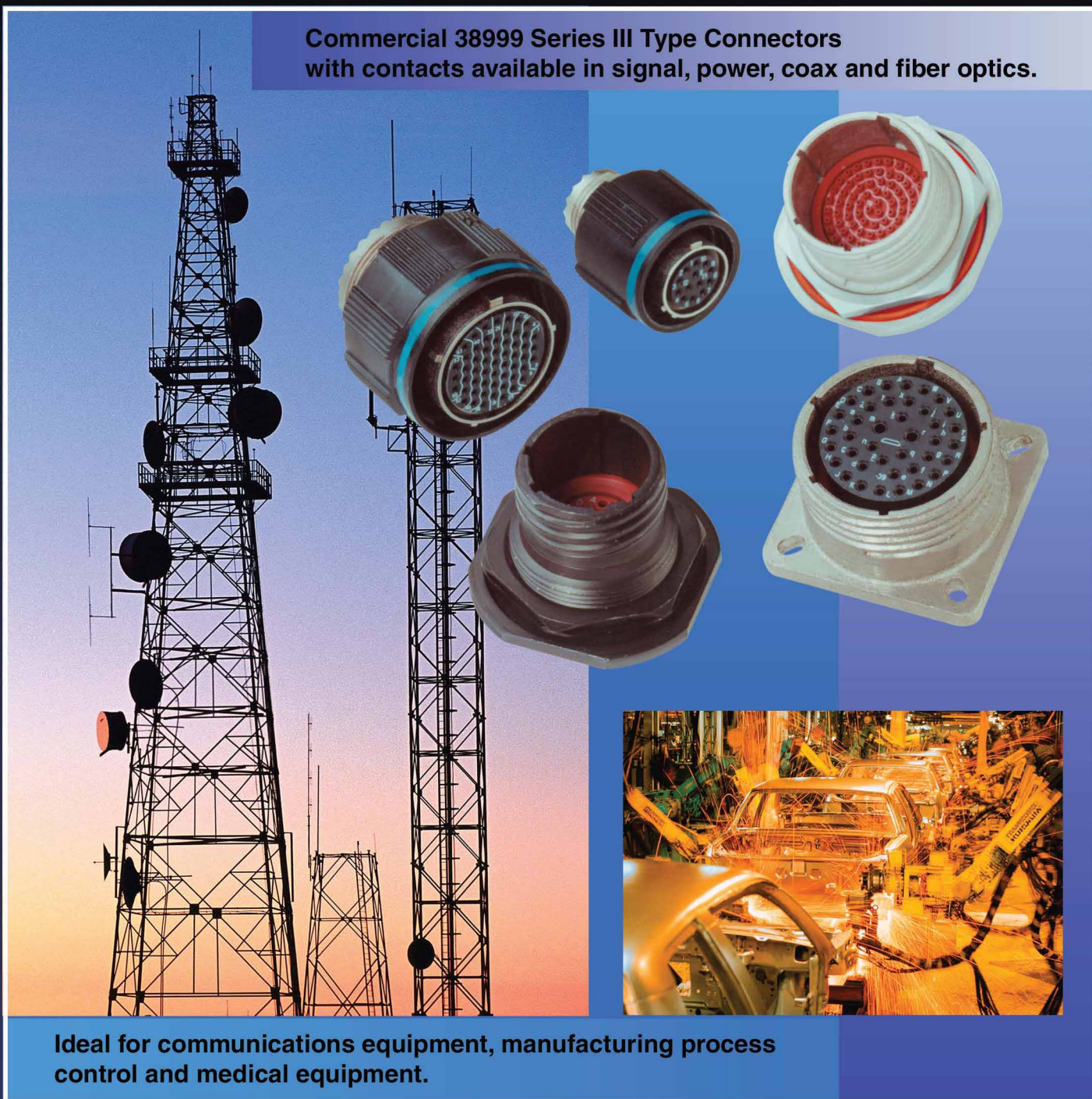


Amphenol® Amphe-Lite™ Subminiature Cylindrical Connectors

12-094-5

Commercial 38999 Series III Type Connectors
with contacts available in signal, power, coax and fiber optics.



The collage features several elements: on the left, a tall communication tower with multiple antenna arrays against a sunset sky; in the center, five different models of cylindrical connectors are displayed, including a large black one with a blue ring, a smaller black one, a white one with a red interior, a black hexagonal one, and a white square-mount one; on the bottom right, a photograph of a car body on an automated assembly line with robotic arms.

Ideal for communications equipment, manufacturing process control and medical equipment.

Amphenol

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Please visit our Website at www.amphenol-industrial.com

Also visit www.amphenol-aerospace.com. Amphenol Industrial Operations and Amphenol Aerospace are both located at Sidney, NY. Together with other Amphenol divisions worldwide, Amphenol offers one of the broadest ranges of interconnect products in the marketplace.

Amphenol Aerospace and Amphenol Industrial Operations operate quality systems that are certified to ISO-9001 and AS-9100 by third party registrars.

* Amphe-Lite is a registered trademark of Amphenol Corporation.

Amphe-Lite Series

Amphenol's ultimate commercial subminiature connector

Commercial 38999, Series III Type Composite Connectors

The Amphe-Lite Connector Series is designed for communications equipment manufacturers with signal, power, RF or fiber optic interconnect requirements in harsh environments such as communication towers, outdoor and roof-top applications. This commercial 38999, Series III type composite connector series is ideal for communications equipment, manufacturing process control and medical equipment.

The Amphe-Lite offers the highest performance capabilities for severe environment applications, and yet is cost effective enough for general duty and non-environmental applications.

The Amphe-Lite is UL Recognized, file E115497.



RoHS Compliant Product Available -
Consult Amphenol Industrial Operations.

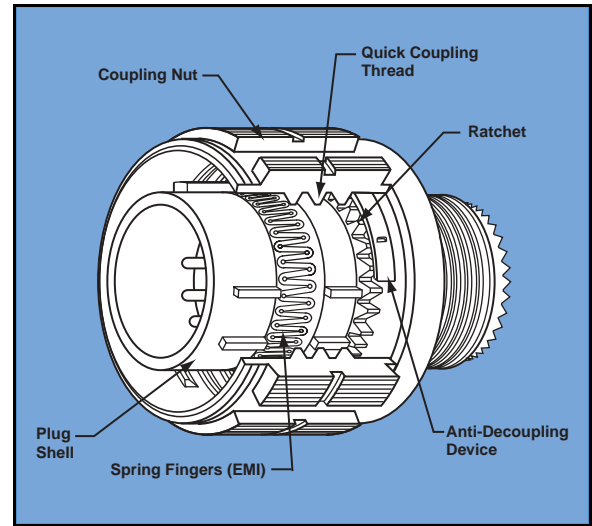


Features and Benefits of the Amphe-Lite Series:

- Service Class F Amphe-Lite connectors provide excellent EMI shielding and grounding through electroless nickel plating and spring grounding rings. Environmental sealing is ensured with interfacial seals to prevent contact corrosion. Composite shells are completely immune to corrosion problems.
- Service Class U provides a non-conductive shell when EMI shielding is not a criteria.
- Class F Composite shells resist severe corrosion, and provide plating endurance from salt spray exposure for a minimum of 2000 hours.
- Completely mates in one 360-degree turn of the coupling nut to provide the fastest and easiest equipment assembly and maintenance possible.
- Acme threads provide coupling durability. Thicker wall sections and a greater coupling surface area improve strength and shock resistance. Blunting of the thread on both the coupling nut and receptacle eliminates cross coupling.
- Recessed pins minimize potential contact damage in this 100% scoop-proof connector. In a blind mating application, mating shells cannot "scoop" the pins and cause a shorting or bending of contacts.
- A rigid dielectric insert with excellent electrical characteristics provides durable protection to the contacts. The socket contacts are probe proof, and all contacts are rear insertable and rear removable. Available in sizes 10 power, 12, 16, 20 and 22D contacts are plated in the standard 50 micro inches minimum gold, with 100 micro inches as an option.

Optional Features:

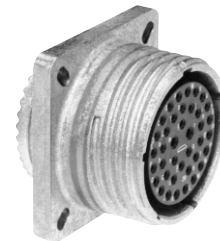
- Conductive and non-conductive options are available. See pg. 22.
- Amphe-Lite connectors allow for use of many contact types: fiber optics, shielded coaxial, twinax ground plane versions, and power contacts. (See pages 23, 24). Consult Amphenol Industrial for more information on combinations of different types of contacts in one connector shell - what Amphenol calls their new "Combo-C" inserts.
- Non-magnetic Amphe-Lite is a new variation - Amphenol offers one of the few 100% non-magnetic connectors with high contact density available today. See page 24.



Designed for Performance

Numerous advantages in performance capability are designed into the Amphenol® Amphe-Lite Connector. A positive shoulder to shoulder coupling design, grounding fingers, and electroless nickel plating provide superior EMI shielding capability of 65 dB minimum at 10 GHz.

Amphe-Lite Shell Styles



wall mount
receptacle



straight plug



jam nut
receptacle

Amphe-Lite Series

performance criteria, specifications

Amphenol® Amphe-Lite connectors provide EMI shielding capability which exceeds MIL-DTL-38999 Series III requirements.

The Amphe-Lite connector with EMI grounding fingers and conductive finishes has proven to be the ultimate in EMI shielding effectiveness. The charts at right illustrate shielding effectiveness data which is typical of connectors tested with the nickel finish over a wide frequency range.

These capabilities along with a 125°C temperature rating and superior moisture sealing protection provide the user with a connector that can withstand the most rigorous application. UL RTI rating is 105°C.

