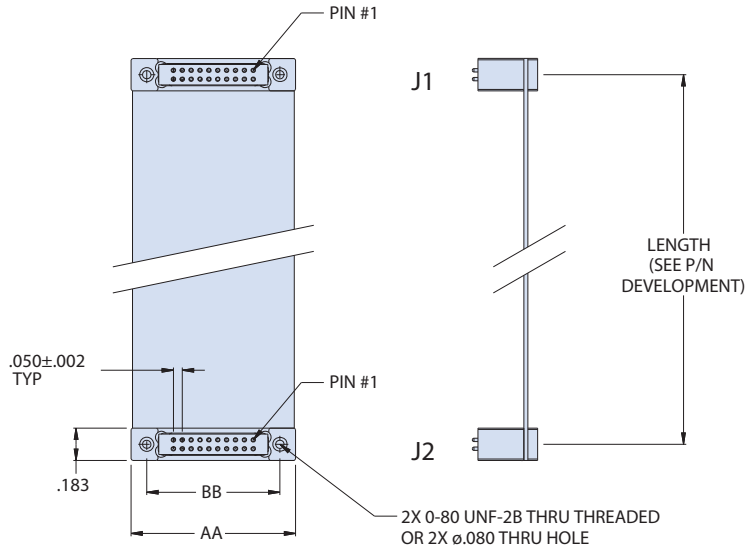
AlphaLink® SL connector flex jumper assembly

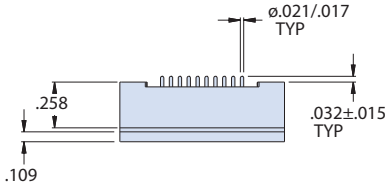
CB02-0250

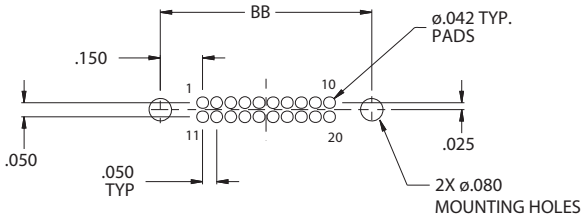
"Y" CONNECTOR CONFIGURATION



"X" CONNECTOR CONFIGURATION







RECOMMENDED PCB LAYOUT

(MATES TO SLC SIDE OF CONNECTOR)
(SEE TABLE II)

Table II: Layout and Dimensions

No. of contacts	AA	BB
4	0.527 (13.4)	0.350 (8.9)
8	0.627 (15.9)	0.450 (11.4)
10	0.677 (17.2)	0.500 (12.7)
16	0.827 (21.0)	0.650 (16.5)
20	0.927 (23.5)	0.750 (19.1)
28	1.127 (28.6)	0.950 (24.1)
32	1.227 (31.2)	1.100 (27.9)
40	1.427 (36.2)	1.250 (31.8)

SERIES M22759

Data transmission wire

AS22759 qualified single-ended transmission wire for termination of AlphaLink SL solder-cup connectors

Glenair stocks a full range of AS22759 qualified wire and cable. M22759/11 is a general-purpose, high-temperature range silver-coated copper wire with extruded TFE insulation. M22759/33 is our small diameter high-flex silver-coated copper wire with crosslinked modified ETFE insulation. Both are offered in #24 AWG, optimized for termination to AlphaLink 171-134-01 solder-cup spring-loaded board level connectors.

Table I

Part Number	Wire Size (AWG)	Stranding (Number of strands x AWG gage of strands)	Diameter of stranded conductor (inches)		Finished Wire		
			min	max	Resistance at 20° C (68° F) (Ohms/ 1000 ft) max	Diameter (inches)	Weight (lbs/ 1000 ft) max
M22759/11-24-*	24	19 x 36	.023	.025	24.3	.043 ± .002	2.58
M22759/33-24-*	24	19 x 36	.023	.025	28.4	.037 ± .002	2.0

NOTES

Cable identified with manufacturer's name and part number.
Cable is sold in 1 foot increments. Specify desired length on purchase order.

