

Amphenol



APC - Amphenol Plastic Connector

Company Profile



Endicott, NY



Amphenol Industrial Operations

Amphenol Industrial Operations, headquartered in a 30,000 square foot facility in Endicott, N.Y., provides a full range of high reliability power/signal connectors and interconnection systems specifically for the industrial markets including rail/mass transit, process control, automotive manufacturing, heavy equipment, wireless base stations and petrochemical/power generation.

Products include ruggedized-for-industry cylindrical, rectangular, fiber optic, signal and power, RADSOK power and power-to-board solutions, cable and harness assemblies, as well as industrialized versions of Amphenol's SAE AS 50151 cylindrical, MIL-DTL-26482 miniature cylindrical and GT reverse bayonet cylindrical connectors. Amphenol Industrial Operations employs more than 1,400 people globally and is ISO9001, TS96949 and MIL-STD-790 certified.

Amphenol Technology (Zhuhai) Co., Ltd

Established in 2007, Amphenol Technology (Zhuhai) Co., Ltd. is a manufacturing facility for Amphenol Industrial Operations, which serves a number of industrial markets. Included but not limited to Factory Automation, Transportation, Heavy Equipment, Alternative Energy, Energy Storage. Server/Data Comm and Power Distribution.

Amphenol Technology (Zhuhai) Co., Ltd. covers an area of 276,000 ft² and is equipped with CNC, plating, injection molding and assembly workshops. This plant specializes in the design and manufacturing of industrial connectors featuring high power, high density, medium to high voltage electrical properties, and harsh environment applications. With industry leading engineering, design and manufacturing expertise, Amphenol Technology(Zhuhai) Co., Ltd. has earned more than 60 utility patents on its innovative interconnects. Many of the products produced have been certified by independent standards including UL, IEC/TUV, ATEX, IECEx and MA. The facility is also certified to ISO 9001, ISO 14001 and IATF 16949.

Amphenol Plastic Circular Series

APC series has a plastic shell and rugged design, targeted for industrial power and signal applications with advantages of light weight, high environmental resistance, and cost effective.

Features

- Plastic shell, light weight, inherent corrosion resistant
- Power, signal, and hybrid arrangements
- Triple-start ACME thread for fast coupling
- Stamped and formed contacts
- Water proof and self locking mechanism
- Robust design for ruggedized environment
- UL94 V-0 flammability and F1 rated UV resistance
- UL and CSA certified
- ROHS compliant

Targeted applications

- Industrial machinery
- Factory automation
- Material handling equipment
- Rail/transit vehicles and system
- Medical instrumentation & equipment
- Communication equipment
- HVAC
- Commercial and building equipment
- Lighting and signage
- Agricultural machinery, recreational vehicles

Specifications

| Electrical Charecteristics | | | | |
|----------------------------|-------------------|-----|-----|-----|
| Rated Current | Contact Size | #16 | #12 | #10 |
| | Amperes | 13A | 23A | 30A |
| Rated Voltage | 600V | | | |
| Insulation Resistance | 500M(Min)@500V DC | | | |

| Material and Mechanical | |
|-------------------------|---|
| Components | Material & Plating |
| Shell | Plastic resin with UL94 V-0 |
| Coupling nut | Plastic resin with UL94 V-0 |
| Contact | Copper alloy with tin, silver or gold plating |
| Gasket | Sillicon rubber |
| Grommet | Sillicon rubber |
| Sealing O-Ring | Sillicon rubber |
| Mounting insert | Copper alloy with nickel plating |
| Durability | 500 cycles |
| Contact termination | Crimp |

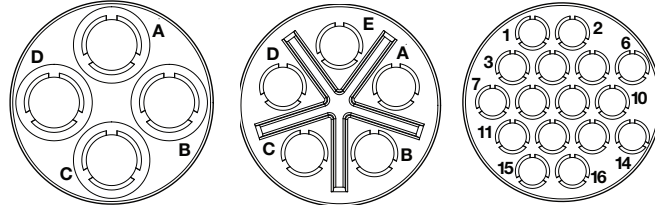
| Enviromental | |
|-----------------------|-------------------------------|
| Waterproof Rating | IP67 |
| Operating Temperature | -40°~105°C |
| Vibration | 10-2000 Hz, 4 hours in 3 axis |
| Mechanical Shock | 50G's |

| Certification | |
|-------------------|--|
| UL Certification | |
| CSA Certification | |