CONTACT RATING

| Contact Size | Test Current | | Maximum Millivolt Drop Crimp* |
|--------------|--------------|----------|-------------------------------|
| | Crimp | Hermetic | |
| 22D | 5 | 3 | 73 |
| 20 | 7.5 | 5 | 55 |
| 16 | 13 | 10 | 49 |
| 12 | 23 | 17 | 42 |
| 10 (Power) | 33 | NA | 33 |

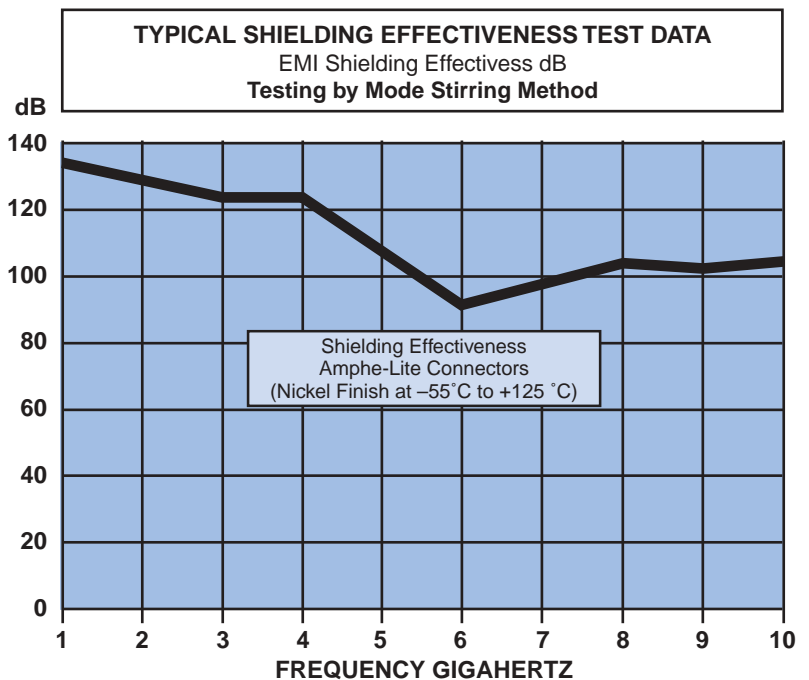
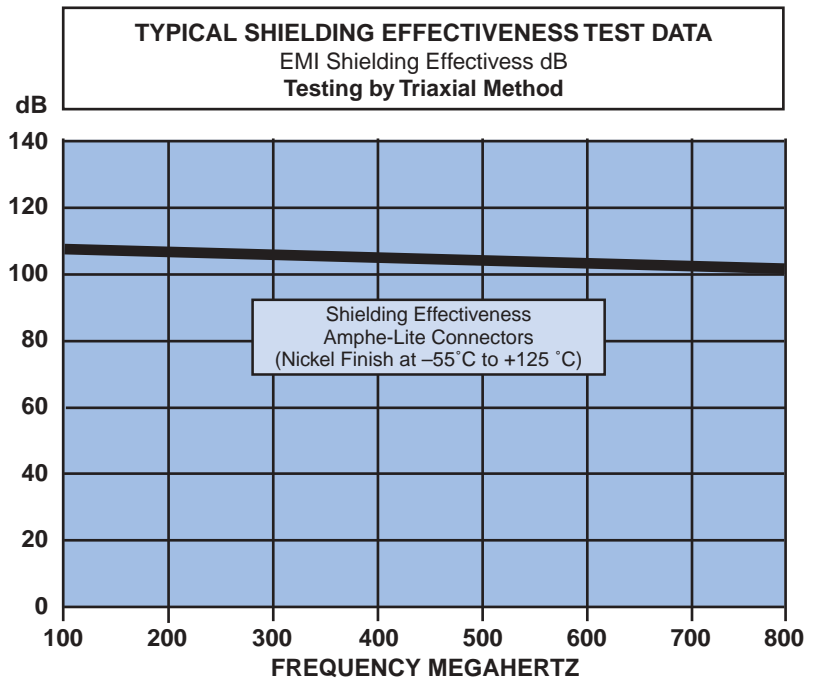
* When using silver plated wire.

| Contact Size | Crimp Well Data | |
|--------------|-----------------|--------------------|
| | Well Diameter | Nominal Well Depth |
| 22D | .0345 ±.0010 | .141 |
| 20 | .047 ±.001 | .209 |
| 16 | .067 ±.001 | .209 |
| 12 | .100 ±.002 | .209 |
| 10 (Power) | .137 ±.002 | .355 |

SERVICE RATING

| Service Rating | Suggested Operating Voltage (Sea Level) | | Test Voltage (Sea Level) |
|----------------|---|------|--------------------------|
| | AC (RMS) | DC | |
| M | 400 | 550 | 1300 VRMS |
| N | 300 | 450 | 1000 VRMS |
| I | 600 | 850 | 1800 VRMS |
| II | 900 | 1250 | 2300 VRMS |

** Please note that the establishment of electrical factors is left entirely in the designers hands, since he is in the best position to know what voltage, switching surges, transients, etc. can be expected in a particular circuit.



Test data beyond 2GHz is subject to equipment variation.

FINISH DATA

Amphe-lite connectors are available in the following finishes:

- Conductive Electroless Nickel Plated Composite (Service Class F)
- Black Composite, unplated (Service Class U)

See how to order page 22.

Amphe-Lite Series

insert availability and identification

| Shell Size/Arrg. | Service Rating | Total Contacts | Contact Size | | | | | | | |
|------------------|----------------|----------------|--------------|----|-----|----|-----------|------------|----------|--------------|
| | | | 22D | 20 | 16 | 12 | 12 (Coax) | 10 (Power) | 8 (Coax) | 8†† (Twinax) |
| 9-35 | M | 6 | 6 | | | | | | | |
| 9-94 | M | 2 | | 2 | | | | | | |
| 9-98 | I | 3 | | 3 | | | | | | |
| 11-2★ | I | 2 | | | 2 | | | | | |
| 11-5 | I | 5 | | 5 | | | | | | |
| 11-35 | M | 13 | 13 | | | | | | | |
| 11-98 | I | 6 | | 6 | | | | | | |
| 11-99 | I | 7 | | 7 | | | | | | |
| 13-4★ | I | 4 | | | 4 | | | | | |
| 13-8 | I | 8 | | 8 | | | | | | |
| 13-13 | I, Fiber Optic | 4 | | | 2* | 2 | | | | |
| 13-35 | M | 22 | 22 | | | | | | | |
| 13-98 | I | 10 | | 10 | | | | | | |
| 13-71 | I | 2 | | | | 2 | | | | |
| 15-2 | I | 2 | | | | | | 2 | | |
| 15-5★ | II | 5 | | | 5 | | | | | |
| 15-15 | I | 15 | | 14 | 1 | | | | | |
| 15-18 | I | 18 | | 18 | | | | | | |
| 15-19 | I | 19 | | 19 | | | | | | |
| 15-35 | M | 37 | 37 | | | | | | | |
| 15-97 | I | 12 | | 8 | 4 | | | | | |
| 15-AC | M | 26 | 24 | | 2 | | | | | |
| 17-2 | M | 39 | 38 | | | | | | | 1 |
| 17-6 | I | 6 | | | | 6 | | | | |
| 17-8★ | II | 8 | | | 8 | | | | | |
| 17-22★ | NA | 4 | | | | | 2 | | 2 | |
| 17-26 | I | 26 | | 26 | | | | | | |
| 17-31 | M | 19 | 4 | 11 | 4 | | | | | |
| 17-35 | M | 55 | 55 | | | | | | | |
| 17-99 | I | 23 | | 21 | 2 | | | | | |
| 19-11★ | II | 11 | | | 11 | | | | | |
| 19-31 | M | 15 | 12 | | | 1 | | | 2 | |
| 19-32 | I | 32 | | 32 | | | | | | |
| 19-35 | M | 66 | 66 | | | | | | | |
| 21-11★ | I | 11 | | | | 11 | | | | |
| 21-16★ | II | 16 | | | 16 | | | | | |
| 21-35 | M | 79 | 79 | | | | | | | |
| 21-39 | I | 39 | | 37 | 2 | | | | | |
| 21-41 | I | 41 | | 41 | | | | | | |
| 21-75★ | M | 4 | | | | | | | | (See Note) |
| 23-6★ | M | 6 | | | | | | | | 6 |
| 23-21★ | II | 21 | | | 21 | | | | | |
| 23-35 | M | 100 | 100 | | | | | | | |
| 23-53 | I | 53 | | 53 | | | | | | |
| 23-54 | M | 53 | 40 | | 9 | 4 | | | | |
| 23-55 | I | 55 | | 55 | | | | | | |
| 25-4 | I | 56 | | 48 | 8 | | | | | |
| 25-7 | NA | 99 | 97 | | | | | | | 2 |
| 25-8★ | NA | 8 | | | | | | | | 8 |
| 25-11 | N | 11 | | 2 | | | | 9 | | |
| 25-17 | M | 42 | 36 | | | | | | | 6 |
| 25-19★ | I | 19 | | | | 19 | | | | |
| 25-20 | N | 30 | | 10 | 13* | | 4 | | | 3 |
| 25-24★ | I | 24 | | | 12 | 12 | | | | |
| 25-26 | I | 25 | | 16 | | 5 | | | 4 | |
| 25-29★ | I | 29 | | | 29 | | | | | |
| 25-35 | M | 128 | 128 | | | | | | | |
| 25-37★ | I | 37 | | | 37 | | | | | |
| 25-43 | I | 43 | | 23 | 20 | | | | | |
| 25-46 | I | 46 | | 40 | 4 | | | | 2† | |
| 25-61 | I | 61 | | 61 | | | | | | |

★ Ground plane proprietary option available. Arrg. 9-5 is exclusively ground plane type. See page 24 for further information of ground plane connectors.

* Two size 16 contacts dedicated to fiber optics. Consult Sidney, NY or catalog 12-352 for fiber optic information.

† For RG180/U and RG195/U cables only. (Contact Sidney, NY for other cable application).

†† Size 8 Coax and Twinax are interchangeable.

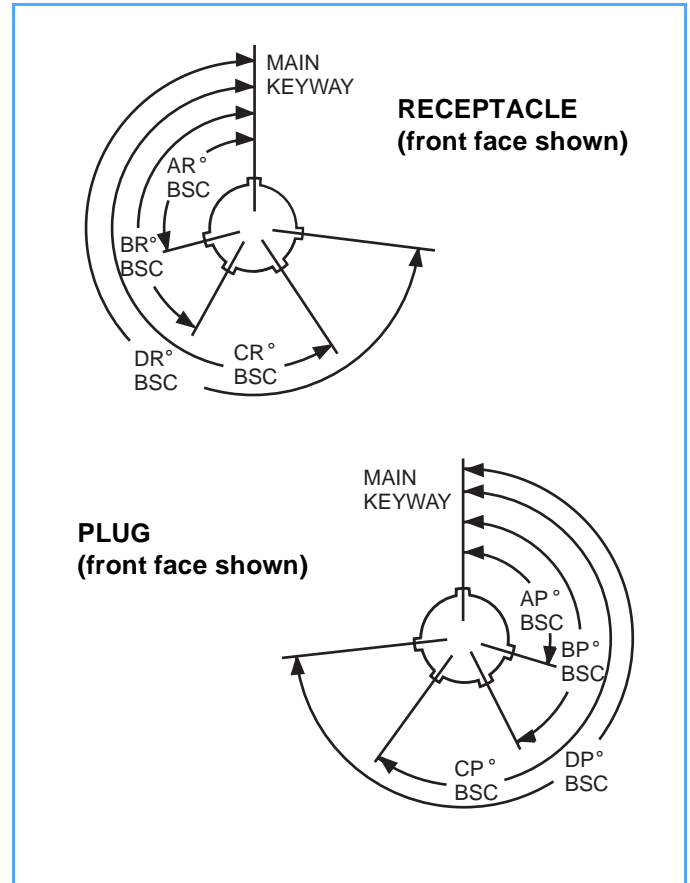
Amphe-Lite Series

alternate insert positioning

MASTER KEY/KEYWAY POSITION

| Shell Size | Key & keyway arrangement identification letter | AR° or AP° BSC | BR° or BP° BSC | CR° or CP° BSC | DR° or DP° BSC |
|----------------|--|----------------|----------------|----------------|----------------|
| 9 | N | 105 | 140 | 215 | 265 |
| | A | 102 | 132 | 248 | 320 |
| | B | 80 | 118 | 230 | 312 |
| | C | 35 | 140 | 205 | 275 |
| | D | 64 | 155 | 234 | 304 |
| | E | 91 | 131 | 197 | 240 |
| 11, 13, and 15 | N | 95 | 141 | 208 | 236 |
| | A | 113 | 156 | 182 | 292 |
| | B | 90 | 145 | 195 | 252 |
| | C | 53 | 156 | 220 | 255 |
| | D | 119 | 146 | 176 | 298 |
| | E | 51 | 141 | 184 | 242 |
| 17 and 19 | N | 80 | 142 | 196 | 293 |
| | A | 135 | 170 | 200 | 310 |
| | B | 49 | 169 | 200 | 244 |
| | C | 66 | 140 | 200 | 257 |
| | D | 62 | 145 | 180 | 280 |
| | E | 79 | 153 | 197 | 272 |
| 21, 23, and 25 | N | 80 | 142 | 196 | 293 |
| | A | 135 | 170 | 200 | 310 |
| | B | 49 | 169 | 200 | 244 |
| | C | 66 | 140 | 200 | 257 |
| | D | 62 | 145 | 180 | 280 |
| | E | 79 | 153 | 197 | 272 |










A plug with a given rotation letter will mate with a receptacle with the same rotation letter. The angles for a given connector are the same whether it contains pins or sockets. Inserts are not rotated in conjunction with the master key/keyway.