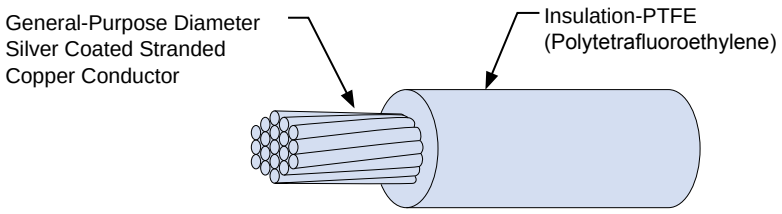
Glenair offers a full range of high-performance wire and cable, designed and manufactured for optimal performance in mission-critical applications—with no dollar or length order minimums.

Airframe non-impedance-matched data transmission cable for termination of AlphaLink SL solder-cup connectors

M22759/11 SILVER-COATED COPPER WIRE WITH EXTRUDED TFE INSULATION: GENERAL PURPOSE, HIGH-TEMPERATURE RANGE WIRE FOR USE WITH ALPHALINK SL 171-134-01

How To Order

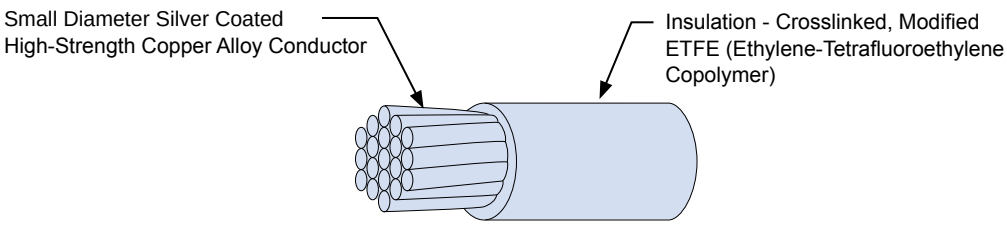
General Specification		Slash Sheet		Wire Gage (AWG) *See Table I, opposite page*		Color Code Designator *Per MIL-STD-681*
M22759	/	11	-	24	-	9



M22759/33 SILVER-COATED COPPER WIRE WITH CROSSLINKED, MODIFIED ETFE INSULATION: SMALL DIAMETER, HIGH-FLEX WIRE FOR USE WITH ALPHALINK SL 171-134-01

How To Order

General Specification		Slash Sheet		Wire Gage (AWG) *See Table I, opposite page*		Color Code Designator *Per MIL-STD-681*
M22759	/	33	-	24	-	9



Custom micro and nanominiature flex solutions

Build-to-print interconnect assemblies that combine circuit board technology and cabling into a lightweight, integrated package.

Glenair turnkey design, termination and assembly services available worldwide.

Glenair®

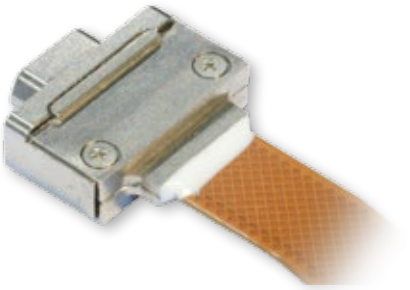
For more information contact Glenair at **818-247-6000** or visit our website at **www.glenair.com**