Insert availability and identification

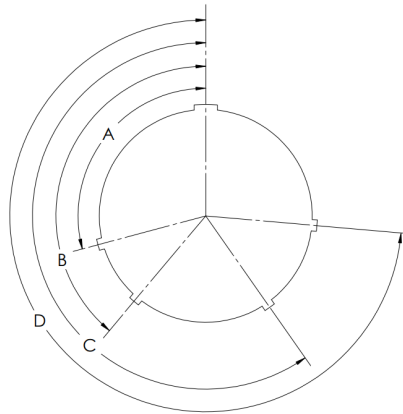
Front face of pin inserts illustrated

Illustration



| Insert Pattern | 18-4 | 18-11 | 18-16 |
|---------------------------------|------|-------|-------|
| Contact Size | 10 | 12 | 16 |
| Contact Quantity | 4 | 5 | 16 |
| Voltage Rating | 600 | 600 | 600 |
| Dielectric withstanding voltage | 2500 | 2500 | 2500 |

Alternate insert positioning



| Keyways Code | A | B | C | D |
|-----------------|------|------|------|------|
| Standard (Omit) | 105° | 140° | 215° | 265° |
| W | 60° | 140° | 225° | 265° |
| X | 75° | 140° | 200° | 265° |
| Y | 90° | 140° | 185° | 265° |
| Z | 115° | 140° | 170° | 265° |

How To Order

| 1 | 2 | 4 | 5 | 6 | 7 | 8 | | |
|----------------|---|------------|--------------------|----------------|----------------|-------------------|-------------|--------|
| APC | 00 | 18- | 11 | P | W | 0 | | |
| Product Series | Shell Style | Shell Size | Insert Arrangement | Contact Gender | | Insert Rotation | Shell Color | |
| 00 | Front or Rear Panel mount receptacle | 18- | 4,11,16 | P | Pin Contact | Omit for standard | Omit | Black |
| 03 | Rear panel mount receptacle with thread on mounting holes | | | S | Socket Contact | W | O | Orange |
| 01 | Inline receptacle with grommet seal | | | | | X | | |
| 06 | Plug with grommet seal | | | | | Y | | |
| 07* | Jam nut receptacle | | | | | Z | | |

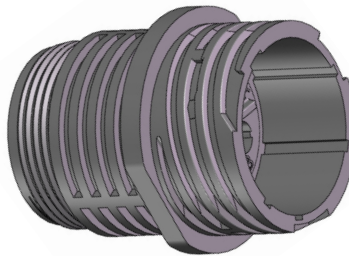
Contacts ordered separately



00 Panel front mount receptacle



03 Panel rear mount receptacle

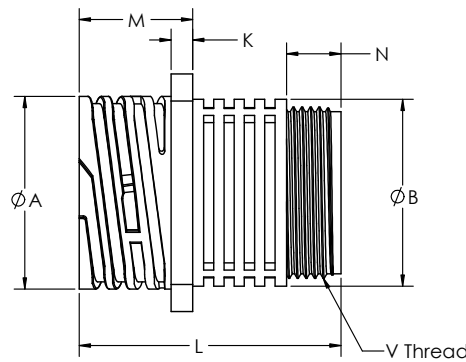
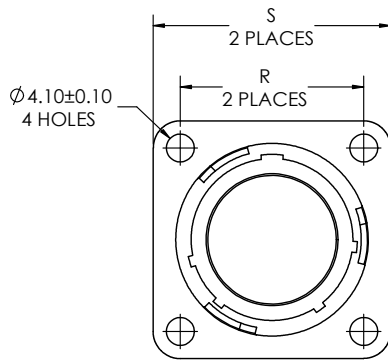


