

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.

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APC Standard Series

APC Standard 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 TÜV 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	#16	#12	#10	#20
	Amperes	13A	23A	30A	7.5A
Rated Voltage	600V				
Insulation Resistance	500M(Min) @500V DC				

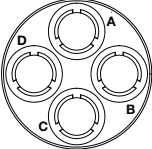

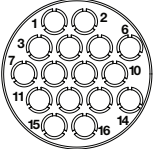
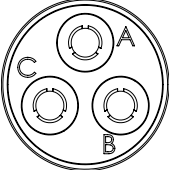
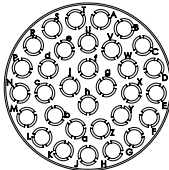
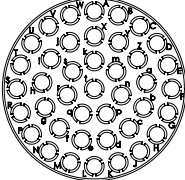
Material and Mechanical	
Components	Material & Plating
Shell	Plastic resin with UL94 V-0
Coupling nut	Plastic resin with UL94 V-0
Contact	Copper alloy with tin, silver or gold plating
Gasket	Silicon rubber
Grommet	Silicon rubber
Sealing O-Ring	Silicon rubber
Mounting insert	Copper alloy with nickel plating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

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

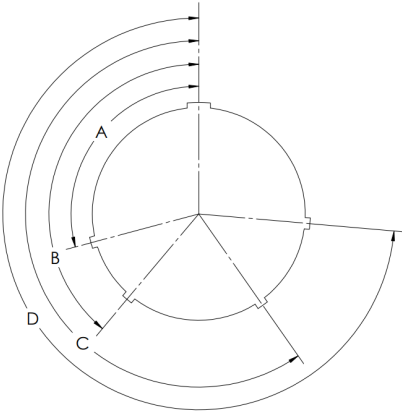


Insert Availability and Identification

Front face of receptacle inserts illustrated

Illustration						
Insert Pattern	18-4	18-11	18-16	20-3	20-32	22-41
Contact Size	10	12	16	12	20	20
Contact Quantity	4	5	16	3	32	41
Voltage Rating	600	600	600	2000	250	250
Dielectric withstanding voltage	2500	2500	2500	5000	1500	1500

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°

Ordering Information

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 (receptacles only)	Omit for standard	Omit	Black
	03	Rear panel mount receptacle with thread on mounting holes	20-	3, 32	S	Socket Contact (plugs only)	W	O	Orange
	01	Inline receptacle with grommet seal	22-	41			X		
	06	Plug with grommet seal					Y		
	07	Jam nut receptacle					Z		

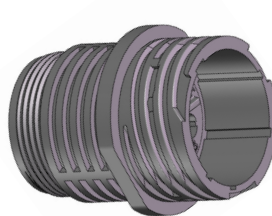
Ordering Note: Contacts ordered separately. All receptacles are pin contact only. All plugs are socket contact only. The only exception is the 20-3 insert arrangement, contact factory for details.



00 Panel front mount receptacle



03 Panel rear mount receptacle



01 Cable Mount Receptacle

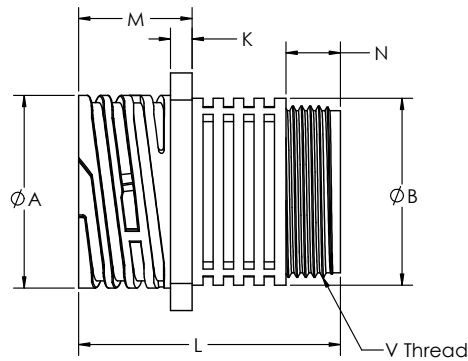
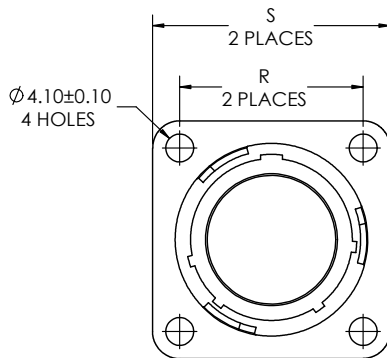


06 Cable Plug



07 Jam nut receptacle

Square Flange Receptacle (APC03)



