

# Amphe-Lite Series

## contacts, sealing plugs, plastic dust caps

### STANDARD CONTACTS FOR AMPHE-LITE SERIES

Contact Size	Pin Part Number	Socket Part Number
8 (Coax)	21-33102-21	21-33101-21
8 (Twinax)	21-33190-529	21-33191-530
10 (Power)	10-251415-105	10-407035-105
12	10-251415-12H	10-597261-121
16	10-251415-165	10-407035-165
20	LP-251415-205	10-597261-201
22D	LP-251415-725 or 10-597434-725	10-597261-721 or 10-597825-451

Above part numbers include standard 500 cycle finish designation - gold plating over suitable underplate in accordance with MIL-C-39029.

For other contact options available for use in Amphe-Lite connectors, (thermo-couple) consult Sidney, NY.

### PLASTIC DUST CAPS

Shell Size	Plug	Receptacle
9	10-70506-14	10-70500-10
11	10-70506-16	10-70500-12
13	10-70500-18	10-70500-14
15	10-70500-20	10-70500-16
17	10-70500-22	10-70500-19
19	10-70500-24	10-70500-20
21	10-70524-1	10-70500-22
23	10-70506-28	10-70500-24
25	10-70500-28	10-70524-1

For metal protection caps see pages 12 and 13.

### SEALING PLUGS

Contact Size	Proprietary No.
8 (Coax)	10-482099-8
8 (Twinax)	T3-4008-59P
10 (Power)	10-576225
12	10-405996-121
16	10-405996-161
20	10-405996-201
22D	10-405996-221

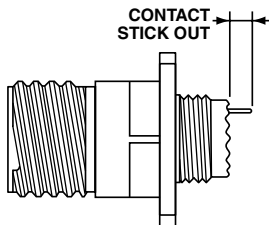
# Amphe-Lite Series

## contacts – printed circuit board, wire wrap

### SOCKETS

PCB Socket Contacts	Size	Tail Dia	Contact Stickout Max/Min (See Illustration below)		
			AL00	AL06	AL07
10-497623-15	22D	.019	.291 .226	.316 .251	.242 .182
10-497623-25	22D	.019	.868 .803	.893 .828	.819 .759
10-497623-35	22D	.019	.348 .283	.373 .308	.299 .239
10-497623-45	22D	.019	.208 .143	.233 .168	.159 .099
10-497623-75	22D	.019	.146 .081	.171 .106	.097 .037
10-497623-105	22D	.019	.028 NS	.053 .000	.021 NS
10-497623-145	22D	.019	.609 .539	.634 .564	.560 .495
10-497623-155	22D	.019	.423 .358	.448 .383	.374 .314
10-497643-15	20	.019	.348 .294	.373 .319	.299 .250
10-497643-25	20	.019	.213 .159	.238 .184	.164 .115
10-497643-35	20	.019	.555 .501	.580 .526	.506 .457
10-497643-45	20	.019	.138 .084	.163 .109	.089 .040
10-497650-15	16	.040	.255 .201	.280 .226	.206 .157
Wire Wrap Contacts		Tail Square			
10-497577-15	22D	.025	.155 .090	.180 .115	.106 .046
10-497577-25	22D	.025	.002 NS	.027 NS	NS NS
10-497577-35	22D	.025	.201 .136	.226 .161	.152 .092
10-497577-55	22D	.025	.566 .501	.591 .526	.517 .457
10-497621-15	20	.025	.151 .101	.176 .126	.102 .057
10-497621-25	20	.025	.605 .555	.630 .580	.556 .511
10-497621-35	20	.025	.308 .258	.333 .283	.259 .214

All dimensions for reference only.  
Consult Sidney, NY for specific contact contour stickout data.  
NS designates No Stickout.



See also catalog 12-170, Amphenol Cylindrical Connectors for PCB Applications. This catalog provides the most commonly used insert pattern pin-out drawings which have been tooled for the purpose of attaching cylindrical connectors to printed circuit boards.