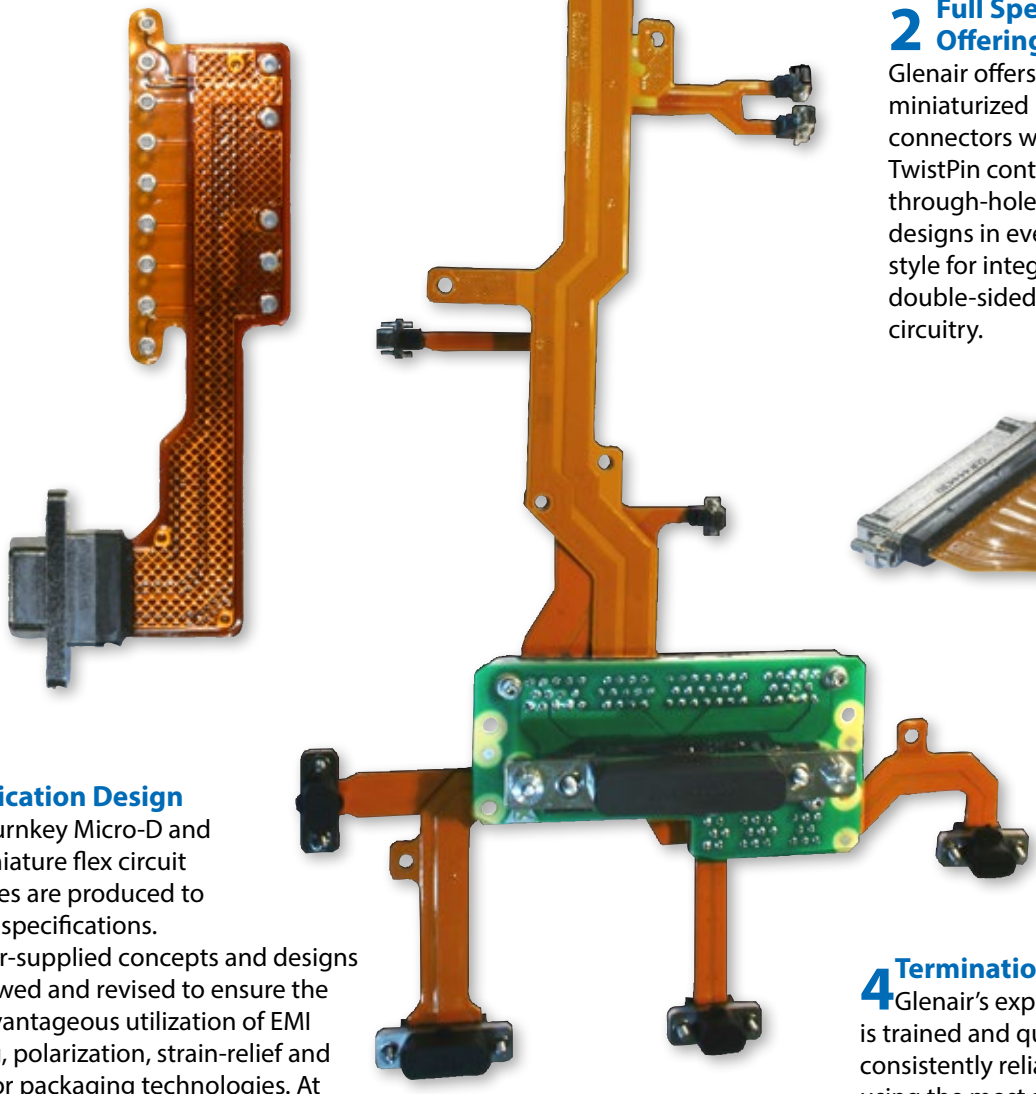
Flex circuit assemblies for mission-critical applications

Four reasons to specify flex in your next application

1 Unsurpassed Experience in Micro/Nano Flex Circuit Assembly

Glenair has been integrating Micro-D and Nanominiature connectors into flex circuitry for over 30 years. Our technical capabilities include design and layout of turnkey assemblies as well as the production of custom-configured micro and nano interconnects for maximum size and weight savings.





2 Full Spectrum Product Offering

Glenair offers a complete range of miniaturized printed circuit board connectors with high-reliability TwistPin contacts. We supply both through-hole and surface mount designs in every angle and mounting style for integration into single-sided, double-sided and multilayered flex circuitry.

