Series 806 Mil-Aero VersaLink™ Connectors

806-044 VersaLink Plug

PART NUMBER DEVELOPMENT						
Sample Part Number	**806-044**	**-ME**	**16-10V4**	**B**	**M**	**A**
Series / Basic No.	**806-044** = Plug					
Material / Finish	**ME** = Aluminum alloy, electroless nickel (96 hour salt spray) **MT** = Aluminum alloy, nickel-PTFE **NF** = Aluminum alloy, cad/O.D. Over electroless nickel **ZR** = Aluminum alloy, zinc nickel, black (trivalent chromium) **Z1** = Aluminum alloy, stainless steel passivated **ZL** = Aluminum alloy, electro-deposited nickel					
Insert Layout	See Insert Arrangement Table (See page 13–14 for layouts)					
Contact Gender	**A** = Pin, less contact **B** = Socket, less contact					
Shell Style	**M** = Metric thread **B** = Banding platform					
Polarization	**A**, **B**, **C**, **D**, **E**, **F**; see Polarization Table					

MATERIAL / FINISH

- Shell: see part number development
- Pin contact: copper alloy / 50µ gold over nickel
- Socket contact: copper alloy with stainless steel hood (22HD and 20HD) / 50µ gold over nickel, contact hood passivate
- Insulators: high-grade rigid dielectric
- Seals: fluorosilicone/silicone blend
- EMI spring: beryllium copper / nickel
- Contact retention clip: copper alloy / nickel
- Anti-decoupling ratchet spring: stainless steel / passivate

PERFORMANCE SPECIFICATIONS

- Current rating for 20HD and 22HD
  20 AWG: 7.5 amps
  22 AWG: 5 amps
- DWV
  20HD: 1800 VAC at sea level
  22HD: 1300 VAC at sea level
  VersaLink: 500 VAC at sea level
- Insulation resistance:
  5000 MΩ min. at ambient temperature
  1000 MΩ min. at elevated temperature
- Operating temperature: -65° to +200° C

NOTES

1. Glenair strongly recommends the use of strain relief 620VS090 or equivalent when using a metric accessory thread shell. Glenair strongly recommends overmolding when using a banding porch shell.
2. Consult factory for use with other cables.
3. Groove for use with overmold strain relief or 809-060 heat shrink boots.
4. Terminate shield with Glenair BandMaster ATS tool 601-108 & Glenair Nanoband.
5. VersaLink contacts are purchased separately. See following drawings for more information:
   VersaLink: 853-045 & 853-046
   22HD: 850-094 & 850-095
   20HD: 809-204 & 809-205
   See 8574-0001 for pre-terminated VersaLink contacts. Contact factory for complete cable assemblies.
6. Plug connectors mate with 806-045 thru 806-049 of the same arrangement, polarization, and opposite gender.
7. Blue color band indicates rear release retention.

INSERT ARRANGEMENT			
SHELL SIZE-LAYOUT	NUMBER OF CONTACTS		
	VersaLink	22HD	20HD
8-1V[1]	1		
9-2V[2]	2		
10-2V2	2		2
11-4V[3]	4		
11-2V9[4]	2	9	
12-4V4	4	4	
14-6V7	6	7	
14-4V15[5]	4	15	
16-10V4	10	4	
16-8V10	8	10	
18-14V4	14	4	
18-8V31	8	31	
20-18V8	18	8	
22-25V4	25	4	
22-16V19	16	19	
24-32V	32		
24-16V66	16	66	

Support for:
1. 10G SPE
2. SATA 3
3. 40G Ethernet
4. USB 3.1 Gen 2
5. USB 3.2, USB 4, HDMI, DP, DVI Single Link