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

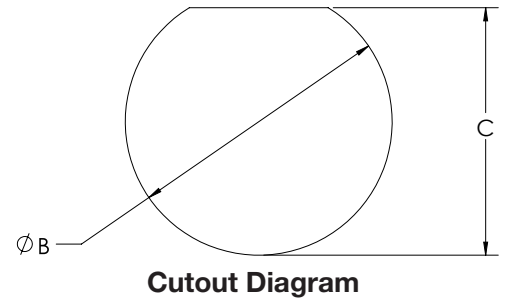
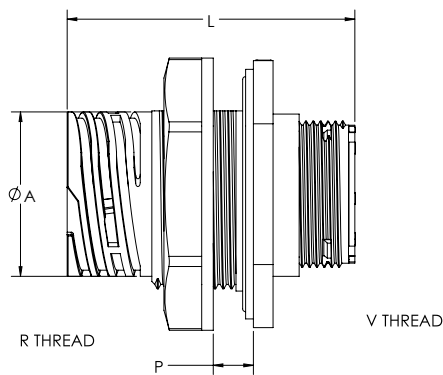
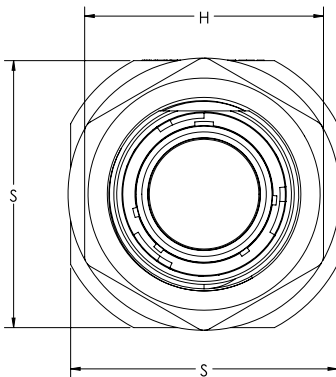
Housing: Nylon, UL94 V-0

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

Related Product Data

M3 screw torque: 0.4-0.7N.m

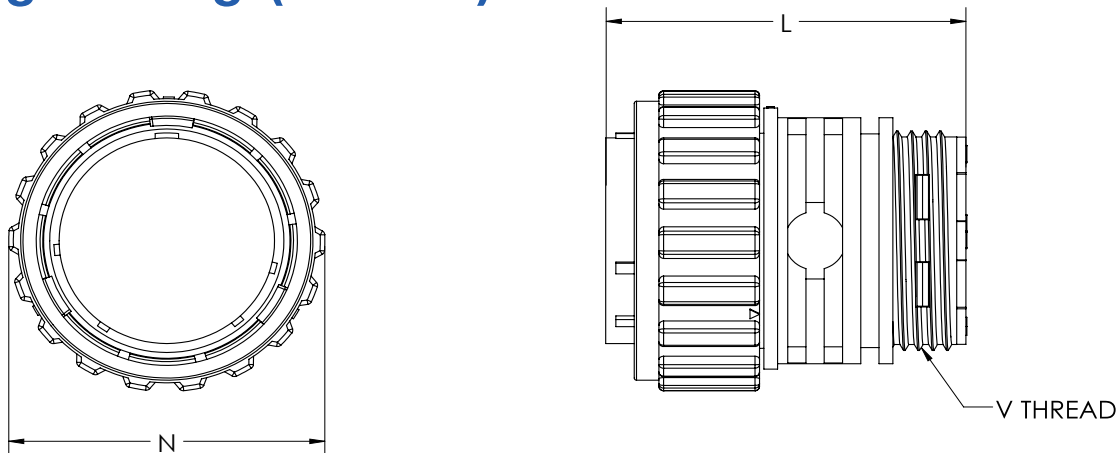
Jam Nut Receptacle (APC07)



Shell Size	S ±0.25	H ±0.25 Hex Nut	A ±0.25	R Thread Class 2A	L Ref.	P Max Panel Thickness	V Thread CLASS 2A	B ±0.10	C ±0.10
18	46	41.15	28.32	1.3125-18 UNEF	49.56	7	1.0000-20 UNEF	33.6	31.15
20	49.1	44.3	31.82	1.4375-18 UNEF	46.68	7	1.1875-18 UNEF	36.8	34.5
22	50.8	46	34.38	1.5000-18 UNEF	46.68	7	1.3125-18 UNEF	38.35	36.53

All dimensions are in mm

Straight Plug (APC06)



Shell Size	N ±0.25	L ±0.25	V Thread Class 2A
18	34.88	38.5	1 - 20 UNEF
20-3	39.58	42.3	1.1875-18UNEF
20-32	39.58	33.5	1.1875-18UNEF
22-41	42.12	33.5	1.3125-18UNEF