3 Application Design

Our turnkey Micro-D and Nanominiature flex circuit assemblies are produced to exacting specifications. Customer-supplied concepts and designs are reviewed and revised to ensure the most advantageous utilization of EMI shielding, polarization, strain-relief and connector packaging technologies. At Glenair, the final design solution is optimized to meet the exact mechanical and electronic requirements of the target environment.

4 Termination Expertise

Glenair's experienced workforce is trained and qualified to produce consistently reliable circuit terminations using the most advanced techniques and technologies, including automated solder reflow systems.

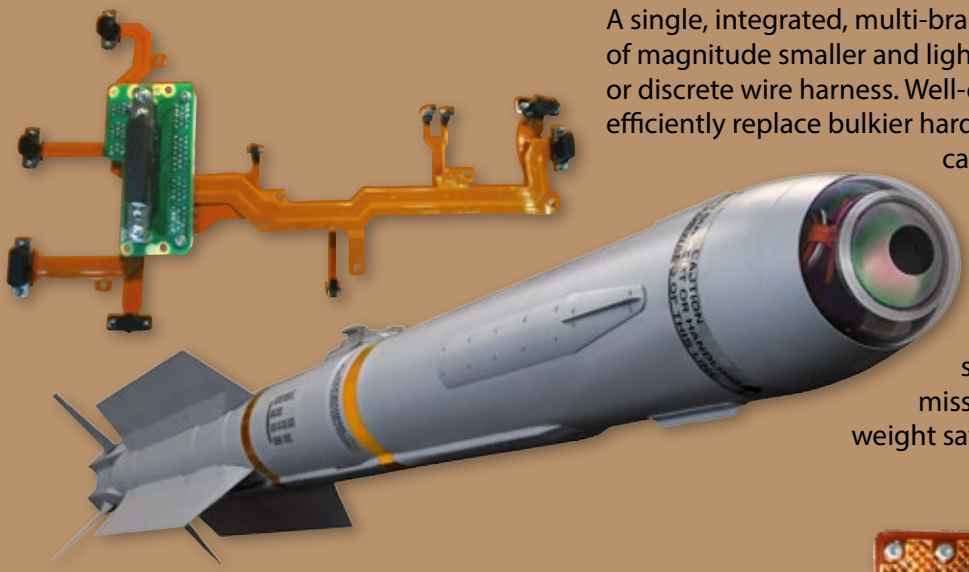
J

Lightweight and Versatile Flex Circuitry

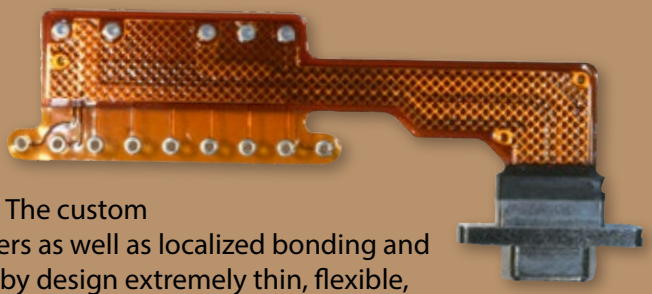
Connector qualifications and design expertise help make Glenair the world's premier high-reliability flex circuitry termination/assembly facility

Flex circuitry combines ordinary printed circuit board technology and wiring into a single, integrated package. Glenair offers unsurpassed experience and expertise in flex circuit integration and termination for mission-critical applications. Our Mansfield, England and Glendale, California cable shops have been integrating Glenair manufactured connectors into flex circuitry for over 30 years. Our technical capabilities include valuable design and layout experience with custom rigid and multilayered flex assemblies and the ability to terminate the assemblies to Glenair's broad range of miniaturized rectangular and circular connectors, including qualified MIL-DTL-83513 and MIL-DTL-32139 products. The benefits of a Glenair produced "flexi" compared to discrete wiring solutions include:

Unsurpassed size and weight reduction



A single, integrated, multi-branch flex circuit assembly is orders of magnitude smaller and lighter than an equivalent ribbon cable or discrete wire harness. Well-conceived flex circuit designs can efficiently replace bulkier hard printed circuit boards, heavier cable runs, and hard-to-manage loose connectors and accessories. The ability to exactly shape the flex circuit to take advantage of the limited space in densely packaged electronic enclosures, such the seeker housing in an air-to-ground missile, results in unequaled size and weight savings.