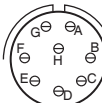
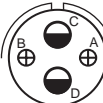

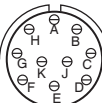
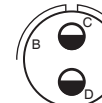

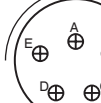




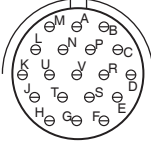
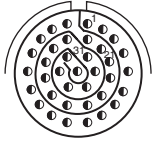
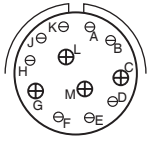
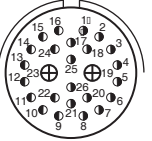
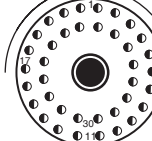
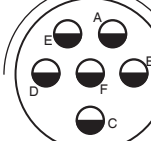
Amphe-Lite Series

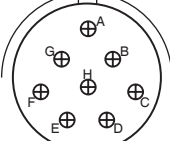
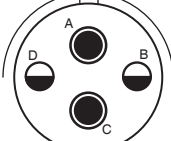
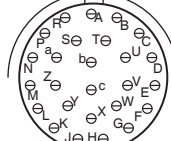
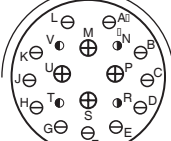
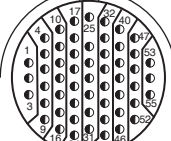

insert arrangements

front face of pin inserts illustrated

| | | | | | | | | | |
|--------------------|---|---|---|---|---|--|---|---|---|
| |  |  |  |  |  |  |  |  |  |
| Insert Arrangement | 9-35 | 9-94 | 9-98 | 11-2 | 11-5 | 11-35 | 11-98 | 11-99 | 13-4 |
| Service Rating | M | M | I | I | I | M | I | I | I |
| Number of Contact | 6 | 2 | 3 | 2 | 5 | 13 | 6 | 7 | 4 |
| Contact Size | 22D | 20 | 20 | 16 | 20 | 22D | 20 | 20 | 16 |

| | | | | | | | | | |
|---------------------------|---|---|---|---|---|--|---|---|---|
| |  |  |  |  |  |  |  |  |  |
| Insert Arrangement | 13-8 | 13-13 | 13-35 | 13-98 | 13-71 | 15-2 | 15-5 | 15-15 | 15-18 |
| Service Rating | I | I, Fiber Optic | | I | I | I | II | I | I |
| Number of Contacts | 8 | 2 | 2 | 10 | 2 | 2 | 5 | 14 | 1 |
| Contact Size | 20 | 16 | 12 | 22D | 20 | 12 | 16 | 20 | 16 |
| Dedicated to Fiber Optics | | | | | | | | | |

| | | | | | | |
|--------------------|---|---|---|--|---|---|
| |  |  |  |  |  |  |
| Insert Arrangement | 15-19 | 15-35 | 15-97 | 15-AC | 17-2 | 17-6 |
| Service Rating | I | M | I | M | M | I |
| Number of Contacts | 19 | 37 | 8 | 24 | 38 | 6 |
| Contact Size | 20 | 22D | 20 | 22D | 22D | 12 |

| | | | | | | |
|--------------------|---|---|---|--|---|---|
| |  |  |  |  |  |  |
| Insert Arrangement | 17-8 | 17-22 | 17-26 | 17-31 | 17-35 | 17-99 |
| Service Rating | II | Coax | I | M | M | I |
| Number of Contacts | 8 | 2 | 26 | 4 | 55 | 21 |
| Contact Size | 16 | 12 Coax | 20 | 22D | 22D | 20 |

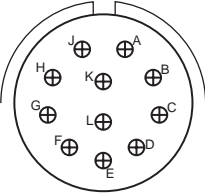
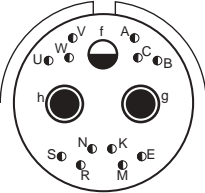
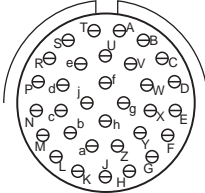
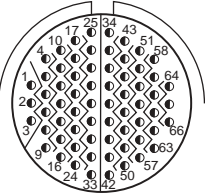
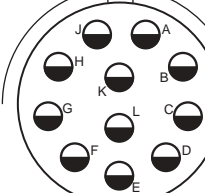
CONTACT LEGEND

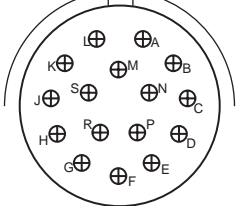
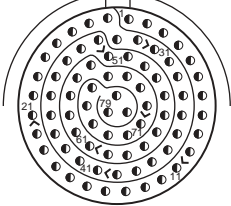
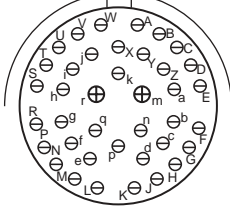
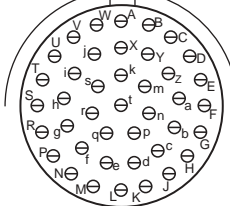
 8
  10
  12
  16
  20
  22D

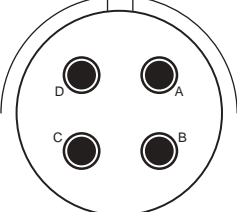
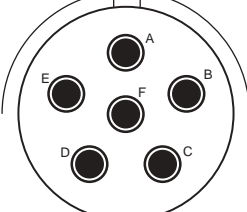
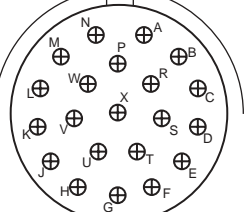
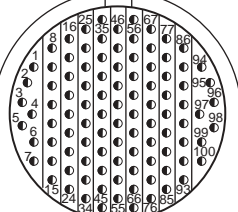
Amphe-Lite Series

insert arrangements

front face of pin inserts illustrated

| | | | | | |
|--------------------|---|---|--|---|---|
| |  |  |  |  |  |
| Insert Arrangement | 19-11 | 19-31 | 19-32 | 19-35 | 21-11 |
| Service Rating | II | M | I | M | I |
| Number of Contacts | 11 | 212 | 32 | 66 | 11 |
| Contact Size | 16 | 8 Coax1222D | 20 | 22D | 12 |

| | | | | |
|--------------------|--|--|---|--|
| |  |  |  |  |
| Insert Arrangement | 21-16 | 21-35 | 21-39 | 21-41 |
| Service Rating | II | M | I | I |
| Number of Contacts | 16 | 79 | 372 | 41 |
| Contact Size | 16 | 22D | 2016 | 20 |

| | | | | |
|--------------------|---|---|--|---|
| |  |  |  |  |
| Insert Arrangement | 21-75 | 23-6 | 23-21 | 23-35 |
| Service Rating | M | M | II | M |
| Number of Contacts | 4 | 6 | 21 | 100 |
| Contact Size | 8 Coax | 8 Twinax | 16 | 22D |

Note: Size 8 cavities can be supplied with either twinax or coax per customer requirement.

CONTACT LEGEND







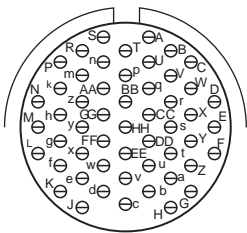

81012162022D

Amphe-Lite Series

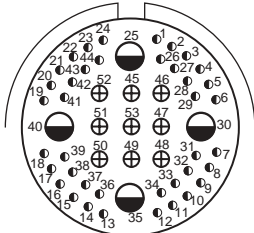
insert arrangements

front face of pin inserts illustrated

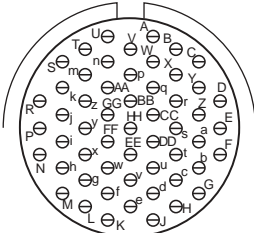
Insert Arrangement
Service Rating
Number of Contacts
Contact Size



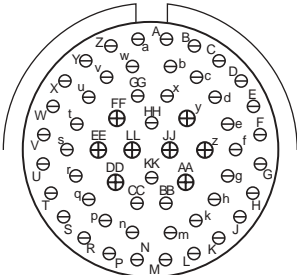
23-53
I
53
20



23-54
M
40 9 4
22D 16 12

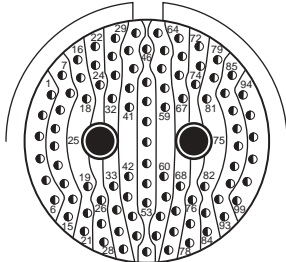


23-55
I
55
20

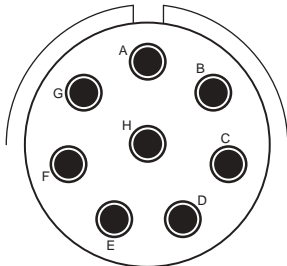


Insert Arrangement
Service Rating
Number of Contacts
Contact Size

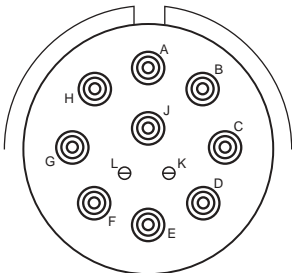
25-4
I
48 8
20 16



25-7
NA
97 2
22D 8 Twinax

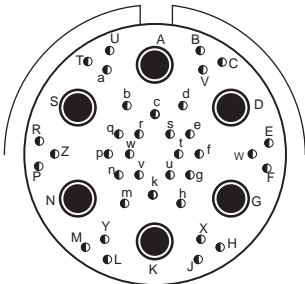


25-8
NA
8
8 Twinax

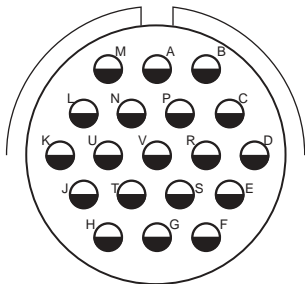


Insert Arrangement
Service Rating
Number of Contacts
Contact Size

25-11
N
2 9
20 10 Power



25-17
M
36 6
22D 8 Twinax



25-19
I
19
12

CONTACT LEGEND

●

8

⊙

10

◐

12

⊕

16

⊖

20

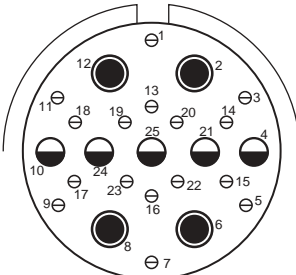
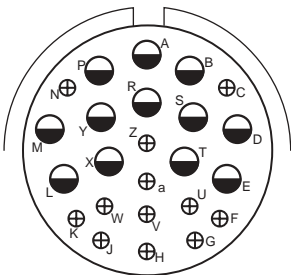
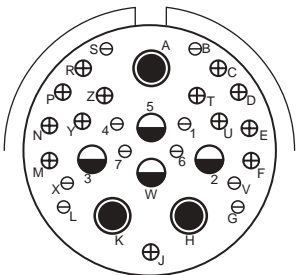
⦿