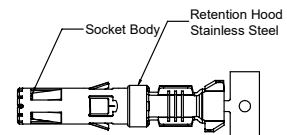
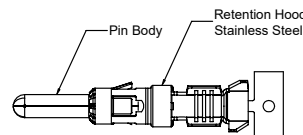
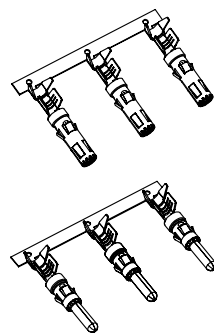
APC Series Contacts - Ordering Information

Material

Contact body: Cooper alloy

Retaining spring: Stainless steel

Surface coating: See below table



Pin

Socket

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	

Ordering Information - continued

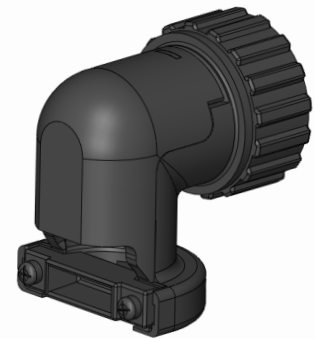
Size	Current (A)	Wire Size Range		Ins. Dia. Range	Contact Finish	Part Number		PCS / Reel
		AWG	mm ²			Pin	Socket	
10	30	10-12	3.3-5.2	4.0-4.6	Tin Plating	APC-C-10-P-10-1-R	APC-C-10-S-10-1-R	1500
					100u" Silver Plating	APC-C-10-P-10-6-R	APC-C-10-S-10-6-R	
12	23	12-14	2-3.3	3.2-3.8	Tin Plating	APC-C-12-P-12-1-R	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	

Strain relief 90°

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

Extraction tool

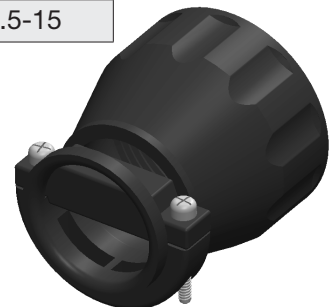
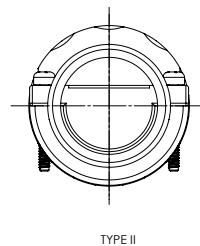
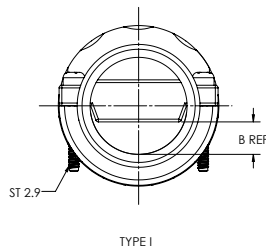
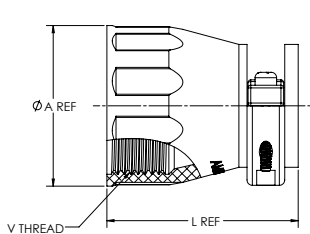
Shell Size	Order part number
16	TOOL-APC-EX-16
12	TOOL-APC-EX-12
10	TOOL-APC-EX-10



Accessories

Strain relief straight

Shell Size	Order part number	A Ref	V Thread Class 2B	L Ref.	B Cable range for reference (unit: mm)	
					Type I	Type II
18	APC-SR-18-180	29.8	1.0000-20 UNEF	35.5	6-13	0.5-14
20	APC-SR-20-180	34.56	1.1875-18 UNEF	38	7-14	0.5-15



APC Mini Series Upgraded

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 TÜV 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	Silicon rubber
Grommet	Silicon rubber
Sealing O-Ring	Silicon rubber
Mounting insert	Copper alloy with nickel plating
Durability	500 cycles
Contact termination	Crimp

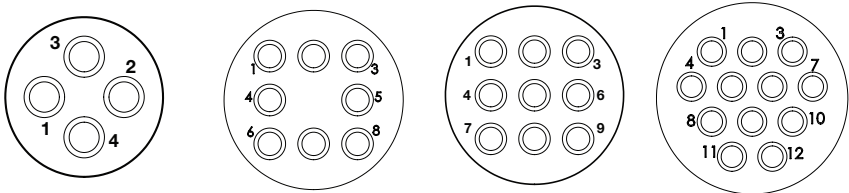
Environmental	
Waterproof Rating	IP67 (mated)
Operating Temperature	-40°~105°C
Vibration	10-2000 Hz, 4 hours in 3 axis
Mechanical Shock	50G's



