

# 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 ft<sup>2</sup> 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

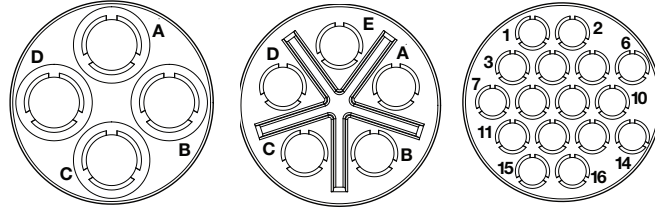
Enviromental	
Waterproof Rating	IP67
Operating Temperature	-40°~105°C
Vibration	10-2000 Hz, 4 hours in 3 axis
Mechanical Shock	50G's

Certification	
UL Certification	
CSA Certification	

## Insert availability and identification

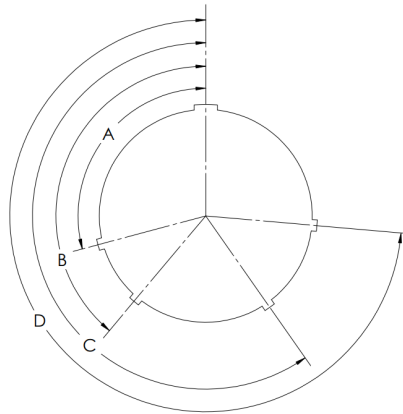
Front face of pin inserts illustrated

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		

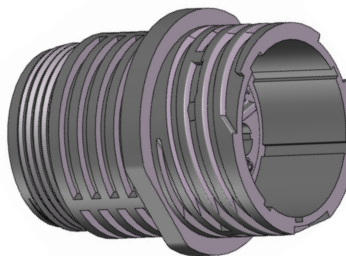
Contacts ordered separately



**00** Panel front mount receptacle



**03** Panel rear mount receptacle

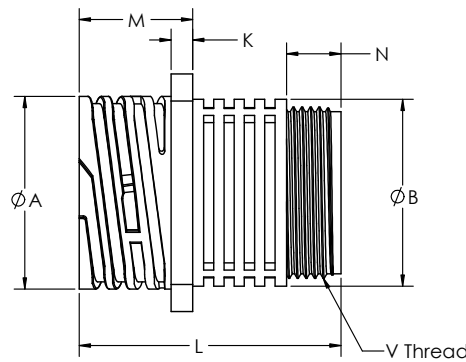
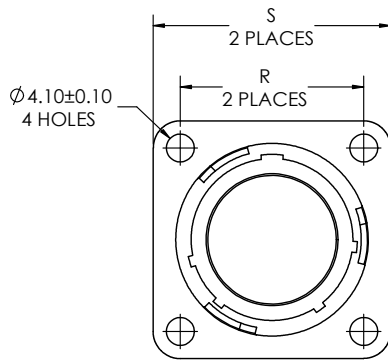