22D

Amphe-Lite Series

insert arrangements

front face of pin inserts illustrated

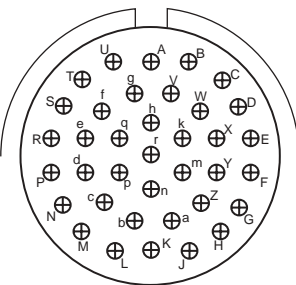
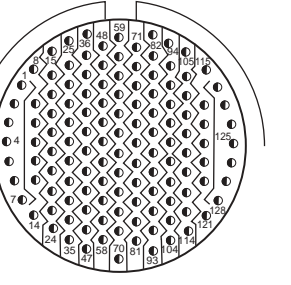
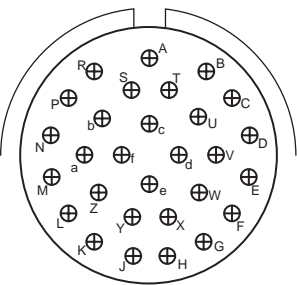


| | | | | |
|--------------------|-------|----|----------|---------|
| Insert Arrangement | 25-20 | | | |
| Service Rating | N | | | |
| Number of Contacts | 10 | 13 | 3 | 4 |
| Contact Size | 20 | 16 | 8 Twinax | 12 Coax |

(Locations U and Y - Dedicated to Fiber Optics)

| | | |
|--------------------|-------|----|
| Insert Arrangement | 25-24 | |
| Service Rating | I | |
| Number of Contacts | 12 | 12 |
| Contact Size | 16 | 12 |

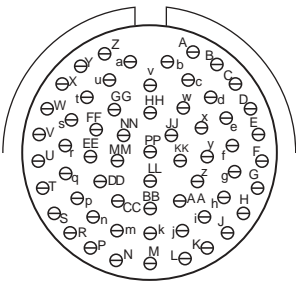
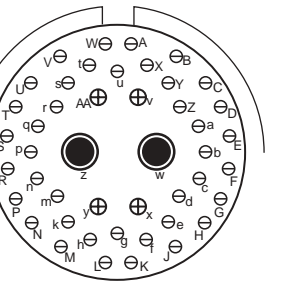
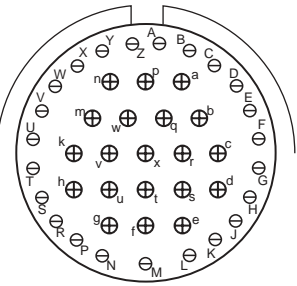
| | | | |
|--------------------|-------|----|--------|
| Insert Arrangement | 25-26 | | |
| Service Rating | I | | |
| Number of Contacts | 16 | 5 | 4 |
| Contact Size | 20 | 12 | 8 Coax |



| | | |
|--------------------|-------|--|
| Insert Arrangement | 25-29 | |
| Service Rating | I | |
| Number of Contacts | 29 | |
| Contact Size | 16 | |

| | | |
|--------------------|-------|--|
| Insert Arrangement | 25-35 | |
| Service Rating | M | |
| Number of Contacts | 128 | |
| Contact Size | 22D | |

| | | |
|--------------------|-------|--|
| Insert Arrangement | 25-37 | |
| Service Rating | I | |
| Number of Contacts | 37 | |
| Contact Size | 16 | |



| | | |
|--------------------|-------|----|
| Insert Arrangement | 25-43 | |
| Service Rating | I | |
| Number of Contacts | 23 | 20 |
| Contact Size | 20 | 16 |

| | | | |
|--------------------|-------|----|---------|
| Insert Arrangement | 25-46 | | |
| Service Rating | I | | |
| Number of Contacts | 40 | 4 | 2 |
| Contact Size | 20 | 16 | 8 Coax† |

| | | |
|--------------------|-------|--|
| Insert Arrangement | 25-61 | |
| Service Rating | I | |
| Number of Contacts | 61 | |
| Contact Size | 20 | |

† Coax contacts for RG180 or RG195 cable.

CONTACT LEGEND











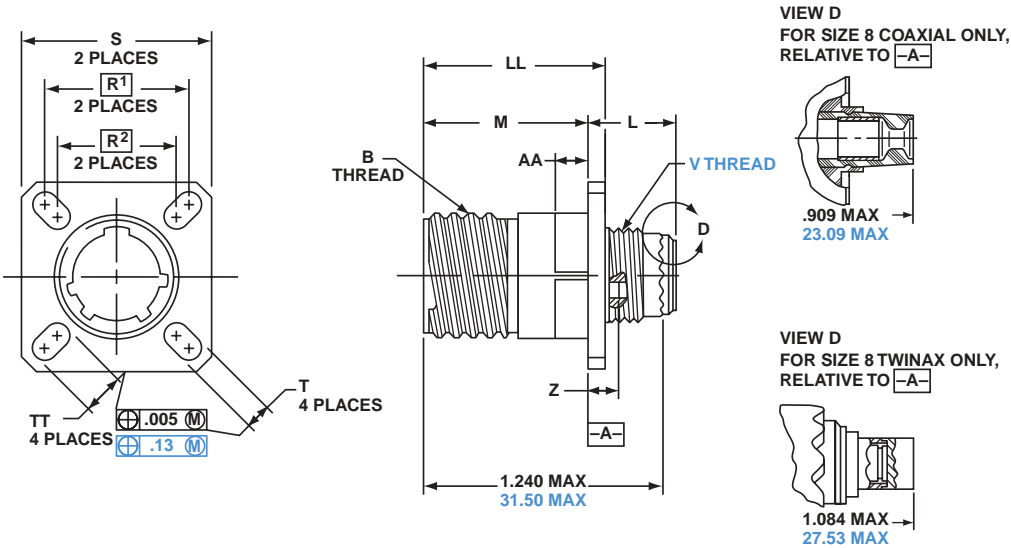


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Amphe-Lite Series

AL00 wall mounting receptacle, composite

AL00F ()*
 AL00FD ()*
 AL00U ()*
 AL00UD ()*



* To complete order number, see page 22.

| Inches | | | | | | | | | | | |
|------------|--|-----------|---------------------|--------------------------|--------------------------|-----------|---------------------|-----------|----------------------------------|-------------|----------------------|
| Shell Size | B Thread Class 2A 0.1P-0.3L-TS (Plated) | L Max. | M +.000 -.005 | <div>R¹</div> | <div>R²</div> | S Max. | T +.008 -.006 | Z Max. | AA Max. Panel Thickness | LL ±.005 | TT +.008 -.006 |
| 9 | .6250 | .514 | .775 | .719 | .594 | .948 | .128 | .198 | .234 | .913 | .216 |
| 11 | .7500 | .514 | .775 | .812 | .719 | 1.043 | .128 | .198 | .234 | .913 | .194 |
| 13 | .8750 | .514 | .775 | .906 | .812 | 1.137 | .128 | .198 | .234 | .913 | .194 |
| 15 | 1.0000 | .514 | .775 | .969 | .906 | 1.232 | .128 | .198 | .234 | .913 | .173 |
| 17 | 1.1875 | .514 | .775 | 1.062 | .969 | 1.323 | .128 | .198 | .234 | .913 | .194 |
| 19 | 1.2500 | .514 | .775 | 1.156 | 1.062 | 1.449 | .128 | .198 | .234 | .913 | .194 |
| 21 | 1.3750 | .545 | .745 | 1.250 | 1.156 | 1.575 | .128 | .228 | .204 | .911 | .194 |
| 23 | 1.5000 | .545 | .745 | 1.375 | 1.250 | 1.701 | .154 | .228 | .204 | .911 | .242 |
| 25 | 1.6250 | .545 | .745 | 1.500 | 1.375 | 1.823 | .154 | .228 | .204 | .911 | .242 |

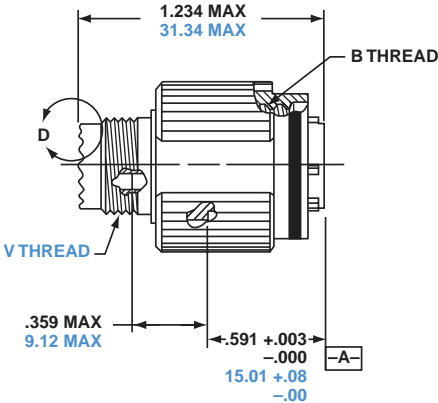
| Millimeters | | | | | | | | | | | |
|-------------|-----------|-------------------|--------------------------|--------------------------|----------|-------------------|-----------------------|-----------|------------|------------|--------------------|
| Shell Size | L Max. | M +.00 -.13 | <div>R¹</div> | <div>R²</div> | S Max | T +.20 -.13 | V Thread Metric | Z Max. | AA Max. | LL ±.13 | TT +.20 -.13 |
| 9 | 13.06 | 19.69 | 18.26 | 15.09 | 24.1 | 3.25 | M12X1-6g | 5.03 | 5.94 | 23.19 | 5.49 |
| 11 | 13.06 | 19.69 | 20.62 | 18.26 | 26.5 | 3.25 | M15X1-6g | 5.03 | 5.94 | 23.19 | 4.93 |
| 13 | 13.06 | 19.69 | 23.01 | 20.62 | 28.9 | 3.25 | M18X1-6g | 5.03 | 5.94 | 23.19 | 4.93 |
| 15 | 13.06 | 19.69 | 24.61 | 23.01 | 31.3 | 3.25 | M22X1-6g | 5.03 | 5.94 | 23.19 | 4.39 |
| 17 | 13.06 | 19.69 | 26.97 | 24.61 | 33.7 | 3.25 | M25X1-6g | 5.03 | 5.94 | 23.19 | 4.93 |
| 19 | 13.06 | 19.69 | 29.36 | 26.97 | 36.9 | 3.25 | M28X1-6g | 5.03 | 5.94 | 23.19 | 4.93 |
| 21 | 13.84 | 18.92 | 31.75 | 29.36 | 40.1 | 3.25 | M31X1-6g | 5.79 | 5.18 | 23.14 | 4.93 |
| 23 | 13.84 | 18.92 | 34.93 | 31.75 | 43.3 | 3.91 | M34X1-6g | 5.79 | 5.18 | 23.14 | 6.15 |
| 25 | 13.84 | 18.92 | 38.10 | 34.93 | 46.4 | 3.91 | M37X1-6g | 5.79 | 5.18 | 23.14 | 6.15 |