Insert Availability and Identification

APC Mini Series

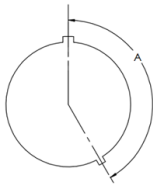
Front face of pin inserts illustrated



Insert Pattern	8-4	11-8	11-9	12-12
Contact Size	20	20	20	20
Contact Quantity	4	8	9	12
Voltage Rating	250	250	250	250
Dielectric withstanding voltage	1500	1500	1500	1500

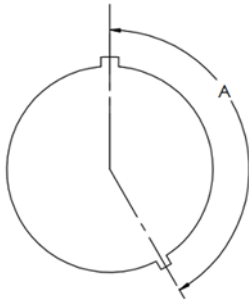
Alternate Insert Positioning

Size 8



Keyways Code	A
N (Omit)	150°
W	170°

Sizes 11 & 12



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

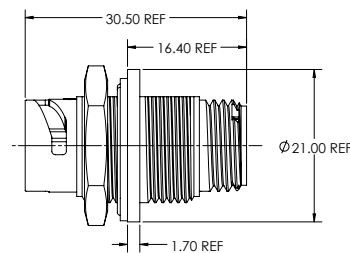
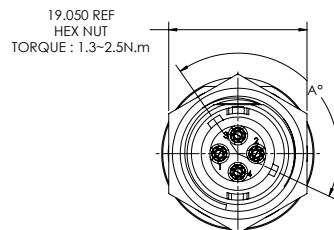
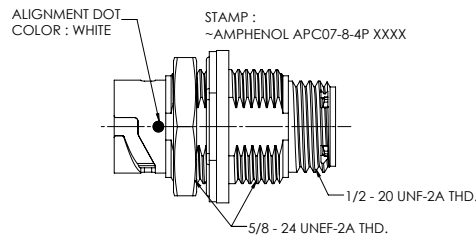
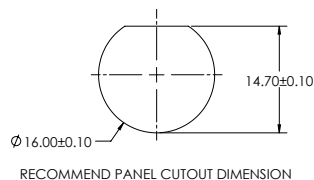
Ordering Information

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 <small>(receptacles only)</small>	Omit for standard	Omit	Black
	07	Jam nut receptacle	11-	8, 9	S	Socket Contact <small>(plugs only)</small>	W	O	Orange
			12-	12			X	Contacts ordered separately	

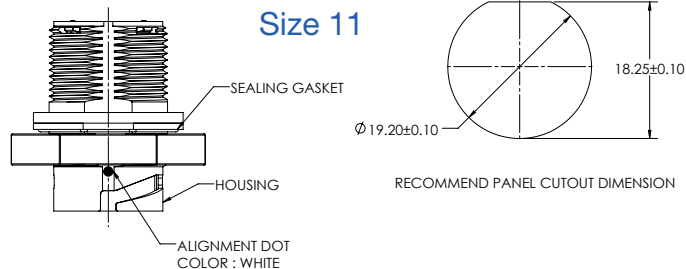
Note: 1. The torque to install the hex nut is 1.0-2.0N.m
2. Wall thickness is required 2.2-3.15mm

Jam Nut Receptacle (APC07)

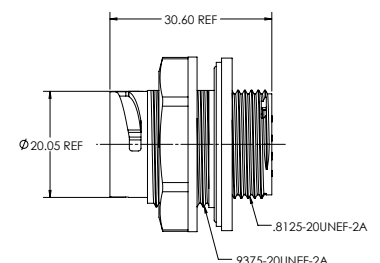
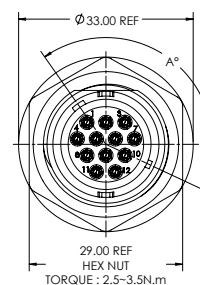
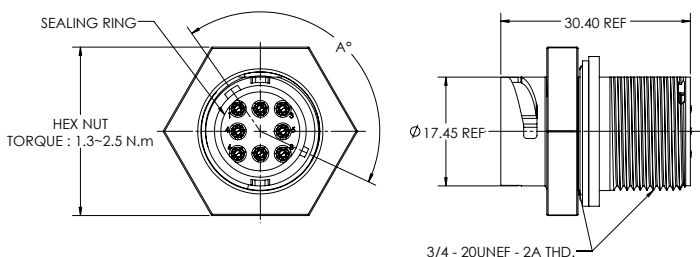
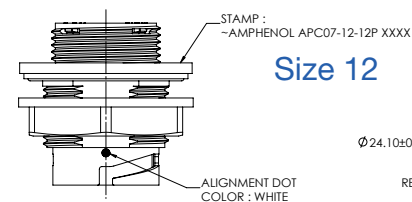
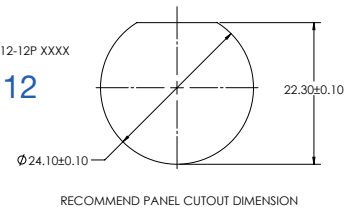
Size 8