01 Cable Mount Receptacle



06 Cable Plug

Square Flange Receptacle



Panel rear mount 03

| Shell Size | A ±0.25 | L ± 0.25 | R ± 0.25 | S ± 0.25 | M ± 0.25 | N ± 0.25 | K | B ± 0.25 | V Thread CLASS 2A |
|------------|------------|-------------|-------------|-------------|-------------|-------------|-----|-------------|----------------------|
| 18 | 28.32 | 38.46 | 26.97 | 34.93 | 16.66 | 8 | 3.2 | 28.12 | 1 - 20 UNEF |

All dimensions are in mm

Material

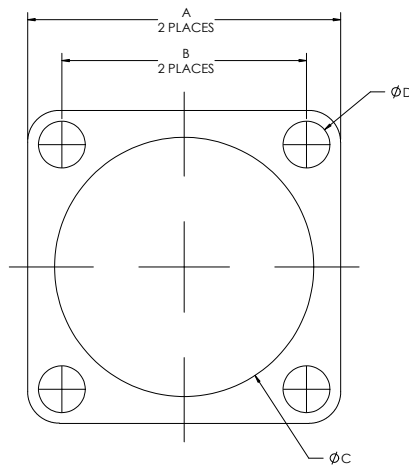
Housing: Nylon, UL94 V-0

Seal O-Ring: SILICON RUBBER, UL94 V-0

Related Product Data

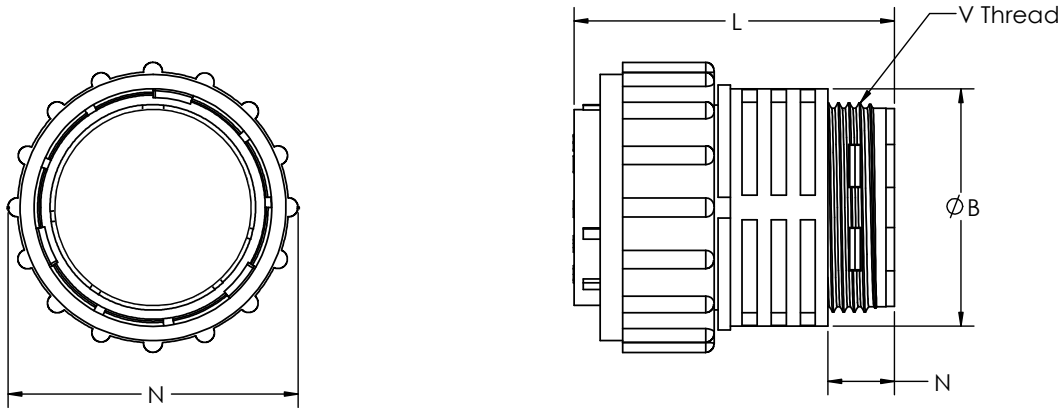
M3 screw torque: 0.4-0.7N.m

Gasket



| Shell Size | Gasket PN | A ±0.25 | B ±0.25 | C ±0.25 | D ±0.25 |
|------------|----------------|---------|---------|---------|---------|
| 18 | C10-781442-018 | 34.5 | 26.97 | 28.58 | 3.68 |

Straight Plug



| Shell Size | N ±0.25 | L ±0.25 | B ±0.25 | N ±0.25 | V Thread Class 2A |
|------------|------------|------------|------------|------------|----------------------|
| 18 | 34.88 | 38.5 | 28.12 | 8 | 1 - 20 UNEF |