Outstanding mechanical performance

Flex circuitry is extremely durable and capable of withstanding high levels of vibration, shock, and other forms of mechanical stress. The custom nature of flex circuitry designs allows for the incorporation of stiffeners as well as localized bonding and termination to standard boards. Flex circuitry is by design extremely thin, flexible, lightweight and low mass, which directly reduces the impact on solder joints and other physical points of contact within the equipment enclosure. Users of flex circuitry expect and receive extremely long duty cycles, vibration resistance, as well as long-term performance and high durability. The fixed shape of the flex circuit assembly delivers reliable and repeatable installation with proven resistance to vibration-related wear cycles—making flex circuitry ideally suited for use in aircraft avionics, and other electronic packages which are subject to severe physical stress.

Convenient packaging and integration

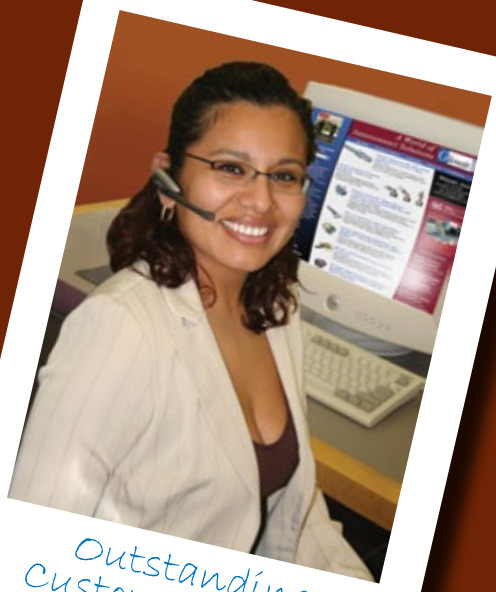
Flex circuit assemblies are ideally suited for space-constrained electronic packages and enclosures, or for interconnect systems that are required to flex in 3 axes during normal use. Flex circuitry offers complete design freedom to configure boards and wiring according to the unique packaging and space constraints of even the most densely-packed electronic enclosures. In mission-critical applications such as tactical command, control and communication technologies, the ability to reduce or even eliminate discrete wiring and boards in favor of hybrid flex circuitry helps designers make the most efficient use of available space.

Reliable resistance to Harsh environments

All forms of flex and rigid flex circuitry are encapsulated in polyimide materials that deliver outstanding protection of conductors. This unique dielectric material is ideally suited for interconnect applications that must perform in even the harshest application environments. The standards for resistance to temperature extremes, repetitive flex cycles, exposure to caustic chemicals, and UV radiation are defined in military specifications which include MIL-PRF-31032/3A and MIL-PRF-31032/4A. Other specifications adhered to by flex manufacturers used by Glenair include IPC standards that regulate base materials, dielectrics, adhesives and other key materials.

Why Choose GLENAIR?

Plenty of Raw Materials!



Outstanding Customer Service!

In-House Assembly!

Abundant Machining Capacity!

Huge "Same-Day" Inventory!

One of North America's and Machining

High-Production Injection Molding Equipment

State-of-the-Art Plating Capabilities

The Industry's Most Experienced EMI/RFI Braided Shielding Specialists

Glenair®

Largest CNC Milling Installations

Clean Rooms for Filter Array and Printed Circuit Board Assembly

Glenair®

Out of This World

INTERCONNECT SOLUTIONS

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