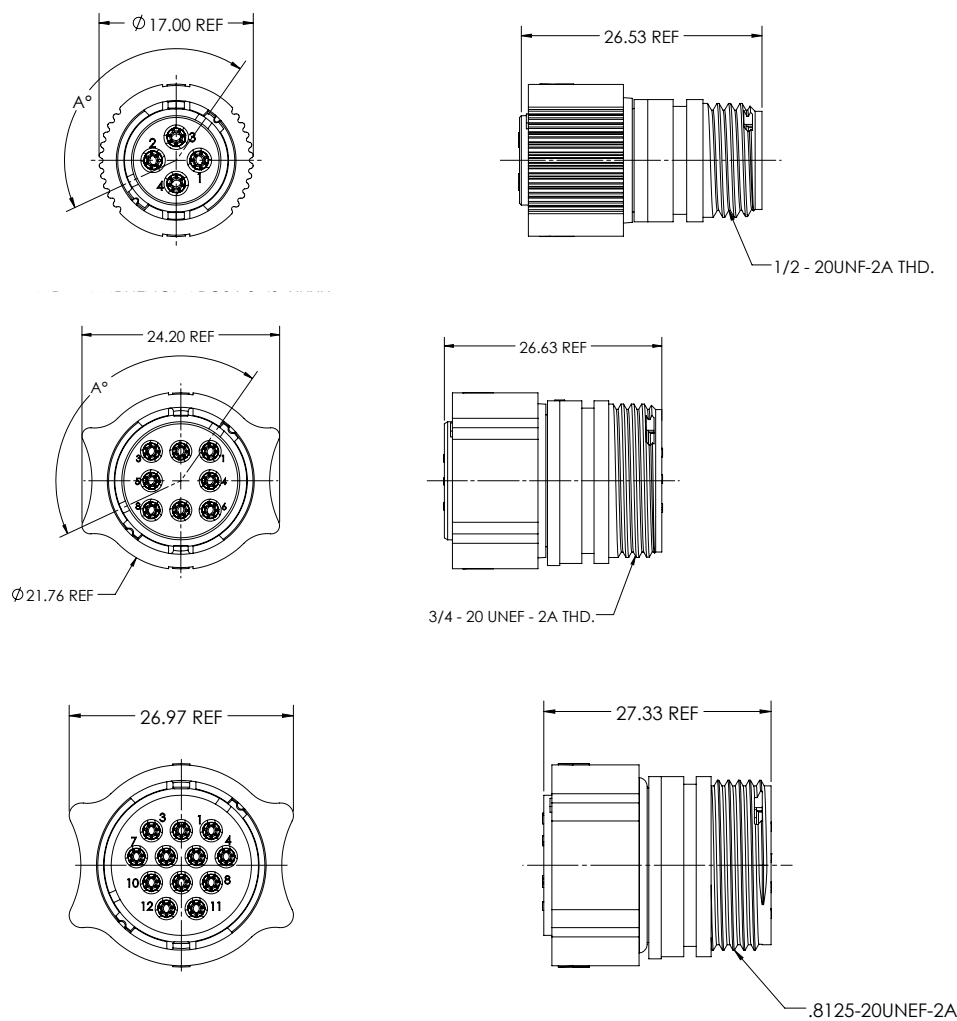
Size 11



Size 12



Straight Plug (APC06)



APC Mini Series Contacts - Ordering Information

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	-20	20-22 AWG	-2	Gold on functional area, Tin on other area		

Material

Contact body: Cooper alloy

Surface plating: see below table

Ordering Information - continued

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	
20	7.5	20-22	0.3 - 0.8	1.5 - 2.1	Tin Plating	APC-C-20-P-20-1-R	APC-C-20-S-20-1-R	
					Gold on functional area, Tin on other area	APC-C-20-P-20-2-R	APC-C-20-S-20-2-R	