**01** Cable Mount Receptacle



**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

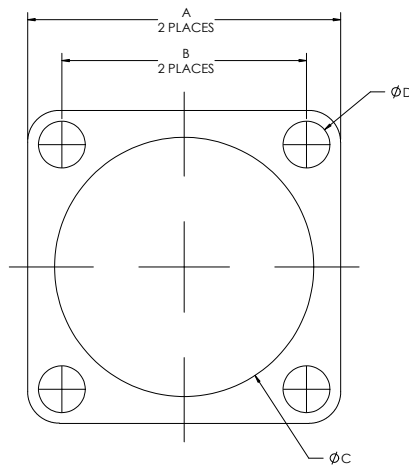
**Housing:** Nylon, UL94 V-0

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

## Related Product Data

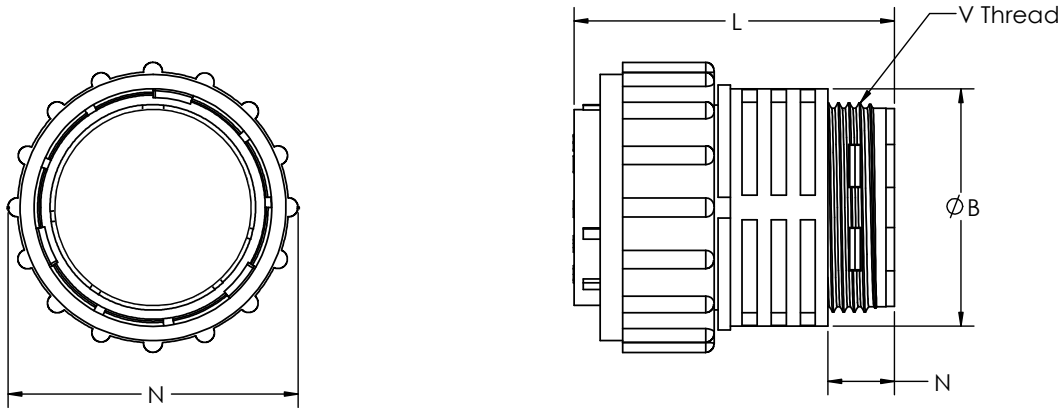
**M3 screw torque:** 0.4-0.7N.m

# 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

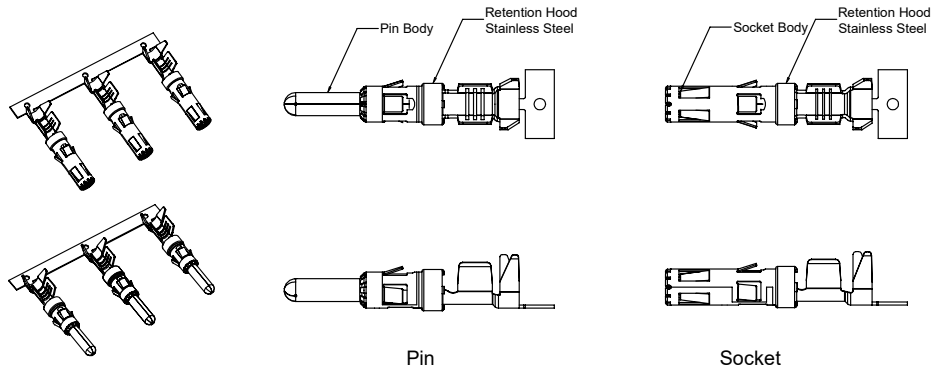
## APC series contact part numbering

### 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 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 <sup>2</sup>			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

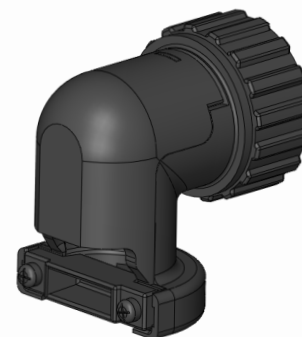
### Strain relief straight

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 Characteristics		
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

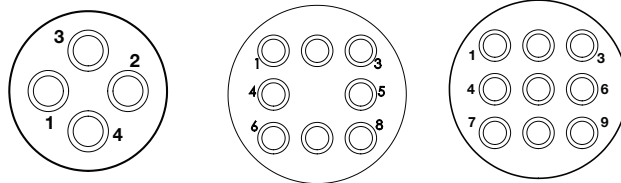
Enviromental	
Waterproof Rating	IP67 (mated)
Operating Temperature	-40°~105°C
Vibration	10-2000 Hz, 4 hours in 3 axis
Mechanical Shock	50G's