### PINS

PCB Pin Contacts	Size	Tail Dia	Contact Stickout Max/Min (See Illustration below)		
			AL00	AL06	AL07
10-407552-15	22M	.019	.335 .280	.360 .305	.286 .236
10-407552-55	22M	.019	.224 .169	.249 .194	.175 .125
10-407552-85	22M	.019	.060 .010	.085 .035	.011 NS
10-407552-95	22M	.019	NS	NS	NS
10-407552-115	22M	.019	.002 NS	.023 NS	NS
10-497640-15	20	.019	.348 .298	.373 .323	.299 .254
10-497640-25	20	.019	.213 .163	.238 .188	.164 .119
10-497640-45	20	.019	NS	NS	NS
10-497640-65	20	.019	.138 .088	.163 .113	.089 .044
10-497596-15	20	.025	.058 .012	.083 .037	.009 NS
10-497596-25	20	.025	.148 .102	.173 .127	.099 .058
10-497596-35	20	.025	.229 .183	.254 .208	.180 .139
10-497596-55	20	.025	.346 .300	.371 .325	.297 .256
10-497695-15	16	.040	.255 .205	.280 .230	.206 .161
10-497630-25	16	.062	.348 .298	.373 .323	.299 .254
10-497630-35	16	.062	.060 .010	.085 .035	.011 NS
10-497630-45	16	.062	.108 .062	.133 .087	.059 .018
10-597502-15	12	.081	.228 .178	.252 .203	.179 .134
Wire Wrap Contacts		Tail Square			
10-407572-15	22D	.025	.014 NS	.498 .007	NS NS
10-407572-35	22D	.025	.155 .105	.180 .130	.106 .061
10-407572-45	22D	.025	.255 .205	.280 .230	.206 .161
10-407572-75	22D	.025	.521 .475	.546 .500	.472 .431
10-407584-25	20	.025	.605 .559	.630 .584	.556 .515
10-407584-35	20	.025	.308 .262	.333 .287	.259 .218

PCB socket and pin numbers include finish designation - gold plating over suitable underplate in accordance with MIL-C-39029. For other finish variations, consult Sidney, NY.

Note: 22M and 22D contacts are interchangeable.

For other contact options available for use in Amphe-Lite connectors (thermocouple, fiber optic), consult Sidney, NY.

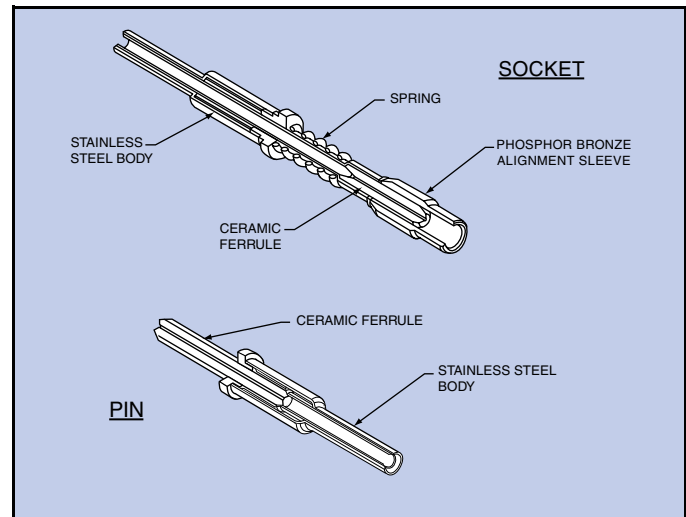
# Amphe-Lite Series

## fiber optic termini – multi-mode, size 16

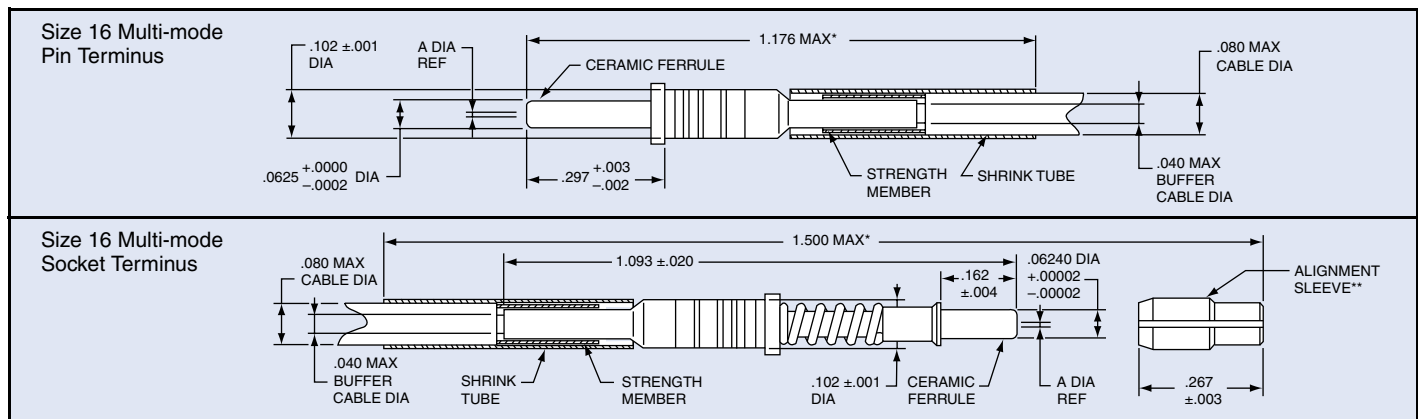
### Amphenol® Multi-mode, Size 16 Termini

