

Amphenol® Amphe-Armor™ Series Rugged Over-Molded Connectors

SL-401-3

Heavy Duty High Impact Plug Connectors

Two Popular Connector
Plug Insert Choices:

PT Series Environmental
with Solder Contacts

Amphe-Power® GT Series
Environmental with
RADSOK® Contacts



For Harsh Environments



Amphenol

www.amphenol-industrial.com

Amphenol® Amphe-Armor™ Series Rugged Over-molded Connectors

A rugged connector originally designed for the geophysical industry and the exploration of natural resources, where connectors are needed to withstand the harsh environments of oil, gas, mud and water. The Amphe-Armor™ also meets the rugged criteria for heavy equipment, outdoor lighting, machine tool and many other harsh environment situations. The Amphenol® PT bayonet plug connector or the Amphe-

Power® GT reverse bayonet plug connector is housed in a high impact glass filled thermoplastic molding. This outer housing is very resistant to damage either by physical abuse or fluid immersion. A heavy duty coupling nut and protection cap also contribute to the rugged features of this series of connectors. The Amphe-Armor is so rugged it can be driven over without destroying the electrical integrity of the connector.

Features of Amphe-Armor™

- Over-molded for protection and sealing
- Field installable, field repairable
- IP 67 rated
- Available with straight plug connectors in a choice of two of Amphenol's rugged environmental series:
 - PT series with solder termination, bayonet coupling
 - Amphe-Power GT with crimp termination, reverse bayonet coupling
- Black zinc cobalt plated connector shell is standard
- Molded housing made of high impact glass-filled thermoplastic
- Temperature range: -55°C to +125°C
- Heavy duty coupling nut

Markets for Amphe-Armor™

- Machine tool
- Railway/Mass transit
- Outdoor lighting
- Motor control and access
- Hybrid vehicles
- General purpose industrial controls
- Energy control systems
- Meterological
- Test and measurement
- Sewage treatment
- Wind power, alternative energy



Amphe-Armor™ Rugged Over-Molded
Connectors Exploded View

Amphenol PT Connectors

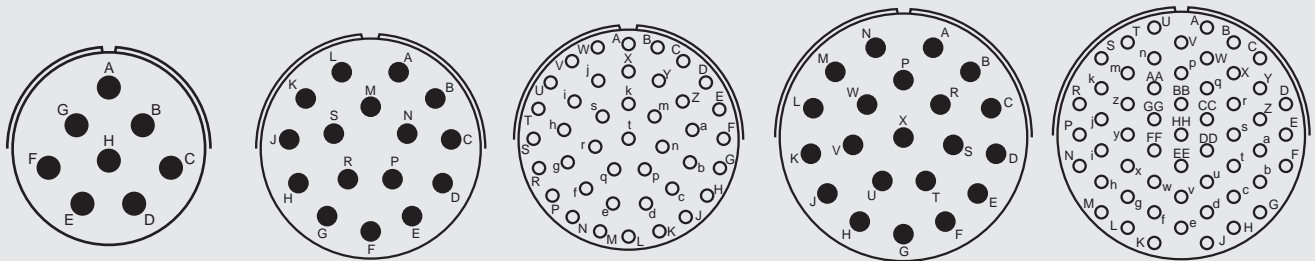
These connectors are widely used in industrial markets where environmental performance is demanded. They are MIL-C-26482 type connectors with three-point bayonet coupling. Resilient inserts provide high dielectric strength and moisture barrier.

See catalog 12-070 for more information on Amphenol PT Series.

Amphe-Armor™ How to Order

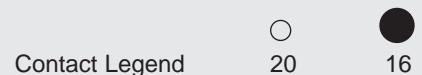
| Example part number: | | AAP | 06 | 16-8 | S | X | (025) | (D21R) |
|----------------------|--|-----|----|------|---|---|-------|--------|
| AAP | designates Amphe-Armor™ assembly with PT connector with solder termination | | | | | | | |
| AAG | designates Amphe-Armor™ assembly with Amphe-Power GT with crimp termination | | | | | | | |
| 06 | designates straight plug style | | | | | | | |
| 16-8 | designates shell size and arrangement <i>(See contact arrangements below. For availability of other arrangements consult Amphenol Industrial Operations).</i> | | | | | | | |
| S | designates socket contacts (for PT connectors) | | | | | | | |
| P | designates pin contacts (for PT or GT connectors) | | | | | | | |
| R | designates RADSOK® socket contacts (for Amphe-Power GT connectors) | | | | | | | |
| X | designates alternate rotation <i>(refer to Table AA-2)</i> | | | | | | | |
| (025) | designates black zinc cobalt finish (standard) For availability of other shell finishes consult Amphenol Industrial. | | | | | | | |
| (D21R) | designates liquid tight seal <i>(Refer to Table AA-1)</i> | | | | | | | |