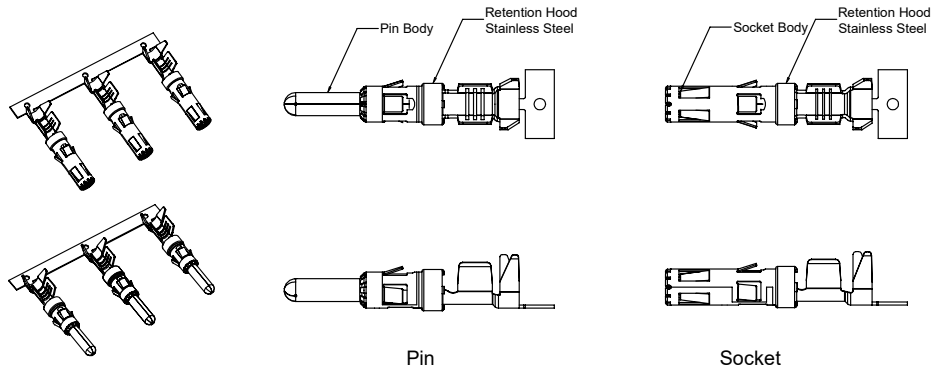
APC series contact part numbering

Material

Contact body: Cooper alloy

Retaining spring: Stainless steel

Surface coating: See below table



How to order

| 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | | | | | | | |
|--------|--------------|--------------|------|--------------------------|-----|-------------|----|----------------|-----|-------------|----|----------------|----|------|
| APC | -C | -M | -16 | -P | -20 | -1 | -R | | | | | | | |
| Series | Contact Type | Contact Type | | Contact Size | | Gender | | Crimp Range | | Plating | | Packing | | |
| | -C | Crimp | Omit | Stamp and formed contact | -10 | Size 10 awg | -P | Pin contact | -10 | 10-12 AWG | -1 | Tin | -R | Reel |
| | | | | | -12 | Size 12 awg | -S | Socket contact | -12 | 12 - 14 AWG | -2 | Ni Plating | | |
| | | | | | -16 | Size 16 awg | | | -16 | 16 -18 AWG | -3 | Gold Flash | | |
| | | | | | -20 | Size 20 awg | | | -20 | 20-22 AWG | -6 | Silver plating | | |

How to order

| Size | Current (A) | Wire Size Range | | Ins. Dia. Range | Contact Finish | Part Number | | PCS / Reel |
|------|----------------|-----------------|-----------------|-----------------|----------------------|-------------------|-------------------|------------|
| | | AWG | mm ² | | | Pin | Socket | |
| 10 | 30 | 10-12 | 3.3-5.2 | 4.0-4.6 | Tin Plating | APC-C-10-P-10-1-R | APC-C-10-S-10-1-R | 1500 |
| | | | | | 100u" Silver Plating | APC-C-10-P-10-6-R | APC-C-10-S-10-6-R | |
| 12 | 23 | 12-14 | 2-3.3 | 3.2-3.8 | Tin Plating | APC-C-12-P-12-1-R | APC-C-12-S-12-1-R | 3000 |
| | | | | | Ni Plating | APC-C-12-P-12-2-R | APC-C-12-S-12-2-R | |
| | | | | | 100u" Silver Plating | APC-C-12-P-12-6-R | APC-C-12-S-12-6-R | |
| 16 | 13 | 16-18 | 0.8-1.3 | 2.4-2.8 | Tin Plating | APC-C-16-P-16-1-R | APC-C-16-S-16-1-R | 3000 |
| | | | | | Ni Plating | APC-C-16-P-16-2-R | APC-C-16-S-16-2-R | |
| | | | | | Gold Flash | APC-C-16-P-16-3-R | APC-C-16-S-16-3-R | |
| | 7.5 | 20-22 | 0.3-0.5 | 2.2-2.5 | Tin Plating | APC-C-16-P-20-1-R | APC-C-16-S-20-1-R | 3000 |
| | | | | | Ni Plating | APC-C-16-P-20-2-R | APC-C-16-S-20-2-R | |
| | | | | | Gold Flash | APC-C-16-P-20-3-R | APC-C-16-S-20-3-R | |

Extraction tool

| Shell Size | Order part number |
|------------|-------------------|
| 16 | TOOL-APC-EX-16 |
| 12 | TOOL-APC-EX-12 |
| 10 | TOOL-APC-EX-10 |



Accessories

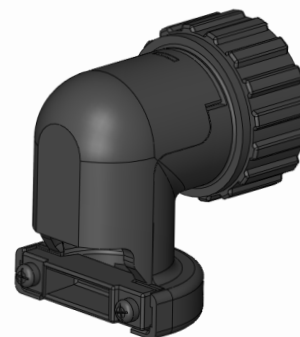
Strain relief straight

| Shell Size | Order part number |
|------------|-------------------|
| 18 | APC-SR-18-180 |



Strain relief 90°

| Shell Size | Order part number |
|------------|-------------------|
| 18 | APC-SR-18-90 |



Amphenol Plastic Circular Series

APC Mini series has a plastic shell and rugged design, targeted for industrial signal applications with advantages of light weight high environmental resistance and cost effective.