#### Features and Performance Levels:

- Ceramic alignment ferrule which precisely positions the fiber within the termini
- Phosphor bronze alignment sleeve, assembled on the socket after polishing insures accurate fiber to fiber alignment (a ceramic alignment sleeve is also available).
- Typical insertion loss for 100/140 fiber with .2 NA at 820 nm is .5 to .7 dB using Air Gap (AG) polish technique  
Use of the ceramic ferrule and sleeve maximizes the ability to hold extremely tight dimensional tolerances while maintaining accurate concentricity, thus providing superior and consistent optical loss performance.
- Termination accomplished using the industry proven epoxy/polish method. Can be polished Air Gap (AG) or Physical contact (PC).
- Socket cleaning optional. Consult Amphenol, Sidney, NY for termini cleaning tool. For application tools consult Sidney, NY.



Multi-mode Size 16 Fiber Optic Termini



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

\* Indicated dimension when fully assembled.  
\*\* Alignment sleeve shipped unassembled.

### Ordering Information Multi-mode Termini (Size 16) for Amphe-Lite Connectors

Fiber Size† Core/Cladding Dia (Microns)	Size 16 Socket	Size 16 Pin	A Dia Ref	
			Inches	Microns
50/125	CF-198035-010	CF-198036-010	.0050	127
62.5/125				
100/140	CF-198035-017	CF-198036-017	.0057	145
100/140/172	CF-198035-029	CF-198036-029	.0069	175
100/140/172	CF-198035-29A	CF-198036-29A	.0068	173.5
200/230	CF-198035-053	CF-198036-053	.0093	236
200/240	CF-198035-057	CF-198036-057	.0097	245
200/280	CF-198035-074	CF-198036-074	.0114	290
200/300	CF-198035-080	CF-198036-080	.0120	305

† Additional sizes available upon request: consult Amphenol, Sidney, NY for availability.

Power contacts can be purchased separately, contact Amphenol, Sidney, NY.