Certification	
UL Certification	
CSA Certification	

## Insert availability and identification

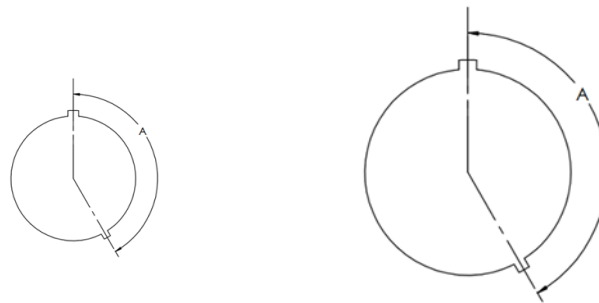
### APC Mini series

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°

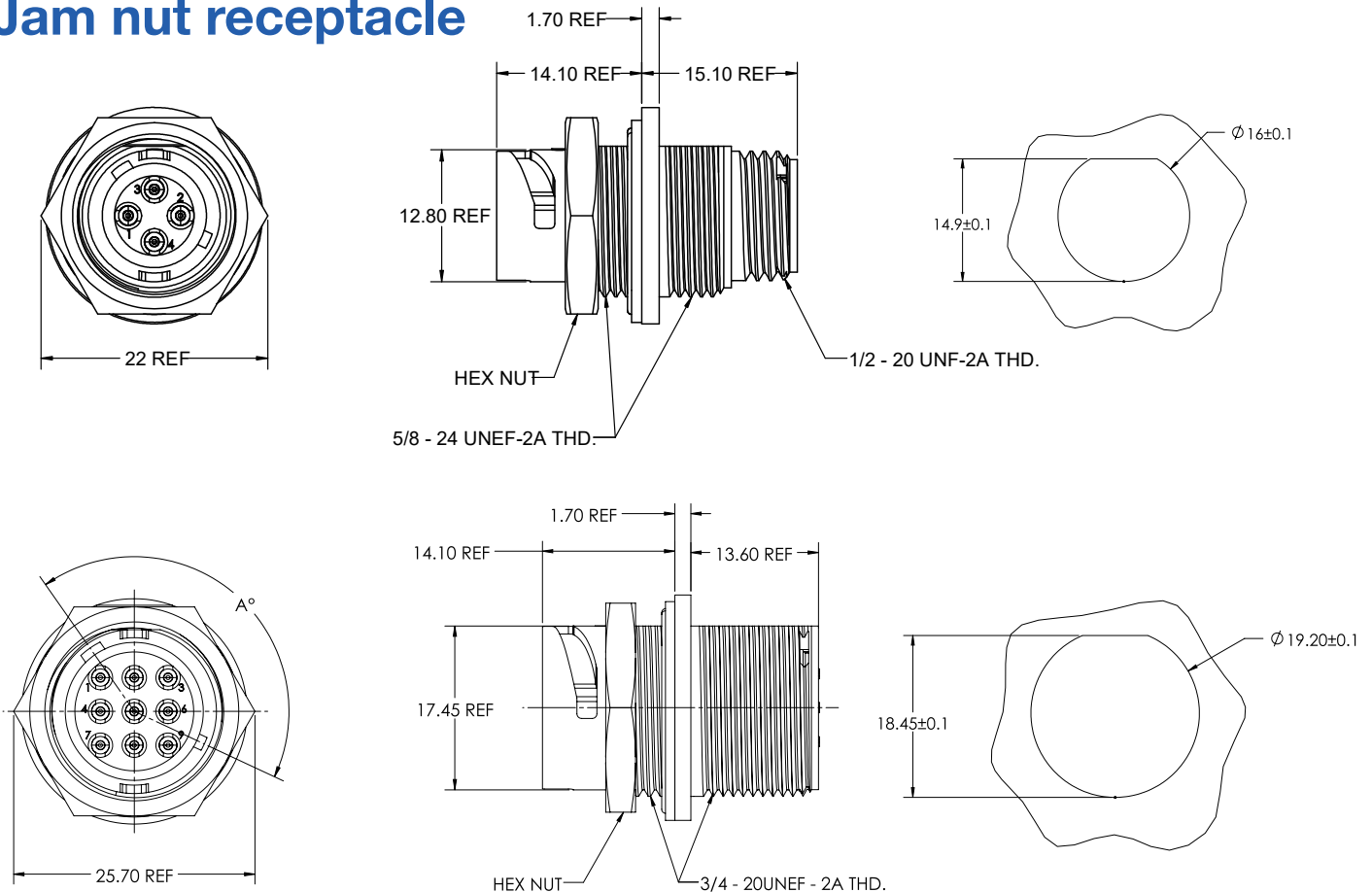
Keyways Code	A
N (Omit)	150°
W	165°
X	180°

## How To Order

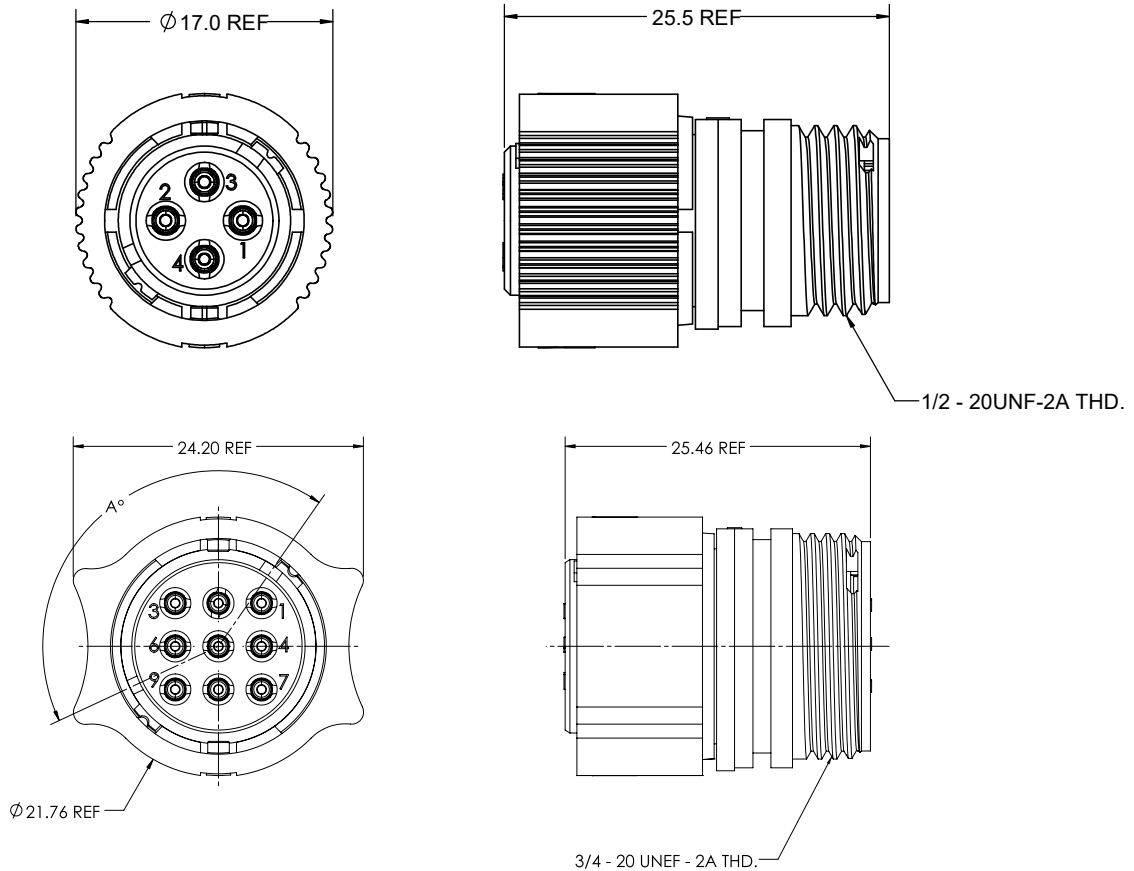
1	2	3	4	5	6	7		
APC	07	8-	4	P	W	0		
Product Series	Shell Style	Shell Size	Insert Arrangement	Contact Gender		Insert Rotation	Shell Color	
06	Plug with grommet seal	8-	4	P	Pin Contact	Omit for standard	Omit	Black
07	Jam nut receptacle	11-	8, 9	S	Socket Contact	W	O	Orange
						X	Contacts ordered separately	