Features

- Plastic shell, light weight, inherent corrosion resistant
- 2 way bayonet for fast coupling
- Stamped and formed contacts
- Water proof and self locking mechanism
- Robust design for ruggedized environment
- UL94 V-0 flammability and F1 rated UV resistance
- UL and CSA Certified
- ROHS compliant

Targeted applications

- Industrial machinery
- Factory automation
- Material handling equipment
- Rail/transit vehicles and system
- Medical instrumentation & equipment
- Communication equipment
- HVAC
- Commercial and building equipment
- Lighting and signage
- Agricultural machinery, recreational vehicles

Specifications

| Electrical Charecteristics | | |
|---------------------------------|-------------------|------|
| Rated Current | Contact Size | #20 |
| | Amperes | 7.5A |
| Rated Voltage | 250V AC | |
| Dielectric Withstanding Voltage | 1500V AC | |
| Insulation Resistance | 500M(Min)@500V DC | |

| Material and Mechanical | |
|-------------------------|---|
| Components | Material & Plating |
| Shell | Plastic resin with UL94 V-0 |
| Coupling nut | Plastic resin with UL94 V-0 |
| Contact | Copper alloy with tin, silver or gold plating |
| Gasket | Sillicon rubber |
| Grommet | Sillicon rubber |
| Sealing O-Ring | Sillicon rubber |
| Mounting insert | Copper alloy with nickel plating |
| Durability | 500 cycles |
| Contact termination | Crimp |

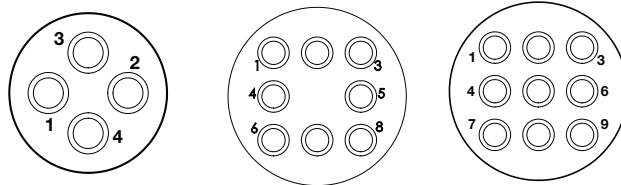
| Enviromental | |
|-----------------------|-------------------------------|
| Waterproof Rating | IP67 (mated) |
| Operating Temperature | -40°~105°C |
| Vibration | 10-2000 Hz, 4 hours in 3 axis |
| Mechanical Shock | 50G's |

| Certification | |
|-------------------|--|
| UL Certification | |
| CSA Certification | |

Insert availability and identification

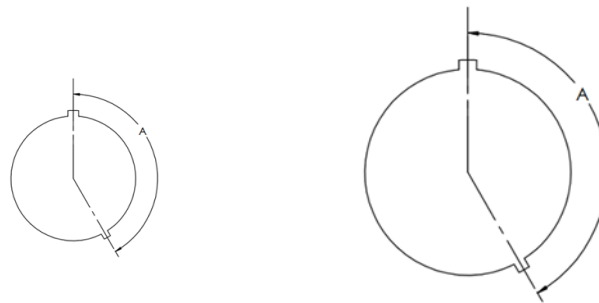
APC Mini series

Front face of pin inserts illustrated



| Insert Pattern | 8-4 | 11-8 | 11-9 |
|---------------------------------|------|------|------|
| Contact Size | 20 | 20 | 20 |
| Contact Quantity | 4 | 8 | 9 |
| Voltage Rating | 250 | 250 | 250 |
| Dielectric withstanding voltage | 1500 | 1500 | 1500 |