All dimensions for reference only Designates true position dimensioning

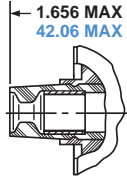
Amphe-Lite Series

AL06 straight plug, composite

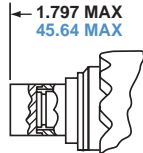
AL06F ()*
 AL06FD ()*
 AL06U ()*
 AL06UD ()*



VIEW D
 FOR SIZE 8 COAXIAL ONLY,
 RELATIVE TO -A-



VIEW D
 FOR SIZE 8 TWINAX ONLY,
 RELATIVE TO -A-



* To complete order number see page 22.

| Inches | | |
|------------|---|-------------------|
| Shell Size | B Thread 0.1P-0.3L-TS-2B (Plated) | Q Dia. Max. |
| 9 | .6250 | .858 |
| 11 | .7500 | .984 |
| 13 | .8750 | 1.157 |
| 15 | 1.0000 | 1.279 |
| 17 | 1.1875 | 1.405 |
| 19 | 1.2500 | 1.515 |
| 21 | 1.3750 | 1.641 |
| 23 | 1.5000 | 1.767 |
| 25 | 1.6250 | 1.889 |

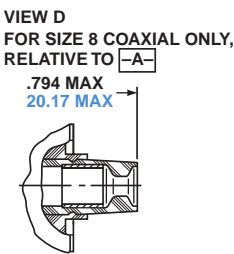
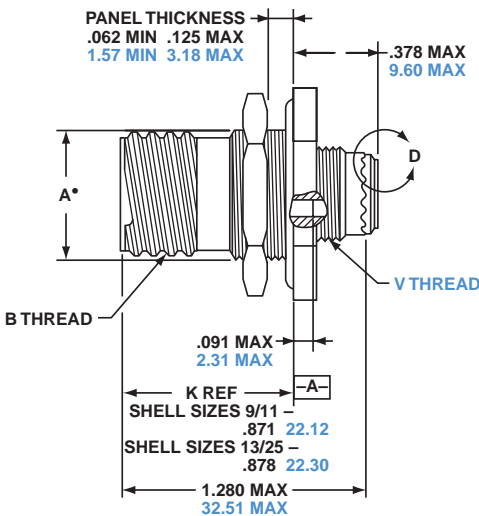
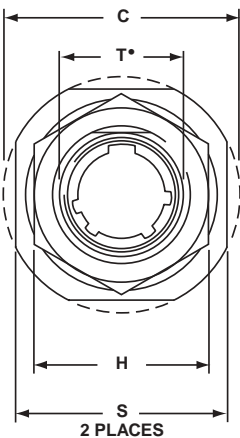
All dimensions for reference only.

| Millimeters | | |
|-------------|-----------|-----------------------|
| Shell Size | Q Max. | V Thread Metric |
| 9 | 21.8 | M12X1-6g |
| 11 | 25.0 | M15X1-6g |
| 13 | 29.4 | M18X1-6g |
| 15 | 32.5 | M22X1-6g |
| 17 | 35.7 | M25X1-6g |
| 19 | 38.5 | M28X1-6g |
| 21 | 41.7 | M31X1-6g |
| 23 | 44.9 | M34X1-6g |
| 25 | 48.0 | M37X1-6g |

Amphe-Lite Series

AL07 jam nut receptacle, composite

AL07F ()*
AL07FD ()*
AL07U ()*
AL07UD ()*



* To complete order number see page 22.

Inches

| Shell Size | A* +.000 -.010 | B Thread Class 2A 0.1P-0.3L-TS (Plated) | C Max. | H Hex +.017 -.016 | S ±.010 | T* +.010 -.000 |
|------------|----------------------|--|-----------|-------------------------|------------|----------------------|
| 9 | .669 | .6250 | 1.199 | .875 | 1.062 | .697 |
| 11 | .769 | .7500 | 1.386 | 1.062 | 1.250 | .822 |
| 13 | .955 | .8750 | 1.511 | 1.250 | 1.375 | 1.007 |
| 15 | 1.084 | 1.0000 | 1.636 | 1.375 | 1.500 | 1.134 |
| 17 | 1.208 | 1.1875 | 1.761 | 1.438 | 1.625 | 1.259 |
| 19 | 1.333 | 1.2500 | 1.949 | 1.562 | 1.812 | 1.384 |
| 21 | 1.459 | 1.3750 | 2.073 | 1.688 | 1.938 | 1.507 |
| 23 | 1.575 | 1.5000 | 2.199 | 1.812 | 2.062 | 1.634 |
| 25 | 1.709 | 1.6250 | 2.323 | 2.000 | 2.188 | 1.759 |

Millimeters

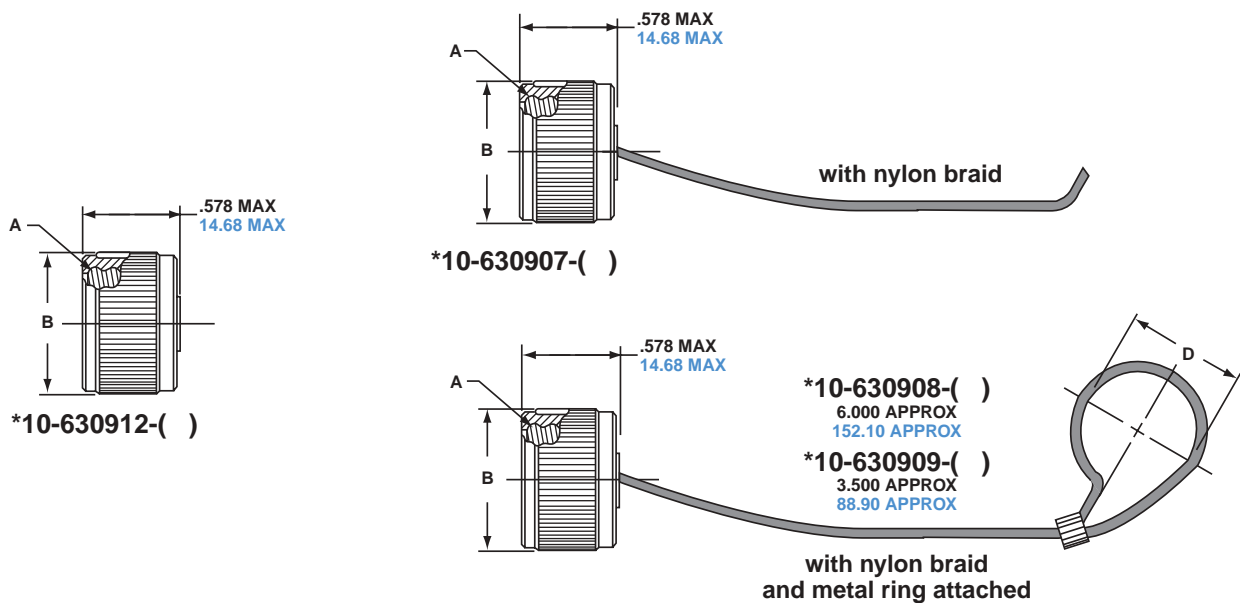
| Shell Size | A* +.00 -.25 | C Max. | H Hex +.43 -.41 | S ±.25 | T* +.25 -.00 | V Thread Metric |
|------------|--------------------|-----------|-----------------------|-----------|--------------------|-----------------------|
| 9 | 16.99 | 30.45 | 22.23 | 26.97 | 17.70 | M12X1-6g |
| 11 | 19.53 | 35.20 | 25.40 | 31.75 | 20.88 | M15X1-6g |
| 13 | 24.26 | 38.38 | 30.18 | 34.93 | 25.58 | M18X1-6g |
| 15 | 27.53 | 41.55 | 33.32 | 38.10 | 28.80 | M22X1-6g |
| 17 | 30.68 | 44.73 | 36.53 | 41.28 | 31.98 | M25X1-6g |
| 19 | 33.86 | 49.50 | 39.67 | 46.02 | 35.15 | M28X1-6g |
| 21 | 37.06 | 52.65 | 42.80 | 49.23 | 38.28 | M31X1-6g |
| 23 | 40.01 | 55.85 | 46.02 | 52.37 | 41.50 | M34X1-6g |
| 25 | 43.41 | 59.00 | 50.80 | 55.58 | 44.68 | M37X1-6g |

All dimensions for reference only.

- D shaped panel cut-out dimensions to prevent connector from turning

Amphe-Lite – accessories

receptacle protection cap



* To complete order number, add shell size and suffix number.
For example, shell size 11: 10-630912-011.

| Inches | | | |
|------------|--------------------------------------|----------------|--------------------------|
| Shell Size | A Thread Class 2B 0.1P-0.3L-TS | B Dia. Max. | D Dia. +.010 -.000 |
| 9 | .6250 | .875 | .703 |
| 11 | .7500 | 1.000 | .844 |
| 13 | .8750 | 1.125 | 1.016 |
| 15 | 1.0000 | 1.250 | 1.141 |
| 17 | 1.1875 | 1.438 | 1.266 |
| 19 | 1.2500 | 1.500 | 1.391 |
| 21 | 1.3750 | 1.625 | 1.516 |
| 23 | 1.5000 | 1.750 | 1.641 |
| 25 | 1.6250 | 1.875 | 1.766 |

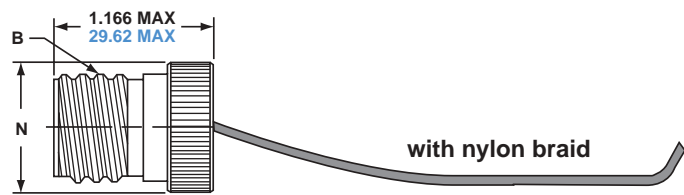
| | | Millimeters | | |
|---------------------------|--------------|-------------|-------------|--------------------|
| Finish | 10-No Suffix | Shell Size | B Dia. Max. | D Dia +.25 -.00 |
| Black composite, unplated | -() | 9 | 22.23 | 17.86 |
| | | 11 | 25.40 | 21.44 |
| | | 13 | 28.58 | 25.81 |
| | | 15 | 31.75 | 28.98 |
| | | 17 | 36.53 | 32.16 |
| | | 19 | 38.10 | 35.33 |
| | | 21 | 41.28 | 38.51 |
| | | 23 | 44.45 | 41.68 |
| | | 25 | 47.63 | 44.86 |

All dimensions for reference only.