Extraction tool

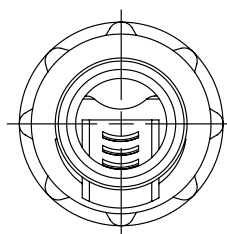
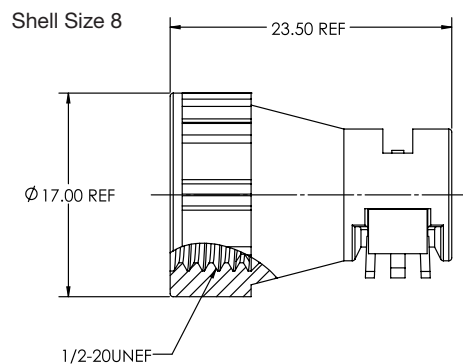
Shell Size	Order part number
20	TOOL-APC-EX-20



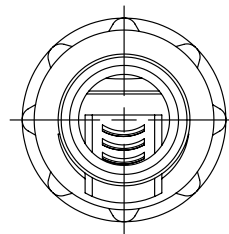
Accessories

Strain relief straight

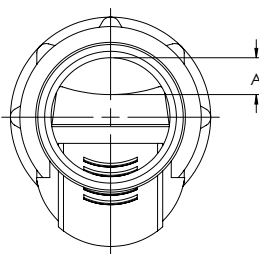
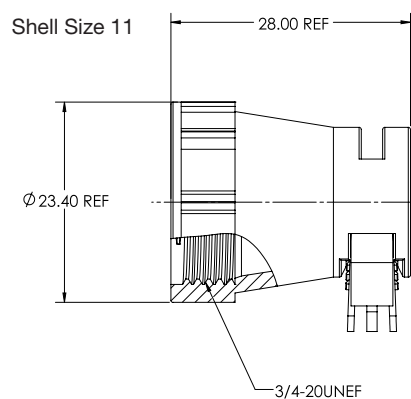
Shell Size	Order part number	Cable range for REFERENCE (Unit:mm)	
		Type I	Type II
8	APC-SR-8-180	2.59-4.9	0.43-2.8
11	APC-SR-11-180	5.75-10.2	0.94-5.4
12	APC-SR-12-180	5.75-10.2	0.94-5.4



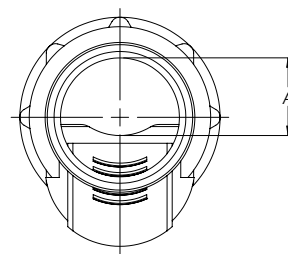
TYPE I



TYPE II



TYPE I



TYPE II



APC Power Series

APC Power 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 TÜV 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	#8 RADSOK®	#4 RADSOK
	Amperes	70A	100A
Rated Voltage	1000V		650V
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	Silicon rubber
Grommet	Silicon rubber
Sealing O-Ring	Silicon rubber
Mounting insert	Copper alloy with nickel plating
Durability	500 cycles
Contact termination	Crimp

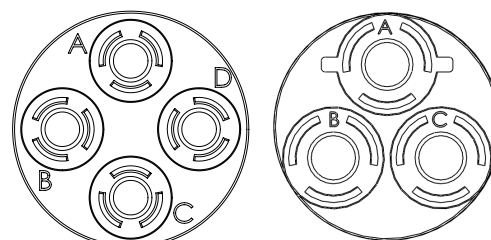
Environmental	
Waterproof Rating	IP67
Operating Temperature	-40°~105°C
Vibration	10-2000 Hz, 4 hours in 3 axis
Mechanical Shock	50G's



Insert Availability and Identification

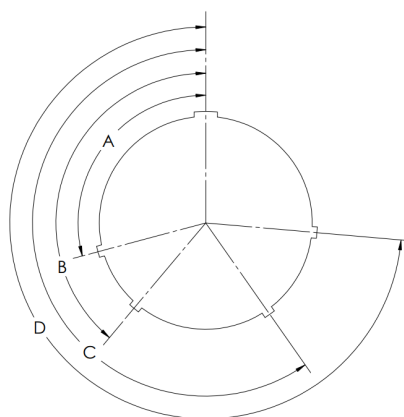
Front face of receptacle insert illustrated