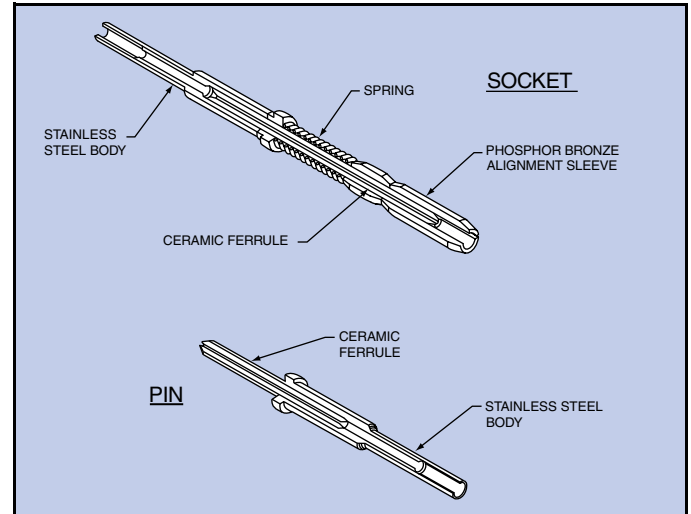
# Amphe-Lite Series

## fiber optic termini – multi-mode, size 20

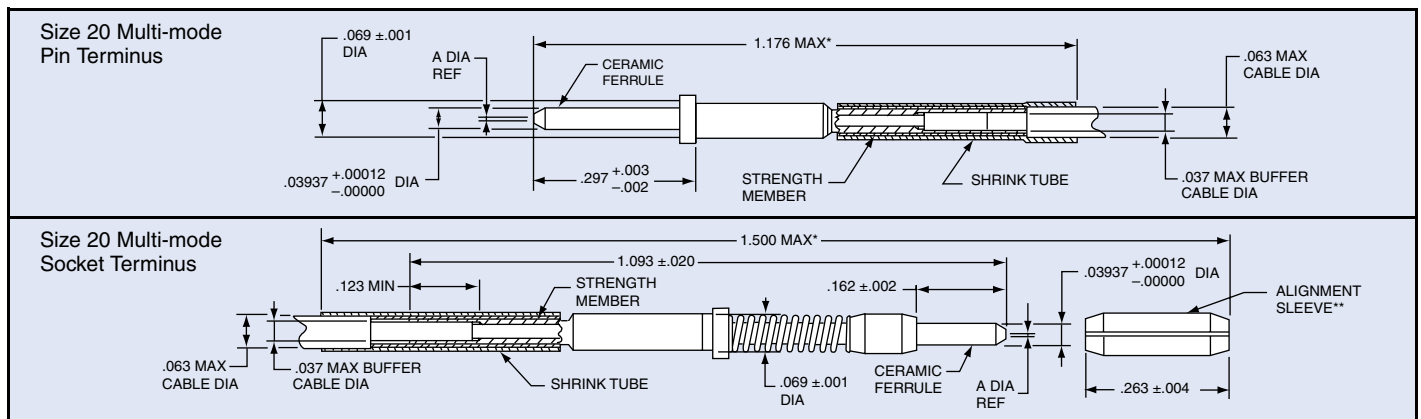
### Amphenol® Multi-mode, Size 20 Termini

#### Features and Performance Levels:

- Designed for use in size 20 cavities of Amphe-Lite connectors
- Designed with similar high performance components as the proven size 16 termini
- Comparable performance and reliability to the size 16 termini can be expected
- Offers increased termini density in Amphenol Amphe-Lite connectors
- Maintains fiber optic/electrical hybrid capabilities
- Allows for multiple fiber accommodations
- Termination accomplished using the industry proven epoxy/polish method. Can be polished Air Gap (AG) or Physical contact (PC).
- Socket cleaning optional. Consult Amphenol, Sidney, NY for termini cleaning tool. For application tools consult Sidney, NY.



Multi-mode Size 20 Fiber Optic Termini



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

\* Indicated dimension when fully assembled.  
\*\* Alignment sleeve shipped unassembled.

### Ordering Information Multi-mode Termini (Size 16) for Amphe-Lite Connectors

Fiber Size† Core/Cladding Dia (Microns)	Size 20 Socket	Size 20 Pin	A Dia Ref	
			Inches	Microns
50/125	CF-198080-010	CF-198081-010	0.0050	127
62.5/125				
100/140	CF-198080-017	CF-198081-017	0.0057	145

† Additional sizes available upon request: consult Sidney, NY for availability.  
Power contacts can be purchased separately, contact Sidney, NY.

# Amphe-Lite Series

## application tools

The following data includes information pertaining to the application tools which have been established for crimping, inserting, and removing contacts incorporated in the Amphe-Lite Series connectors. For additional information on coaxial contact tools see catalog 12-130.

All crimping tools included are the “full cycling” type.

There is a possibility of additional crimping tools other than those included being available at present or in the future for this specific application.

### RECOMMENDED CRIMPING TOOLS

Contact Size/Type	Crimping Tool	Turret Die or Positioner
12 Pin and Socket	M22520/1-01	M22520/1-04
16 Pin and Socket	M22520/1-01 M22520/7-01	M22520/1-04 M22520/7-04
20 Pin and Socket	M22520/1-01 M22520/2-01 M22520/7-01	M22520/1-04 M22520/2-10 M22520/7-08
22D Pin	M22520/2-01 M22520/7-01	M22520/2-09 M22520/7-07
22D Socket	M22520/2-01 M22520/7-01	M22520/2-07 M22520/7-05
8 Twinax Center Pin and Socket	M22520/2-01	M22520/2-37
8 Twinax Intermediate Outer Pin & Socket	M22520/5-01	M22520/5-200

Contact Size/Type	Crimping Tool	Turret Die or Positioner
8 Coaxial Inner Pin and Socket	M22520/2-01	M22520/2-31
8 Coaxial Outer Pin and Socket	M22520/5-01	M22520/5-05 Die Closure B
	M22520/5-01	M22520/5-41 Die Closure B
	M22520/10-01	M22520/10-07 Die Closure B
16 Coaxial Inner Pin and Socket	M22520/2-01	M22520/2-35
16 Coaxial Outer Pin and Socket	M22520/4-01	M22520/4-02
12 Coaxial Inner Pin and Socket	M22520/2-01	M22520/2-34
12 Coaxial Outer Pin and Socket	M22520/31-01	M22520/31-02
10 (Power)	TP201423	1716P-1

Where 2 or 3 tools are listed for a contact size, only one tool and its die or positioner are required to crimp the contact.