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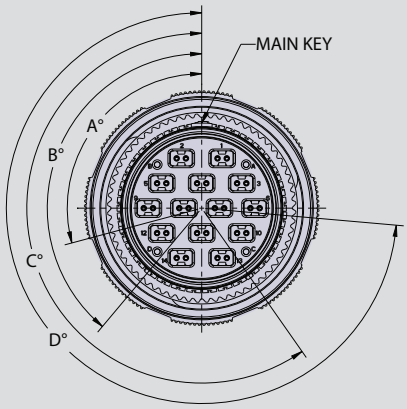
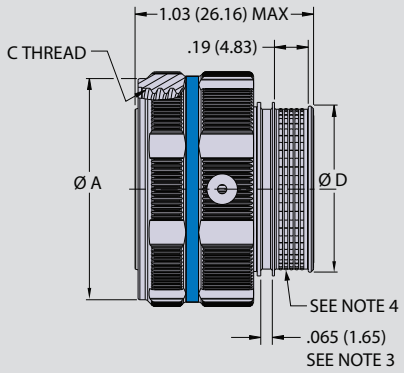
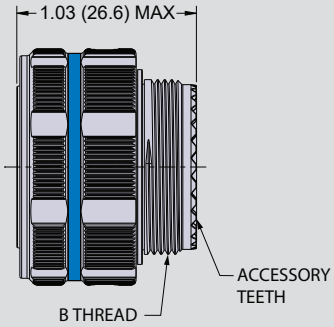
806-044 VersaLink Plug





BAND PLATFORM



ACCESSORY THREAD

POLARIZATION				
POS	A	B	C	D
A	105	140	215	265
B	102	170	248	305
C	80	150	230	295
D	68	140	205	275
E	64	155	234	304
F	72	120	200	298

CONNECTOR DIMENSIONS				
SHELL SIZE	A MAX	B THREAD	C MATING THREAD	D
8	0.676 (17.17)	M10 X 1-6g.100R	.5000-.067P-.2L-TS-2B	0.327 (8.31)
9	0.771 (19.58)	M12 X 1-6g.100R	.5625-.067P-.2L-TS-2B	0.406 (10.31)
10	0.832 (21.13)	M14 X 1-6g.100R	.6250-.067P-.2L-TS-2B	0.484 (12.29)
11	0.890 (22.61)	M15 X 1-6g.100R	.6875-.067P-.2L-TS-2B	0.524 (13.31)
12	0.950 (24.13)	M17 X 1-6g.100R	.7500-.067P-.2L-TS-2B	0.603 (15.32)
14	1.110 (28.19)	M19 X 1-6g.100R	.8750-.067P-.2L-TS-2B	0.681 (17.30)
16	1.170 (29.72)	M22 X 1-6g.100R	1.000-.067P-.2L-TS-2B	0.782 (19.86)
18	1.350 (34.29)	M25 X 1-6g.100R	1.1250-.067P-.2L-TS-2B	0.899 (22.83)
20	1.470 (37.34)	M28 X 1-6g.100R	1.250-.067P-.2L-TS-2B	1.043 (26.49)
22	1.600 (40.64)	M31 X 1-6g.100R	1.3750-.067P-.2L-TS-2B	1.155 (29.34)
24	1.710 (43.43)	M34 X 1-6g.100R	1.500-.067P-.2L-TS-2B	1.273 (32.33)

VERSALINK CONTACTS SOLD SEPARATELY	
Pin	853-045
Socket	853-046
Pin Pigtail	8574-0001-AN
Socket Pigtail	8574-0001-BN
Pin-Pin Cable	8574-0001-AA
Pin-Socket Cable	8574-0001-AB
Socket-Socket Cable	8574-0001-BB

SIGNAL AND POWER CONTACTS SOLD SEPARATELY		
#22HD Pin	Wire size #22–#28	850-094-1
#22HD Pin	Wire size #26–#30	850-094-2
#22HD Socket	Wire size #22–#28	850-095-1
#22HD Socket	Wire size #26–#30	850-095-2
#20HD Pin	Wire size #20–#24	809-204
#20HD Socket	Wire size #20–#24	809-205

COMPATIBLE SPEEDLINE CABLE	
Twisted Pair	963-068-26
Flat Pair	963-069-26

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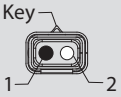
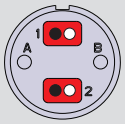
Insert Arrangements