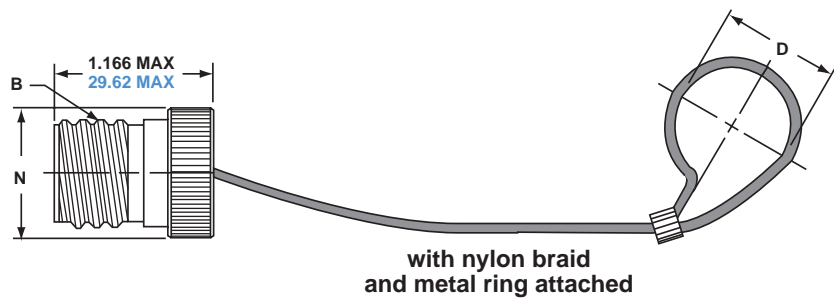
Amphe-Lite – accessories

plug protection cap

*10-630910-()



*10-630911-()



* To complete order number, add shell size and suffix number.
For example, shell size 11 with electroless nickel, 10-630910-11F

| Inches | | | |
|------------|--------------------------------|----------------|-------------|
| Shell Size | A Thread Class 2A 0.1P-0.3L-TS | D +.030 -0.000 | N Dia. Max. |
| 9 | .6250 | .516 | .895 |
| 11 | .7500 | .641 | 1.000 |
| 13 | .8750 | .766 | 1.171 |
| 15 | 1.0000 | .891 | 1.299 |
| 17 | 1.1875 | 1.016 | 1.436 |
| 19 | 1.2500 | 1.141 | 1.543 |
| 21 | 1.3750 | 1.266 | 1.670 |
| 23 | 1.5000 | 1.343 | 1.787 |
| 25 | 1.6250 | 1.516 | 1.914 |

| Millimeters | | |
|---------------------------|--------------|--|
| Finish | 10-No Suffix | |
| Electroless nickel | -()F | |
| Black composite, unplated | -0() | |

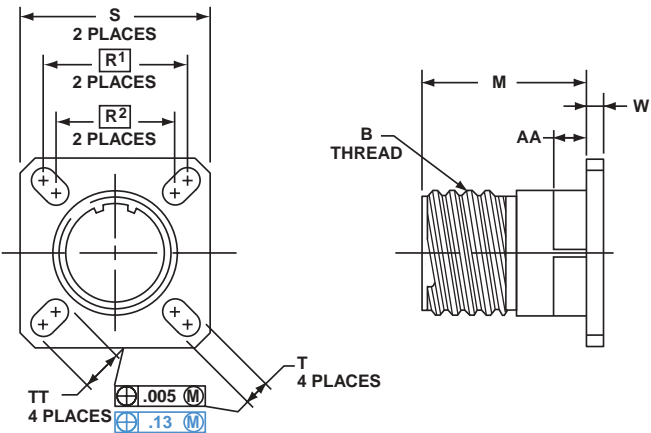
| Shell Size | D +.25 -0.00 | N Dia. Max. |
|------------|--------------|-------------|
| 9 | 13.11 | 22.73 |
| 11 | 16.28 | 25.40 |
| 13 | 19.46 | 29.74 |
| 15 | 22.63 | 32.99 |
| 17 | 25.81 | 36.47 |
| 19 | 28.98 | 39.19 |
| 21 | 32.16 | 42.42 |
| 23 | 34.11 | 45.39 |
| 25 | 38.51 | 48.62 |

All dimensions for reference only.

Amphe-Lite – accessories

dummy receptacle

*10-630913-()



* To complete order number, add shell size and suffix number.
For example, shell size 11 with electroless nickel, 10-630913-11F.

Inches

| Finish | 10-No Suffix |
|------------------------------|-----------------|
| Electroless nickel | -()F |
| Black composite, unplated | -0() |

| Shell Size | B Thread Class 2A 0.1P-0.3L-TS (Plated) | M +.020 -.000 | R ¹ | R ² | S ±.010 | T +.008 -.006 | W ±.010 | AA Max. Panel Thickness | TT +.008 -.006 |
|---------------|--|---------------------|----------------|----------------|------------|---------------------|------------|----------------------------------|----------------------|
| 9 | .6250 | .822 | .719 | .594 | .938 | .128 | .098 | .234 | .216 |
| 11 | .7500 | .822 | .812 | .719 | 1.031 | .128 | .098 | .234 | .194 |
| 13 | .8750 | .822 | .906 | .812 | 1.125 | .128 | .098 | .234 | .194 |
| 15 | 1.0000 | .822 | .969 | .906 | 1.219 | .128 | .098 | .234 | .173 |
| 17 | 1.1875 | .822 | 1.062 | .969 | 1.312 | .128 | .098 | .234 | .194 |
| 19 | 1.2500 | .822 | 1.156 | 1.062 | 1.438 | .128 | .098 | .234 | .194 |
| 21 | 1.3750 | .791 | 1.250 | 1.156 | 1.562 | .128 | .125 | .204 | 1.94 |
| 23 | 1.5000 | .791 | 1.375 | 1.250 | 1.688 | .154 | .125 | .204 | .242 |
| 25 | 1.6250 | .791 | 1.500 | 1.375 | 1.812 | .154 | .125 | .204 | .242 |

Millimeters

| Shell Size | M +.51 -.00 | R ¹ | R ² | S ±.25 | T +.20 -.15 | W ±.25 | AA Max. | TT +.20 -.15 |
|---------------|-------------------|----------------|----------------|-----------|-------------------|-----------|------------|--------------------|
| 9 | 20.88 | 18.26 | 15.09 | 23.83 | 3.25 | 2.49 | 5.94 | 5.49 |
| 11 | 20.88 | 20.62 | 18.26 | 26.19 | 3.25 | 2.49 | 5.94 | 4.93 |
| 13 | 20.88 | 23.01 | 20.62 | 28.58 | 3.25 | 2.49 | 5.94 | 4.93 |
| 15 | 20.88 | 24.61 | 23.01 | 30.96 | 3.25 | 2.49 | 5.94 | 4.39 |
| 17 | 20.88 | 26.97 | 24.61 | 33.32 | 3.25 | 2.49 | 5.94 | 4.93 |
| 19 | 20.88 | 29.36 | 26.97 | 36.53 | 3.25 | 2.49 | 5.94 | 4.93 |
| 21 | 20.09 | 31.75 | 29.36 | 39.67 | 3.25 | 3.18 | 5.18 | 4.93 |
| 23 | 20.09 | 34.93 | 31.75 | 42.88 | 3.91 | 3.18 | 5.18 | 6.15 |
| 25 | 20.09 | 38.10 | 34.93 | 46.02 | 3.91 | 3.18 | 5.18 | 6.15 |

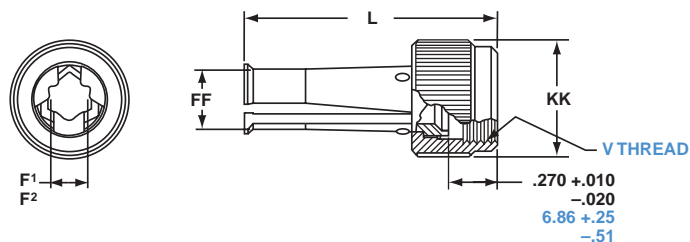
All dimensions for reference only.

Designates true position dimensioning

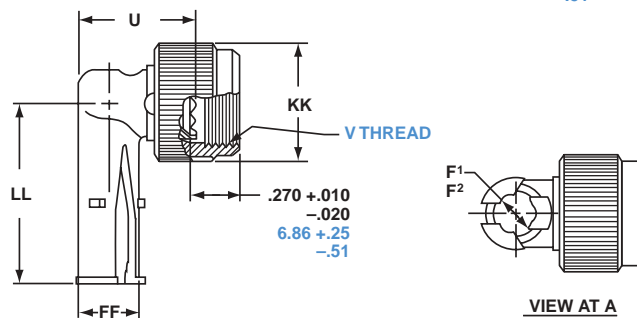
Amphe-Lite – accessories

cable clamps

STRAIGHT STYLE *10-630934-XXX



90 DEGREE ELBOW STYLE *10-630935-XXX



* To complete order number, add shell size and suffix number.
For example, shell size 11 with electroless nickel, 10-630934-11F.

| Finish | 10-No Suffix |
|--------------------|-----------------|
| Electroless nickel | -()F |

| Inches | | | | | | | |
|---------------|---|---|-----------|-----------|--------------------|--------------------|------------|
| Shell Size | F ¹ Min. Dia. Cable | F ² Max. Dia. Cable | L Max. | U Max. | FF Dia. Max. | KK Dia. Max. | LL Max. |
| 9 | .094 | .203 | 1.431 | .656 | .347 | .629 | 1.015 |
| 11 | .141 | .250 | 1.431 | .688 | .394 | .756 | 1.062 |
| 13 | .172 | .323 | 1.431 | .750 | .467 | .883 | 1.125 |
| 15 | .203 | .422 | 1.431 | .859 | .566 | 1.011 | 1.328 |
| 17 | .234 | .500 | 1.431 | .937 | .644 | 1.138 | 1.392 |
| 19 | .265 | .562 | 1.431 | 1.000 | .706 | 1.265 | 1.453 |
| 21 | .297 | .625 | 1.492 | 1.062 | .769 | 1.393 | 1.609 |
| 23 | .328 | .703 | 1.492 | 1.141 | .847 | 1.488 | 1.656 |
| 25 | .359 | .765 | 1.492 | 1.203 | .909 | 1.616 | 1.719 |

| Millimeters | | | | | | | |
|---------------|--------------------------------------|--------------------------------------|-----------|-----------|-----------------|--------------------|------------|
| Shell Size | F ¹ Min. Dia. Cable | F ² Max. Dia. Cable | L Max. | U Max. | FF Dia. Max. | KK Dia. Max. | LL Max. |
| 9 | 2.39 | 5.16 | 36.35 | 16.66 | 8.81 | 15.98 | 25.78 |
| 11 | 3.58 | 6.35 | 36.35 | 17.48 | 10.01 | 19.20 | 26.97 |
| 13 | 4.37 | 8.20 | 36.35 | 19.05 | 11.86 | 22.43 | 28.58 |
| 15 | 5.16 | 10.72 | 36.35 | 21.82 | 14.38 | 25.68 | 33.73 |
| 17 | 5.94 | 12.70 | 36.35 | 23.80 | 16.36 | 28.91 | 35.36 |
| 19 | 6.73 | 14.27 | 36.35 | 25.40 | 17.93 | 32.13 | 36.91 |
| 21 | 7.54 | 15.88 | 37.90 | 26.97 | 19.53 | 35.38 | 40.87 |
| 23 | 8.33 | 17.86 | 37.90 | 28.98 | 21.51 | 37.80 | 42.06 |
| 25 | 9.12 | 19.43 | 37.90 | 30.56 | 23.09 | 41.05 | 43.66 |

All dimensions for reference only.