Illustration



Insert Pattern	24-4	24-3
Contact Size	8	4
Contact Quantity	4	3
Voltage Rating	1000	650
Dielectric withstanding voltage	3000	3000

Alternate Insert Positioning

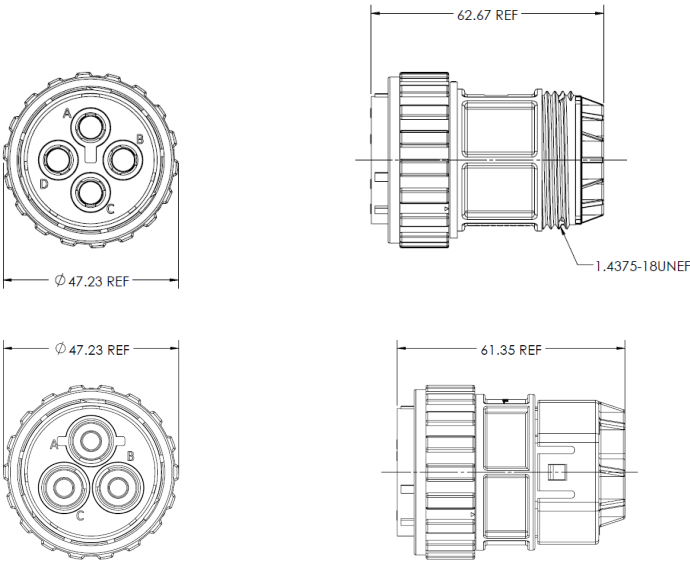


Keyways Code	A	B	C	D
Standard (Omit)	105°	140°	215°	265°
W	60°	140°	225°	265°
X	75°	140°	200°	265°
Y	90°	140°	185°	265°
Z	115°	140°	170°	265°

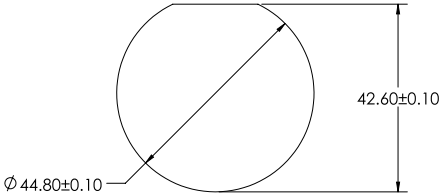
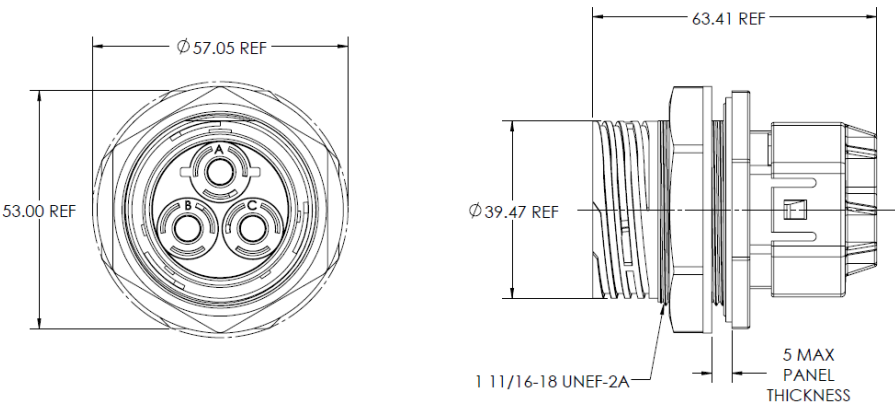
Ordering Information

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	24-	4	P	Pin Contact (receptacles only)	Omit for standard	Omit	Black
	07	Jam nut receptacle		3	S	Socket Contact (plugs only)	W	O	Orange

Straight Plug (APC06)



Jam Nut Receptacle (APC07)



APC Power Series Contacts - Ordering Information

1		2		3		4		5		6	
PRB		-C		-8		-P		-8		-1	
Contact Series		Contact Type		Contact Size		Contact Gender		Wire size		Plating	
PRB	Crimp	C	Crimp	8	8 AWG	P	Male Pin	8	8mm ²	1	Silver
						S	Female Socket	10	10mm ²	D	Gold 30μ
								16	16mm ²		

Material

Contact body: Cooper alloy

Surface coating: See above table

Extraction tool

Shell Size	Order part number
8	TOOL-APC-EX-8





AMPHENOL CORPORATION
Amphenol Industrial Operations

Phone: 888-364-9011
20 Valley Street
Endicott, NY 13760-3600
www.amphenol-industrial.com