The above crimping tools and positioners are available from the approved tool manufacturer.

### INSERTION TOOLS

Use with Contact Size	Plastic Tools		Metal Tools			
	MS Part Number	Color	Angle Type		Straight Type Proprietary Part Number	Color
			MS Part Number	Proprietary Part Number		
10 (Power)	M81969/14-05*	Gray / (White)	M81969/8-11	†	†	Green
12	M81969/14-04*	Yellow / (White)	M81969/8-09	11-8674-12	11-8794-12	Yellow
16	M81969/14-03*	Blue / (White)	M81969/8-07	11-8674-16	11-8794-16	Blue
20	M81969/14-10*	Red / (Orange)	M81969/8-05	11-8674-20	11-8794-20	Red
22D	M81969/14-01*	Green / (White)	M81969/8-01	11-8674-24	11-8794-24	Black
8 Coaxial	None Required					
8 Twinax	None		M81969/46-06**	None		Red

### REMOVAL TOOLS

Use with Contact Size	Plastic Tools		Metal Tools				
	MS Part Number	Color	For Unwired Contacts Proprietary Part Number	Angle Type		Straight Type Proprietary Part Number	Color
				MS Part Number	Proprietary Part Number		
10 (Power)	M81969/14-05*	(Gray) / White	†	M81969/8-12	†	†	Green / White
12	M81969/14-04*	(Yellow) / White	11-10050-11	M81969/8-10	11-8675-12	11-8795-12	Yellow / White
16	M81969/14-03*	(Blue) / White	11-10050-10	M81969/8-08	11-8675-16	11-8795-16	Blue / White
20	M81969/14-10*	(Orange) / Red	11-10050-9	M81969/8-06	11-8675-20	11-8795-20	Red / White
22D	M81969/14-01*	(Green) / White	11-10050-7	M81969/8-02	11-8675-24	11-8795-24	Green / White
8 Coaxial	M81969/14-12	Green	None	None	11-9170	DRK264-8††	N/A
8 Twinax	M81969/14-12	Green	None	M81969/46-12**	11-9170	N/A	N/A

The M81969/8, 11-8674, 11-8675, and 11-8794 metal contact insertion and removal tools will accommodate wires having the maximum outside diameter as follows: Contact size 12–.155, 16–.109, 20–.077, 22D–.050. When wire diameters exceed those specified, the plastic tools must be used.

\* Double end insertion/removal tool.

† To be determined.

\*\* Twinax insertion tools are available only in a straight type, metal version..

†† Contact Daniels Manufacturing Co. for availability.

# Amphe-Lite Series

## how to order

Amphenol® Amphe-Lite Composite Connectors can be ordered by coded part number. Ordering procedure is illustrated by part number AL00F9-35PB as shown below:

	AL	00	F	9 - 35	P	B	( )
Connector Type	_____	_____	_____	_____	_____	_____	_____
Shell Style	_____	_____	_____	_____	_____	_____	_____
Service Class	_____	_____	_____	_____	_____	_____	_____
Shell Size	_____	_____	_____	_____	_____	_____	_____
Insert Arrangement	_____	_____	_____	_____	_____	_____	_____
Contact Type	_____	_____	_____	_____	_____	_____	_____
Alternate Positions	_____	_____	_____	_____	_____	_____	_____
Specials	_____	_____	_____	_____	_____	_____	_____

### Connector Type

AL designates Amphe-Lite Connector Series

### Shell Style

00 designates wall mount receptacle  
06 designates straight plug  
07 designates jam nut receptacle

### Service Class

F electroless nickel plated composite  
U black composite, unplated  
X black zinc alloy, conductive, composite

### Shell Size

9 thru 25 available

### Insert Arrangement

See insert arrangement chart, page 3. See insert configurations illustrated on pages 5-8.

### Contact Type

P designates standard 500 cycle pin contacts  
S designates standard 500 cycle socket contacts

### Alternate Positions

Locksmith keying - rotation of minor keys. "N" not required for normal position, see page 4.

### Specials

Specials include optional contact styles and contact platings. Also includes a high decoupling style of Amphe-Lite. Consult Amphenol, Sidney, NY for part numbering suffix for specials.

### Standard Packaging

The Amphe-Lite Series is shipped with connectors and contacts packaged in bulk. Consult Amphenol, Sidney NY for special packaging requirements