Alternate insert positioning



| Keyways Code | A |
|--------------|------|
| N (Omit) | 150° |
| W | 170° |

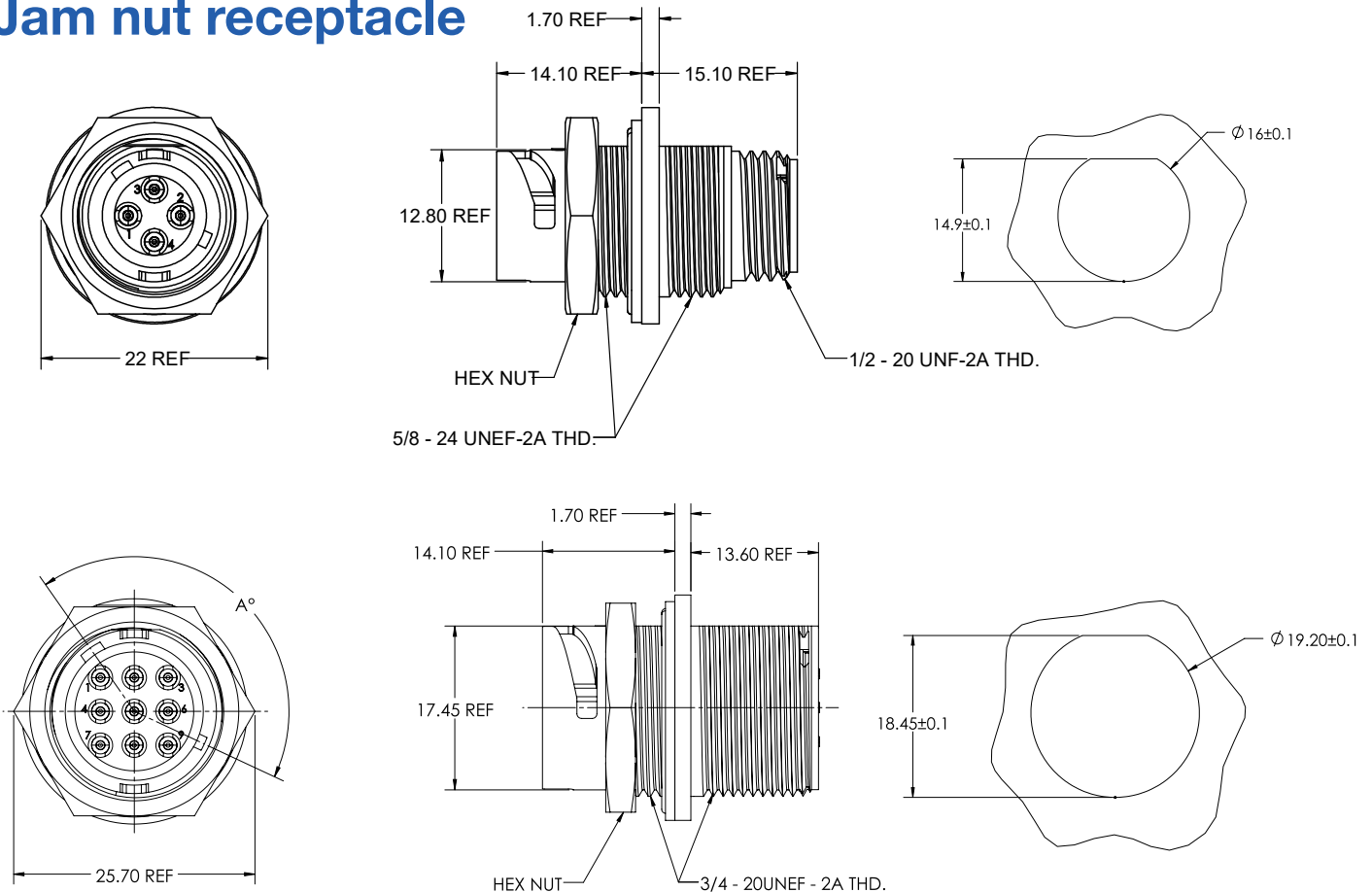
| Keyways Code | A |
|--------------|------|
| N (Omit) | 150° |
| W | 165° |
| X | 180° |