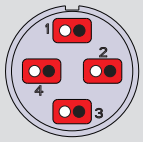
VERSALINK PIN INTERFACE SHOWN, SOCKET INTERFACE MIRRORED

Versalink Pin For Reference



Insert Arrangement
Mating Face View of Pin Contacts

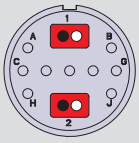


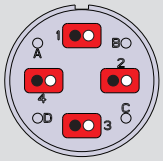


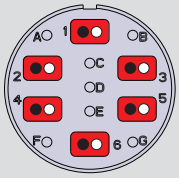
Cavities are upside down.

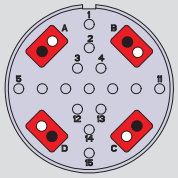
Series 806	8-1V	9-2V	10-2V2		11-4V
Contact Size	VersaLink	VersaLink	VersaLink	20HD	VersaLink
No. of Contacts	1	2	2	2	4
Protocol(s) Supported	10GBase-T1 Ethernet	SATA 3			40G Ethernet

Insert Arrangement
Mating Face View of Pin Contacts



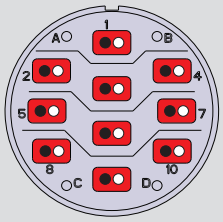


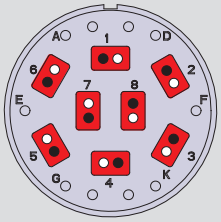


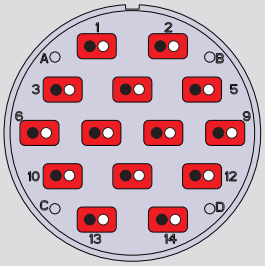


Series 806	11-2V9		12-4V4		14-6V7		14-4V15*	
Contact Size	VersaLink	22HD	VersaLink	22HD	VersaLink	22HD	VersaLink	22HD
No. of Contacts	2	9	4	4	6	7	4	15
Protocol(s) Supported	USB 3.1 Gen 2						USB 3.1 Gen 2 Type C, USB 3.2, USB4, HDMI, DisplayPort, DVI Single Link	

Insert Arrangement
Mating Face View of Pin Contacts







Series 806	16-10V4		16-8V10*		18-14V4	
Contact Size	VersaLink	22HD	VersaLink	22HD	VersaLink	22HD
No. of Contacts	10	4	8	10	14	4

* For arrangements with angled cavities, contact keyway always faces away from center.

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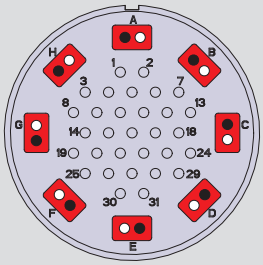
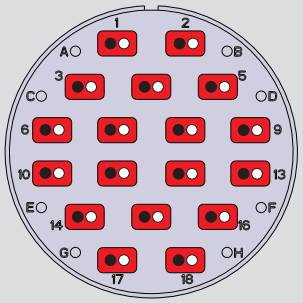
Insert Arrangements

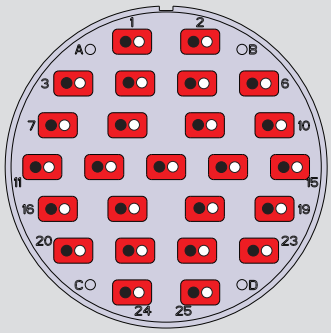
Insert Arrangement
Mating Face View of Pin Contacts

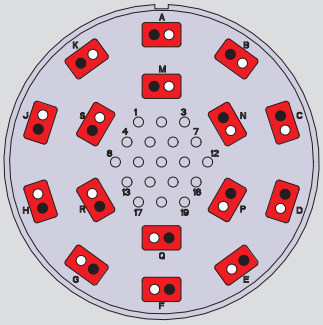




Series 806	18-8V31*		20-18V8	
Contact Size	VersaLink	22HD	VersaLink	22HD
No. of Contacts	8	31	18	8