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) | 10-597448-105 | 10-597449-105 |
| 12 | 10-597448-125 | 10-597449-125 |
| 16 | 10-597448-165 | 10-597449-165 |
| 20 | 10-597448-205 | 10-597449-205 |
| 22D | 10-597448-725 | 10-597449-452 |

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, (thermocouple) 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 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

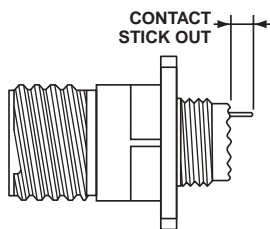
contacts – printed circuit board, wire wrap

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 |

Items highlighted are most popular and most readily available.

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 part 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.

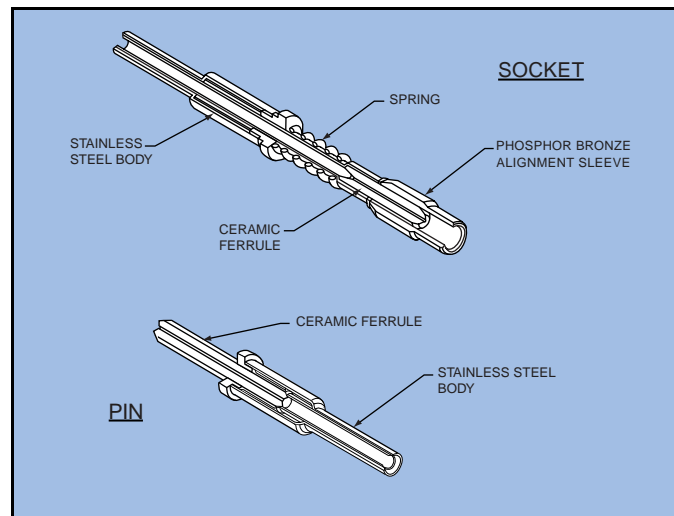
Amphe-Lite Series

fiber optic termini – multi-mode, size 16

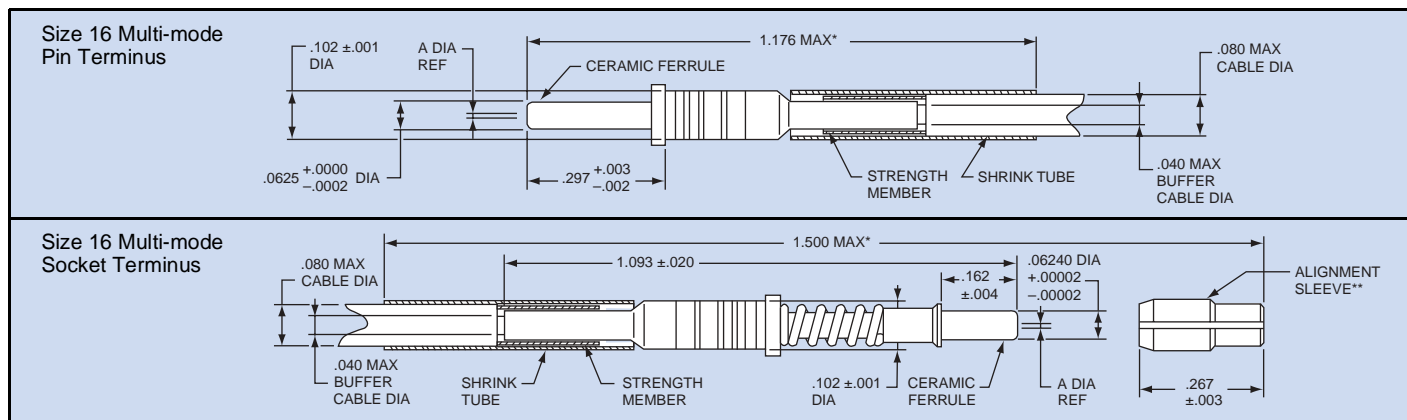
Amphenol® Multi-mode, Size 16 Termini

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.

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.

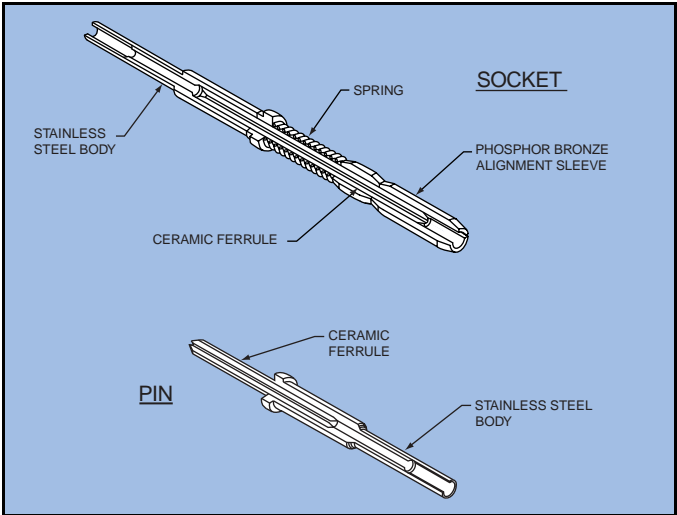
Power contacts can be purchased separately, contact Amphenol, Sidney, NY.

Amphe-Lite Series

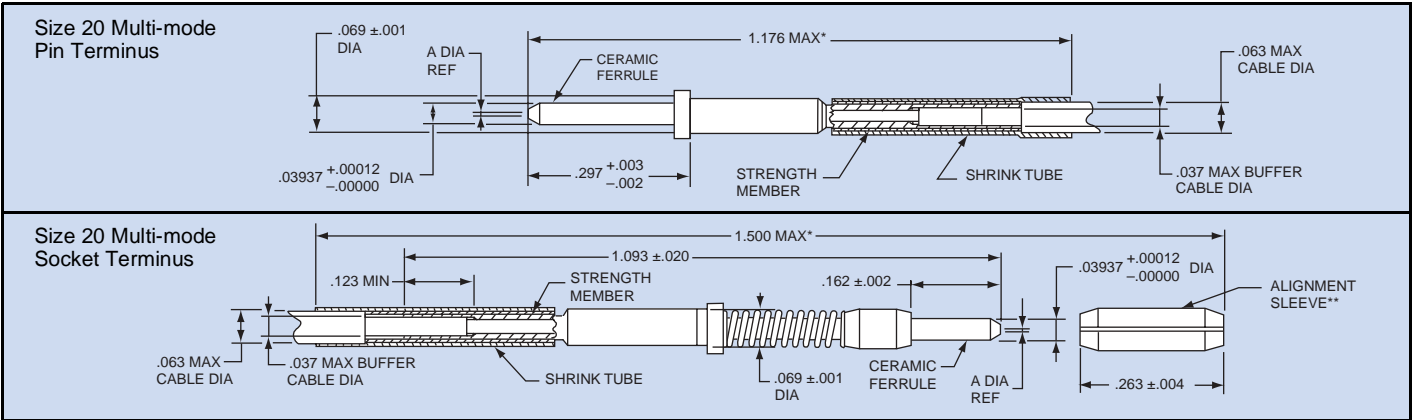
fiber optic termini – multi-mode, size 20

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.

Ordering Information
Multi-mode Termini (Size 20) 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

fiber optic termini – 90° multi-mode, size 16

Amphenol provides 90°, size 16 fiber optic termini that can be used with multi-channel cylindrical connectors.

90° Socket Termini (Size 16)

Ordering Information for 90° Multi-mode Socket Termini

| Fiber Size† Core/Cladding Dia (Microns) | Socket, Size 16 Amphenol Part Number For use in Cylindrical Connectors | A Dia Ref | |
|---|---|-----------|---------|
| | | Inches | Microns |
| 50/125 | CF-198111-010 | .0050 | 127 |
| 62.5/125 | | | |
| 100/140 | CF-198111-017 | .0057 | 145 |
| 100/140/172 | CF-198111-29 | OR | .0069 |
| | CF-198111-29A | | .0068 |

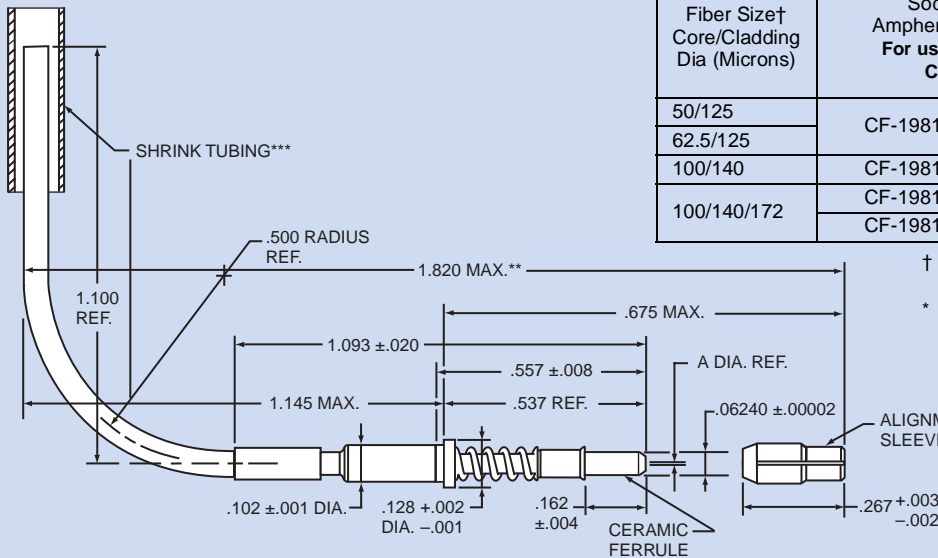
† Additional sizes available upon request: consult Amphenol, Sidney, NY for availability.

* Consult Amphenol, Sidney, NY for ordering

information.