PT/26482 Insert Arrangements Available in shell sizes 16, 20 and 22 with contact sizes 16 or 20.



| Insert Arrangement | 16-8 | 20-16 | 20-41 | 22-21 | 22-55 |
|--------------------|------|-------|-------|-------|-------|
| Service Rating | II | II | I | II | I |
| Number of Contacts | 8 | 16 | 41 | 21 | 55 |
| Contact Size | 16 | 16 | 20 | 16 | 20 |

PT Solder Contact/Connector Ratings



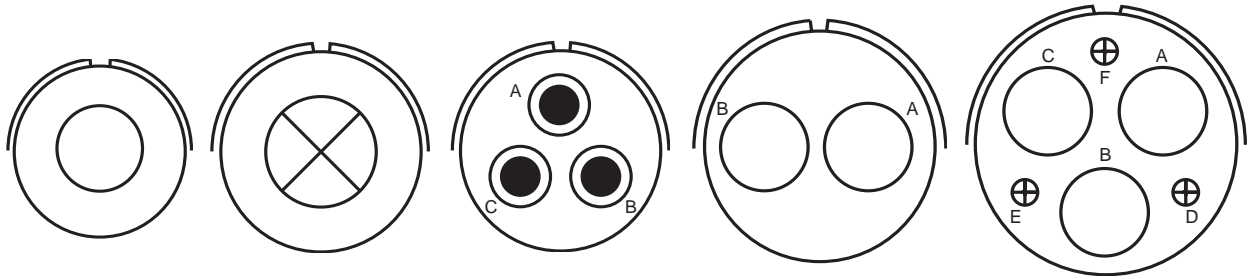
| Contact Specifications | | | | |
|------------------------|--------------|--------------------------|---|---|
| Contact Size | Test Current | Maximum Millivolt Drop** | Solder Well Diameter | Solder Well Depth |
| 20 | 7.5 | 55 | .046 ^{+0.004} / _{-.000} | .125 ^{+0.031} / _{-.000} |
| 16 | 13.0 | 50 | .078 ^{+0.005} / _{-.003} | .188 ^{+0.031} / _{-.000} |
| 12 | 23.0 | 42 | .116 ^{+0.004} / _{-.002} | .188 ^{+0.031} / _{-.000} |

| Service Rating | | | | | |
|----------------|---|-------------------------------|------------|------------|-------------|
| Service Rating | Recommended Operating AC Voltage at Sea Level | Test Voltage AC (RMS), 60 cps | | | |
| | | Sea Level | 50,000 ft. | 70,000 ft. | 110,000 ft. |
| I | 600 | 1,500 | 500 | 375 | 200 |
| II | 1,000 | 2,300 | 750 | 500 | 200 |

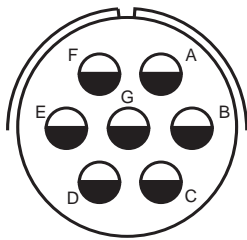
GT Insert Arrangements

Available in shell sizes 18, 20, 24 and 28 with RADSOK® contacts or standard pin contacts.

RADSOK® sockets can be used in contact cavities of size 12, 8, 4 and 0.

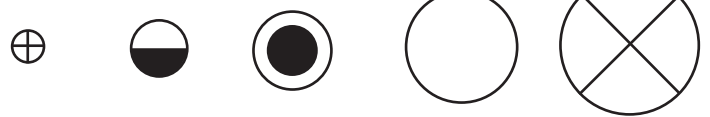


| | | | | | |
|--------------------|------|------|-------|------|-------|
| Insert Arrangement | 18-6 | 20-2 | 20-19 | 24-9 | 28-22 |
| Service Rating | D | D | A | A | D |
| Number of Contacts | 1 | 1 | 3 | 2 | 3 3 |
| Contact Size | 4 | 0 | 8 | 4 | 4 16 |



| | |
|--------------------|------|
| Insert Arrangement | 24-2 |
| Service Rating | D |
| Number of Contacts | 7 |
| Contact Size | 12 |

| | | | | | |
|----------------|----|----|---|---|---|
| Contact Legend | 16 | 12 | 8 | 4 | 0 |
|----------------|----|----|---|---|---|