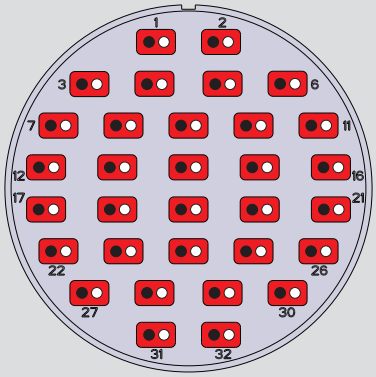
Insert Arrangement
Mating Face View of Pin Contacts

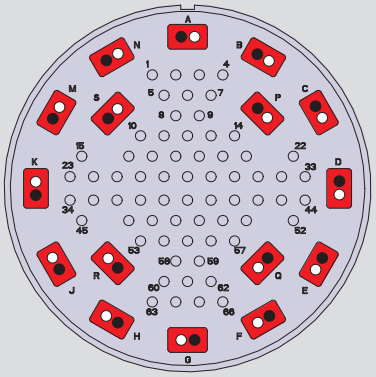




Series 806	20-25V4		22-16V19*	
Contact Size	VersaLink	22HD	VersaLink	22HD
No. of Contacts	25	4	16	19

Insert Arrangement
Mating Face View of Pin Contacts





Series 806	24-32V	24-16V66*	
Contact Size	VersaLink	VersaLink	22HD
No. of Contacts	32	16	66

* For arrangements with angled cavities, contact keyway always faces away from center.

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Performance Specifications

STANDARD MATERIALS AND FINISHES		
DESCRIPTION	**MATERIAL**	**FINISH**
Pin Contact	Copper alloy	50 microinches gold over nickel
Socket Contact	Copper alloy, with stainless steel hood (22HD and 20HD contacts only)	50 microinches gold over nickel Contact hood: passivate
Insulators	High-grade rigid dielectric	None
Seals	Fluorosilicone/silicone blend, blue	None
EMI Spring	Beryllium copper	Nickel
Shell, Coupling Nut, Jam-nut	Aluminum alloy or stainless steel	See how-to-order tables for finish options
Contact Retention Clip	Beryllium copper	Nickel
Anti-Decoupling Ratchet Spring	Stainless steel	Passivate

PERFORMANCE SPECIFICATION

TEST DESCRIPTION	REQUIREMENT	PROCEDURE
Dielectric withstanding voltage at sea level	Contact Size / Altitude / Voltage: 20HD — Sea level — 1800 22HD — Sea level — 1300	MIL-DTL-38999M para. 4.5.11.1 EIA-364-20 Method A 2 mA maximum leakage current Unmated pairs
Dielectric withstanding voltage at altitude	Contact Size / Altitude / Voltage: 20HD — 50,000 ft — 1000 20HD — 70,000 ft — 1000 20HD — 100,000 ft — 1000 22HD — 50,000 ft — 800 22HD — 70,000 ft — 800 22HD — 100,000 ft — 800	MIL-DTL-38999M para. 4.5.11.2 EIA-364-20 Method A 2 mA maximum leakage current Mated pairs
Insulation resistance at ambient temperature	5000 megohms minimum	MIL-DTL-38999M Para. 4.5.10.1 EIA-364-21
Insulation resistance at elevated temperature	1000 megohms minimum	MIL-DTL-38999M Para. 4.5.10.2 EIA-364-21
Contact resistance at 25°C, 22HD and 20HD crimp contacts	Wire Size / Test Current Amperes / Maximum Voltage Drop (millivolts) Initial / After Conditioning: 20 — 7.5 — 55 — 66 22 — 5 — 73 — 88 24 — 3 — 45 — 54 26 — 2 — 52 — 63 28 — 1.5 — 54 — 65 30 — 1 — 60 — 73	AS39029C Para. 4.7.5 EIA-364-06 Silver-plated wire
Contact resistance at 200° C, 22HD and 20HD crimp contacts	Wire Size / Test Current Amperes / Maximum Voltage Drop (millivolts): 20 — 7.5 — 94 22 — 5 — 125 24 — 3 — 77 26 — 2 — 89 28 — 1.5 — 92 30 — 1 — 103	AS39029C Para. 4.7.5 EIA-364-06 Silver-plated wire
Low level contact resistance, 22HD and 20HD crimp contacts	Wire Size / Maximum Contact Resistance (milliohms) Initial Values / After Conditioning: 20 — 9 — 11 22 — 15 — 17 24 — 20 — 23 26 — 31 — 38 28 — 50 — 60 30 — 75 — 88	AS39029C Para. 4.7.4 EIA-364-23 Silver plated wire