** Indicated dimension when fully assembled.

*** Shrink tubing and alignment sleeve are shipped unassembled.



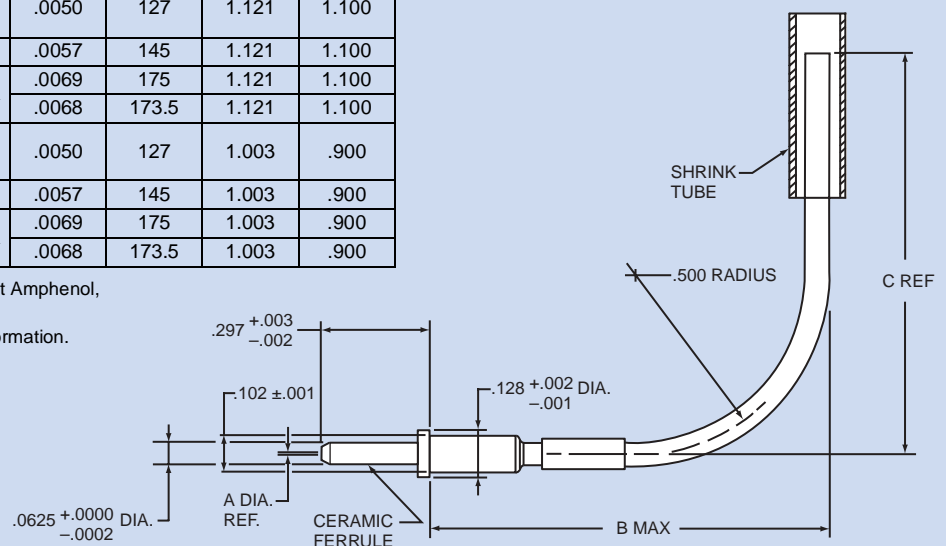
90° Pin Termini (Size 16)

Ordering Information for 90° Multi-mode Pin Termini

| Fiber Size† Core/Cladding Dia (Microns) | Pin, Size 16 Amphenol Part Number For use in Cylindrical Connectors | A Dia Ref | | B Max (Inches) | C Ref (Inches) |
|---|--|-----------|---------|-------------------|-------------------|
| | | Inches | Microns | | |
| 50/125 | CF-198110-010 | .0050 | 127 | 1.121 | 1.100 |
| 62.5/125 | | | | | |
| 100/140 | CF-198110-017 | .0057 | 145 | 1.121 | 1.100 |
| 100/140/172 | CF-198110-029 | OR | .0069 | 1.121 | 1.100 |
| | CF-198110-29A | | .0068 | | |
| 50/125 | CF-198112-010 | .0050 | 127 | 1.003 | .900 |
| 62.5/125 | | | | | |
| 100/140 | CF-198112-017 | .0057 | 145 | 1.003 | .900 |
| 100/140/172 | CF-198112-029 | OR | .0069 | 1.003 | .900 |
| | CF-198112-29A | | .0068 | | |

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

* Consult Amphenol, Sidney, NY for ordering information.



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.

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

† To be determined.

†† 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 shells, with fluorinated silicone rubber components for increased fluid resistance

FD . . . electroless nickel plating composite shells, with dimethyl silicone rubber components

U . . . black composite, unplated, with fluorinated silicone rubber components for increased fluid resistance

UD . . . black composite, unplated, with dimethyl silicone rubber components

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

C designates pin PC tail contacts loaded in connector (see page 17).

D designates socket PC tail contacts loaded in connector (see page 17).

Alternate Positions

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

Specials

NMG . designates non-magnetic connectors.

See page 24 for description of the new non-magnetic product offering of 100% non-magnetic style Amphe-lite connectors. Other 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 Industrial, Sidney NY for special packaging requirements



RoHS COMPLIANT PRODUCT

AVAILABLE - Consult Amphenol Industrial Operations.

Amphe-Lite – capabilities

fiber optics, coax contacts, flex termination, PC tails

FIBER OPTIC

Fiber optic termini connectors offer a precision optic interconnect system within the Amphe-Lite connector. The Amphe-Lite connector provides protection from damage in severe environmental and physical conditions. Optical performance is optimized utilizing the ceramic alignment features employed by the termini. Insertion losses are typically .8dB and can range from .5 to 1.5 dB, depending on test conditions.

See pages 18-20 for fiber optic termini features and how to order. Ask for publication 12-352 or contact Sidney, NY for more information on Amphenol Fiber Optic Connectors.

Also available with MT and LC termination within an Amphe-Lite shell kit. Contact Amphenol, Sidney for more information.

CONNECTORS WITH COAX CONTACTS

For shielded wire applications, coaxial contacts can be incorporated into Amphe-Lite connectors. Designed-in crimp or solder types are available to fit various RG and special cables. High performance coaxial contacts eliminate discontinuities or impedance variations due to movement of parts under axial load.

For further information on coax contacts ask for catalog 12-130

FILTER CONNECTORS FOR EMI PROTECTION

EMI shielding protection can be integrated into the Amphe-Lite connector with a planar array filter device. This provides a cost effective alternative to discrete devices mounted inside the box, and provides the weight and space savings necessary for modern electronic systems.

Amphenol's industrial connectors with filter protection are called the Amphe-dB Series; a family of popular industrial cylindricals that are enhanced to provide EMI protection. The Amphe-dB Series family includes the Amphe-Lite filter with a planar filter device and also MIL-5015 and MIL-C-26482 connectors which incorporate chip capacitor board filter devices.

FLEX TERMINATION ASSEMBLIES FOR PRINTED CIRCUIT BOARD APPLICATIONS

Amphenol provides flex termination assemblies for printed circuit board attachment. Flex circuits are available for Amphe-Lite connectors in flat or sculptured styles. Sculptured® Flexible Circuits with built-in terminations eliminate the failures associated with crimped or solder-on contacts, and they are designed to geometrically fit the tight space requirements within a unit. They plug into a printed circuit board and create a self-locking terminal pad which eliminates the need for an additional interconnect to the PCB.

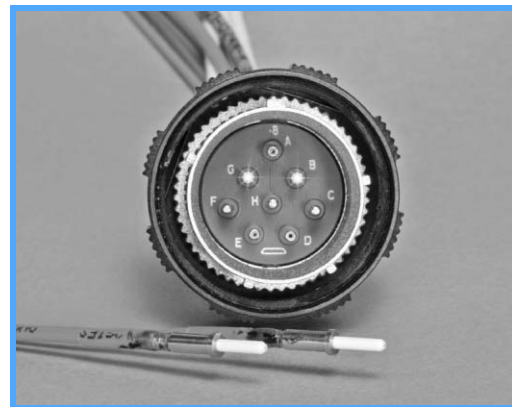
Consult Amphenol Industrial Operations for information on Amphe-Lite connectors with flex circuits.

PC TAIL CONTACTS IN AMPHE-LITE CONNECTORS

Another Amphe-Lite option allowing for greater flexibility, is the jam nut with the stand-off adapter. This combination provides a means to fasten a PCB or rigid flex to the rear of a jam nut shell. Shell style designator is a 0P. An example part number is AL0PF17-35P. Consult Amphenol Industrial Operations for further information.



Amphe-Lite Jam Nut Connector with Stand-off Adapter and PC Tails



Fiber Optics and Coax Contacts



Amphe-dB - Amphe-Lite Connector with Planar Array Filter



Flex Termination Assemblies

See catalogs online at
www.amphenol-industrial.com

Amphe-Lite Series – capabilities

non-magnetic connectors, ground plane connectors, twinax contacts, power contacts

NON-MAGNETIC AMPHE-LITE CONNECTORS

A new product offering from Amphenol is the non-magnetic Amphe-Lite style which is made of a durable corrosion resistant composite material for harsh environments. The same triple start thread used on standard Amphe-Lite connectors allows for complete mating in a single turn of the coupling nut. IP67 sealing grommets and interfacial seals are standard. It is an ideal solution for MRI equipment in the medical market, and in other test equipment where a 100% non-magnetic multi-conductor connector is required.

With up to 128 size 22D contacts in one connector, the Amphenol non-magnetic Amphe-Lite is one of the few 100% non-magnetic connectors available today. It is available in a straight plug and three receptacle shell styles: wall mount, in-line and jam nut. Non-magnetic styles are available with many of the standard Amphe-Lite inserts. A wide variety of contact styles can be incorporated, and it can also be assembled with Amphenol ACT flex circuits.

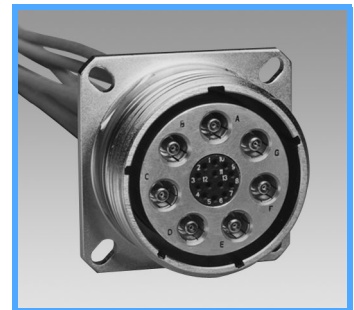


Non-Magnetic Amphe-Lite Connector with Power Contacts, Fiber Optics and Flex Circuitry

GROUND PLANE CONNECTORS

Amphenol offers Amphe-Lite connectors for data bus, LAN and coax/triax/twinax transmission lines with conductive inserts that ground the outer conductor of the coax, triax or twinax contact to the shell. These connectors are sold “less contacts”. They will accommodate size 8 coax, triax or twinax contacts or size 12 and 16 coax contacts.

The insert availability chart on page 3 indicates the patterns that are available in a ground plane version, (see those designated with a star symbol), and consult Amphenol, Sidney NY for ordering procedures.

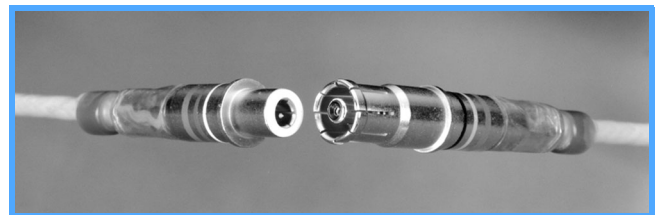


Ground Plane Connector with Metallic Insert and Concentric Twinax Contacts

CONNECTORS WITH CONCENTRIC TWINAX CONTACTS

The size 8 concentric twinax contact was developed for use in MIL-STD-1553 Airborne multiplex data bus applications which require high performance interconnect characteristics in multi-pin connectors. The Amphe-Lite Series with concentric twinax contacts are ideal for communication data bus applications. The concentric twinax contact is crimp terminable to twisted-shielded cable.

For further information on concentric twinax contacts ask for Amphenol Catalog 12-130.



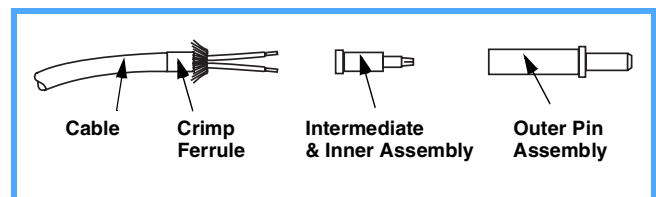
Concentric Twinax Contacts Qualified to M39029/90 and /91

CONNECTORS WITH REDUCED COMPONENT TWINAX (RCT) CONTACTS

The RCT (Reduced Component Twinax) contact meets MIL-C-39029/90 and /91 requirements for interchangeability and performance while reducing the number of user-assembled components from seven to three. The inner conductors and outer barrel of the RCT are each terminated to the cable by a crimp joint, so no costly assembly soldering operations are required. Features include:

- Three user assembled components
- Available in size 8 and size 10 contacts
- MIL-C-17/176-00002 cable termination
- For installation in Amphe-Lite connectors
- Termination completed in only two crimping operations
- Inner conductors stripped to common length, eliminating multiple measurements

For further information on RCT contacts ask for Amphenol Catalog 12-130.



RCT (Reduced Component Twinax) Contact

CONNECTORS WITH POWER CONTACTS

Size 10 power, size 12 and size 16 contacts are available in many standard insert arrangements. These contacts provide a wide range of power transmission capabilities. Standard contacts are gold plated to maintain a superior conductive surface. For further information on insert patterns that contain power contacts refer to the insert availability chart on page 3.

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