How To Order

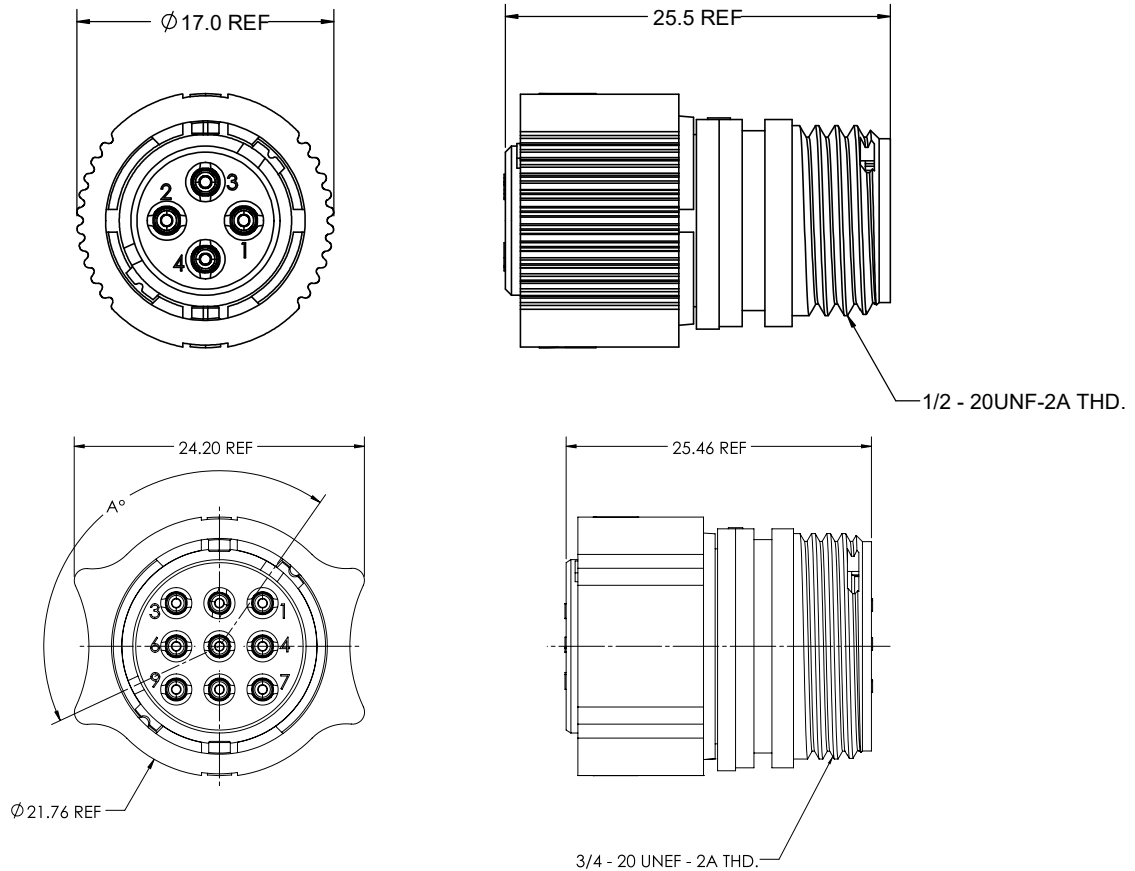
| 1 | 2 | 3 | 4 | 5 | 6 | 7 | | |
|----------------|------------------------|------------|--------------------|----------------|----------------|-------------------|-----------------------------|--------|
| APC | 07 | 8- | 4 | P | W | 0 | | |
| Product Series | Shell Style | Shell Size | Insert Arrangement | Contact Gender | | Insert Rotation | Shell Color | |
| 06 | Plug with grommet seal | 8- | 4 | P | Pin Contact | Omit for standard | Omit | Black |
| 07 | Jam nut receptacle | 11- | 8, 9 | S | Socket Contact | W | O | Orange |
| | | | | | | X | Contacts ordered separately | |

Note: 1. The torque to install the hex nut is 1.0-2.0N.m
 2. Wall thickness is required 2.2-3.15mm