Amphe-Power GT Connectors

High amperage capability connectors for the most demanding power industrial and transportation applications, the Amphe-Power® GT uses 5015 inserts and has RADSOK® contacts (twisted hyperbolic grid contacts which can handle up to 50% higher amperages than standard contacts). The GT connector has reverse bayonet coupling; rated to 2000 couplings min. Resilient inserts provide high dielectric strength and moisture barrier. See catalog SL-391 for more information on Amphe-Power® connectors and RADSOK® contacts.

Amphe-Power GT Contact Service Ratings

| MS Service Rating | Recommended Operating Voltage at Sea Level | | Effective Creepage Distance Nom. | Mechanical Spacing Nom. |
|-------------------|--|----------|----------------------------------|-------------------------|
| | DC | AC (RMS) | | |
| Inst. | 250 | 200 | 1/16 | |
| A | 700 | 500 | 1/8 | 1/16 |
| D | 1250 | 900 | 3/16 | 1/8 |
| E | 1750 | 1250 | 1/4 | 3/16 |
| B | 2450 | 1750 | 5/16 | 1/4 |
| C | 4200 | 3000 | 1 | 5/16 |

RADSOK® Features



- Up to 50% more ampacity with same size contact
- Less heat generation
- High cycle durability
- Low insertion force
- High pin to contact ratio
- Smaller package size

Amphe-Power with RADSOK® Sockets Contact Ratings

| | |
|---------|----------|
| Size 12 | 35 Amps |
| Size 8 | 70 Amps |
| Size 4 | 120 Amps |
| Size 0 | 250 Amps |

The Amphe-Armor™ is sold with the connector style and insert of choice along with a component kit which includes:

- Compression nut
- Anti-friction washer (2)
- Backshell
- O-ring (3)
- Coupling ring
- Protection cap

Assembly instructions are provided.

This brochure covers the availability of the plug connector within the Amphe-Armor assembly. Mating receptacle styles of PT series connectors can be selected in catalog 12-070. Mating receptacle styles of Amphe-Power GT series connectors can be selected in catalog SL-391. These catalogs are on-line at www.amphenol-industrial.com.

Amphenol

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For a list of authorized Amphe-Armor

Distributors visit:

www.amphenol-industrial.com/amphe-armor

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| Liquid Tight | Dome or Flex | Shell Size | | Cable Range inches (mm) |
|--------------|--------------|------------|---------|-------------------------|
| | | PT | GT | |
| D21R | Dome | 16 & 20 | 18 & 20 | .35-.63 (9-16) |
| F21R | Flex | 16 & 20 | 18 & 20 | .35-.63 (9-16) |
| D21A | Dome | 16 & 20 | 18 & 20 | .51-.71 (13-18) |
| F21A | Flex | 16 & 20 | 18 & 20 | .51-.71 (13-18) |
| D29R | Dome | 22 | 24 & 28 | .51-.79 (13-20) |
| D29A | Dome | 22 | 24 & 28 | .71-.98 (18-25) |

Table AA-1

| Inset Rotation | | | | | | |
|----------------|------------|--------------------|---------|-----|-----|-----|
| AAP or AAG | Shell Size | Insert Arrangement | Degrees | | | |
| | | | W | X | Y | Z |
| AAP | 16 | 16-8 | 54 | 152 | 180 | 331 |
| AAP | 20 | 20-16 | 238 | 318 | 333 | 347 |
| AAP | 20 | 20-41 | 45 | 126 | 225 | - |
| AAP | 22 | 22-21 | 16 | 135 | 175 | 349 |
| AAP | 22 | 22-55 | 30 | 142 | 226 | 314 |
| AAG | 18 | 18-6 | - | - | - | - |
| AAG | 20 | 20-2 | - | - | - | - |
| AAG | 20 | 20-19 | 90 | 180 | 270 | - |
| AAG | 24 | 24-2 | 80 | - | - | 280 |
| AAG | 24 | 24-9 | 35 | 110 | 250 | 325 |
| AAG | 28 | 28-22 | 70 | 145 | 215 | 290 |

Table AA-2