

# 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](http://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

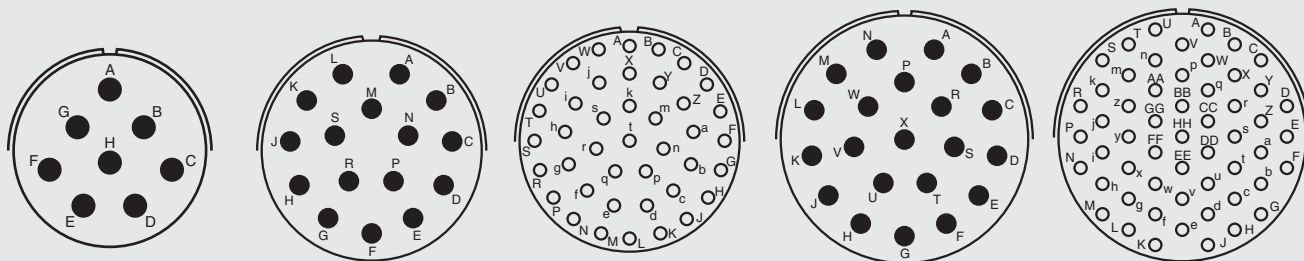
These connectors are widely used in industrial markets where environmental performance is demanded. They are MIL-C-26482 type connectors with three-point bayonet coupling. Resilient inserts provide high dielectric strength and moisture barrier.

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

# Amphe-Armor™ How to Order

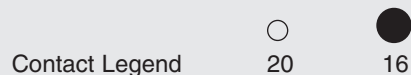
Example part number:		AAP	06	16-8	S	X	(025)	(D21R)
<b>AAP</b>	designates Amphe-Armor™ assembly with PT connector with solder termination							
<b>AAG</b>	designates Amphe-Armor™ assembly with Amphe-Power GT with crimp termination							
<b>06</b>	designates straight plug style							
<b>16-8</b>	designates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



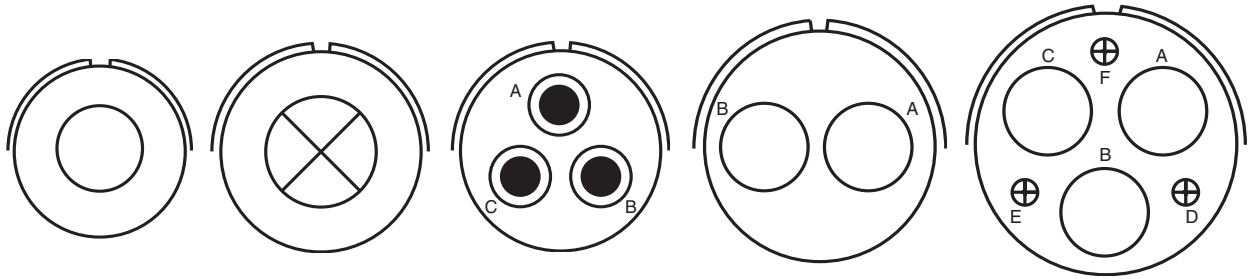
Contact Specifications				
Contact Size	Test Current	Maximum Millivolt Drop**	Solder Well Diameter	Solder Well Depth
20	7.5	55	.046 <sup>+0.004</sup> / <sub>-.000</sub>	.125 <sup>+0.031</sup> / <sub>-.000</sub>
16	13.0	50	.078 <sup>+0.005</sup> / <sub>-.003</sub>	.188 <sup>+0.031</sup> / <sub>-.000</sub>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

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

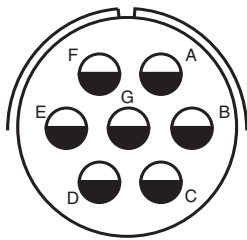
# GT Insert Arrangements

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.

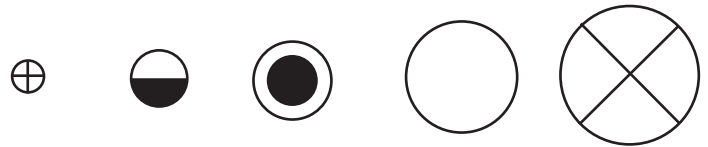


Insert Arrangement	18-6	20-2	20-19	24-9	28-22
Service Rating	D	D	A	A	D
Number of Contacts	1	1	3	2	3 3
Contact Size	4	0	8	4	4 16



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](http://www.amphenol-industrial.com).

## Amphenol

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For a list of authorized Amphe-Armor

Distributors visit:

[www.amphenol-industrial.com/amphe-armor](http://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