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				
<b>APC</b>	<b>-C</b>	<b>-20</b>	<b>-P</b>	<b>-18</b>	<b>-1</b>	<b>-R</b>				
<b>Product Series</b>	<b>Contact Style</b>	<b>Contact size</b>		<b>Contact Gender</b>		<b>Crimp Range</b>	<b>Plating</b>		<b>Packing</b>	
	<b>-C</b> Crimp	<b>-20</b> Size 20 AWG	<b>-P</b> Pin Contact	<b>-18</b> 18-22 AWG	<b>-1</b> Tin plating	<b>-R</b> Reel				
			<b>-S</b> Socket Contact		<b>-2</b> 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 <sup>2</sup>			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	<b>TOOL-APC-EX-20</b>

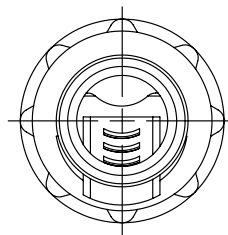
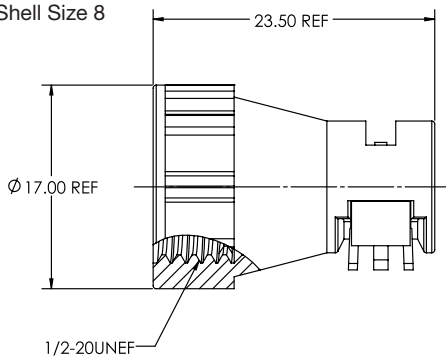


## Accessories

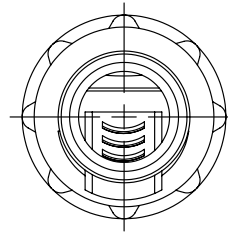
### Strain relief straight

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

Shell Size 8



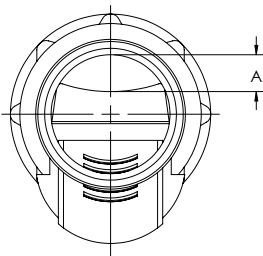
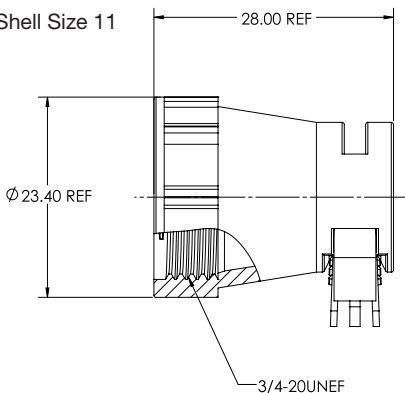
TYPE I



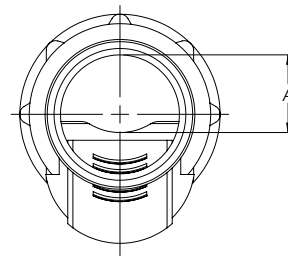
TYPE II



Shell Size 11



TYPE I



TYPE II





**AMPHENOL CORPORATION**

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