Jam nut receptacle



Straight plug



Material

Contact body: Cooper alloy

Surface plating: see below table

APC Mini series contacts part numbering

| 1 | 2 | 3 | 4 | 5 | 6 | 7 | | | | |
|-----------------------|----------------------|------------------------|--------------------------|-----------------------|--|--------------------|----------------|--|----------------|--|
| APC | -C | -20 | -P | -18 | -1 | -R | | | | |
| Product Series | Contact Style | Contact size | | Contact Gender | | Crimp Range | Plating | | Packing | |
| | -C Crimp | -20 Size 20 AWG | -P Pin Contact | -18 18-22 AWG | -1 Tin plating | -R Reel | | | | |
| | | | -S Socket Contact | | -2 Gold on functional area, Tin on other area | | | | | |

How to order

| Size | Current (A) | Wire Size Range | | Ins. Dia. Range | Contact Finish | Part Number | | PCS / Reel |
|------|-------------|-----------------|-----------------|-----------------|--|-------------------|-------------------|------------|
| | | AWG | mm ² | | | Pin | Socket | |
| 20 | 7.5 | 18-22 | 0.3-0.8 | 1.5-2.2 | Tin Plating | APC-C-20-P-18-1-R | APC-C-20-S-18-1-R | 3000 |
| | | | | | Gold on functional area, Tin on other area | APC-C-20-P-18-2-R | APC-C-20-S-18-2-R | |

Extraction tool

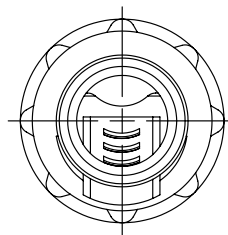
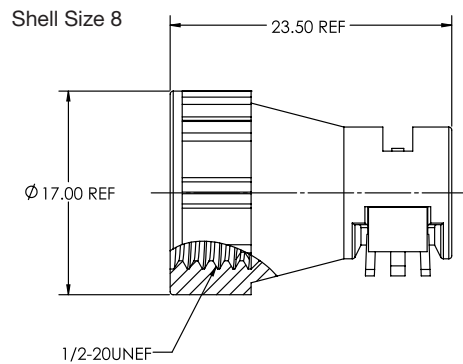
| Shell Size | Order part number |
|------------|-----------------------|
| 20 | TOOL-APC-EX-20 |



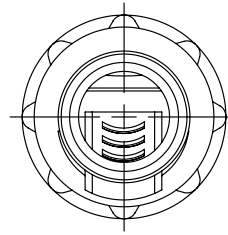
Accessories

Strain relief straight

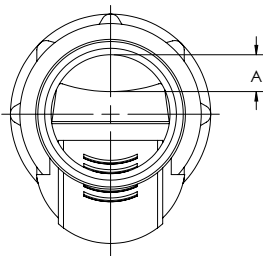
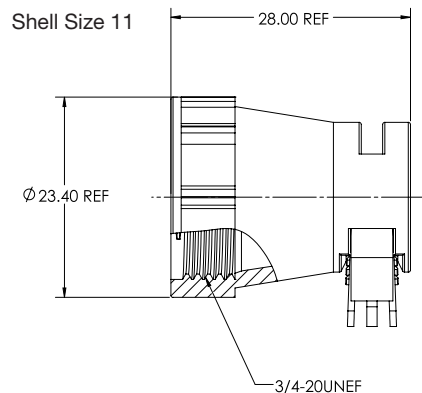
| Shell Size | Order part number | Cable range for REFERENCE (Unit:mm) | |
|------------|----------------------|-------------------------------------|-----------------|
| | | Type I | Type II |
| 8 | APC-SR-8-180 | 2.59-4.9 | 0.43-2.8 |
| 11 | APC-SR-11-180 | 5.75-10.2 | 0.94-5.4 |



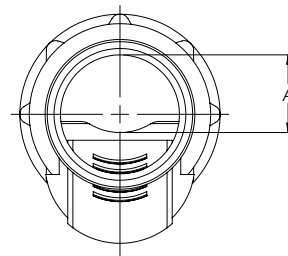
TYPE I



TYPE II



TYPE I



TYPE II





AMPHENOL CORPORATION

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