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Performance Specifications

PERFORMANCE SPECIFICATION

TEST DESCRIPTION	REQUIREMENT	PROCEDURE
Shell-to-shell conductivity	Finish Code / Shell Matl/Fin / Millivolt Drop (mV) NF — Al/OD Cad — 2.5 MT — Al/Ni-PTFE — 2.5 ME — Al/EN — 1.0 ZR — Al/Zn-Ni — 2.5 Z1 — SST/pass. — 10.0 ZL — SST/Ni — 1.0	MIL-DTL-38999M Para. 4.5.25 EIA-364-83
Backshell shield braid to shell conductivity	Finish Code / Shell Matl/Fin / Millivolt Drop (mV) NF — Al/OD Cad — 5.0 MT — Al/Ni-PTFE — 5.0 ME — Al/EN — 3.5 ZR — Al/Zn-Ni — 5.0 Z1 — SST/pass. — 15.0 ZL — SST/Ni — 3.5	MIL-DTL-38999M Para. 4.5.25.1 EIA-364-83
Indirect lightning strike	No evidence of damage which could impair proper functioning. Connectors shall meet shell-to-shell conductivity, DWV and coupling torque.	MIL-DTL-38999M Para. 4.5.47 EIA-364-75 10,000 Amps peak current
EMI shielding	Freq. MHz / Leakage Attenuation, (dB) minimum: Electroless Nickel Finish / Cadmium, Nickel-PTFE, Zinc-Nickel Finish 100 — 90 — 90 200 — 88 — 88 300 — 88 — 88 400 — 87 — 87 800 — 85 — 85 1,000 — 85 — 85 1,500 — 76 — 69 2,000 — 70 — 65 3,000 — 69 — 61 4,000 — 68 — 58 6,000 — 66 — 55 10,000 — 65 — 50	MIL-DTL-38999M Para. 4.5.28
Durability	No evidence of damage which could impair proper functioning following 500 cycles of mating and unmating.	MIL-DTL-38999M Para. 4.5.8 EIA-364-09
Coupling and uncoupling torque	Shell size / Maximum Engagement lbs-inch. / Minimum Disengagement in-lb 8 — 8 — 2 9 — 8 — 2 10 — 12 — 2 11 — 12 — 2 12 — 12 — 2 14 — 16 — 2 16 — 20 — 3 18 — 24 — 3 20 — 28 — 3 22 — 32 — 5 24 — 36 — 5	MIL-DTL-38999M Para. 4.5.7 EIA-364-114
Insert retention	100 pounds per square inch, 25 pound minimum force	MIL-DTL-38999M Para. 4.5.12 EIA-364-35
External bend moment	Shell size / Inch-Pound 8 — 100 9 — 100 10 — 100 11 — 200 12 — 300 14 — 400 16 — 500 18 — 600 20 — 700 22 — 800 24 — 900	MIL-DTL-38999M Para. 4.5.16 EIA-364-43

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Performance Specifications

PERFORMANCE SPECIFICATION		
TEST DESCRIPTION	**REQUIREMENT**	**PROCEDURE**
Contact retention	Contact size: 22HD — Pounds ± 10 percent: 10 Contact size: 20HD — Pounds ± 10 percent: 10	MIL-DTL-38999M Para. 4.5.20.1 EIA-364-29
Magnetic permeability	2 µ maximum	MIL-DTL-38999M Para. 4.5.48 EIA-364-54
Contact engaging /separation force	Contact forces shall meet AS39029 Table 9 requirements	AS39029C Para. 4.7.6 EIA-364-37
Temperature cycling (thermal shock)	No evidence of damage detrimental to the function of the connector	MIL-DTL-38999M Para. 4.5.4 EIA-364-32 Mated connectors, -65° C to +200° C
Random vibration, ambient temperature, 49g rms	No discontinuities of 1 microsecond or longer	MIL-DTL-38999M Para. 4.5.23.2.4 EIA-364-28 Test Condition V
Sine vibration, 60g	No discontinuities of 1 microsecond or longer	MIL-DTL-38999M Para. 4.5.23.2.1 with Figure 24 accessory load 12 hours in each of 3 axes 4 hours at ambient, 4 hours at -55° C, 4 hours at +200° C
Mechanical shock, 300g	No discontinuities of 1 microsecond or longer	MIL-DTL-38999M Para. 4.5.24.1 EIA-364-27
Humidity, cyclic	Meet DWV and IR test	MIL-DTL-38999M Para. 4.5.26 EIA-364-31 Method 4 10 cycles, 10 days, 25 – 65°C 80 – 100% RH
Ozone exposure	No evidence of damage detrimental to the function of the connector	MIL-DTL-38999M Para. 4.5.29 EIA-364-14
Thermal vacuum outgassing	All nonmetallic materials shall not exceed 1.0% Total Mass Loss and 0.1% Total Volatile Condensable Materials. Applicable only to connectors that have been subjected to optional thermal vacuum outgassing.	MIL-DTL-38999M Para. 4.5.42 ASTM E595

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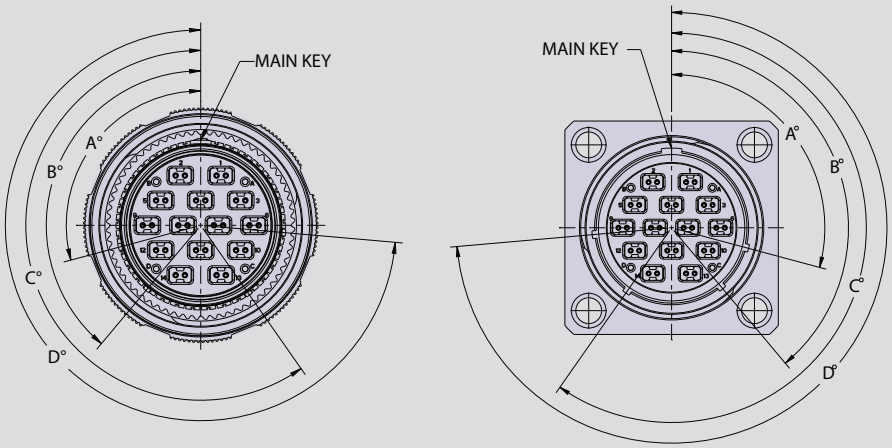
Polarization and Connector Torque Values

SERIES 806 CONNECTOR POLARIZATION



POLARIZATION				
POS	A	B	C	D
A	105	140	215	265
B	102	170	248	305
C	80	150	230	295
D	68	140	205	275
E	64	155	234	304
F	72	120	200	298

SERIES 806 CONNECTOR TORQUE VALUES

SERIES 806 RECOMMENDED TORQUE VALUES FOR HIGH VIBRATION ENVIRONMENTS						
	Standard In-Lbf		Composite In-Lbf		High Vibration In-Lbf	
Shell Size	Min	Max	Min	Max	Min	Max
8	42	52	20	25	57	68
9	51	61	20	30	66	76
10	63	73	20	30	87	97
11	71	81	20	30	103	113
12	79	89	25	35	107	117
14	105	115	25	35	121	131
16	111	121	25	35	139	149
18	111	121	30	40	139	149
20	111	121	30	40	139	149
22	131	141	35	45	175	185
24	131	141	35	45	175	185

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Dimensions in Inch (millimeter) are subject to change without notice.