

## SSMA/SSMB/SSMC

*R121/R203/R202*



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*Section 12 Table of Contents***SSMA**

Introduction.....	12-4
Characteristics .....	12-4
Plugs.....	12-5
Receptacles.....	12-6
In Series Adapters.....	12-6

**SSMB**

Interface.....	12-7
Characteristics .....	12-7
Plugs and Jacks .....	12-8 to 12-9
Receptacles.....	12-9 to 12-11
In Series Adapters.....	12-11
Panel Drilling .....	12-15

**SSMC**

Introduction.....	12-12
Characteristics .....	12-12
Plugs and Jacks.....	12-13 to 12-14
Receptacles.....	12-14
In Series Adapters.....	12-14
Panel Drilling .....	12-15



SSMA



<b>50Ω</b>	<b>DC - 18 GHz</b>
DC-34 GHz possible	

### INTRODUCTION

#### GENERAL

- Miniature coaxial connectors
- Screw-on coupling
- High RF performance
- Reduced weight and size

#### APPLICATIONS

- Military aeronautics
- Missiles
- Detection - countermeasures

#### APPLICABLE STANDARDS

- CECC 22 160
- MIL-STD-348 fig.319

#### SPACE QUALIFIED APPROVAL

- SCC 3402 (ESA)

Introduced in the 1960s, the SSMA series of connectors are of identical construction to the classic SSMA series but offer the benefit of reduced dimensions. They are recommended for use on equipment having limited component space availability combined with frequency requirements up to 34 GHz. Today, SSMA is mostly used for maintenance of existing equipment. For new projects, we advise using SMP or SMP-LOCK™ connectors.

### CHARACTERISTICS

TEST / CHARACTERISTICS	VALUES / REMARKS
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#### ELECTRICAL CHARACTERISTICS

<b>Impedance</b>	50Ω	
<b>Frequency Range</b>	DC - 18 GHz	
<b>VSWR</b>	.085" / RG405 Semi-Rigid Cable: 1.07 + 0.01 F (GHz)	
<b>Insertion Loss (typ.) dB</b>	0.04 √F (GHz)	
<b>RF Leakage (min) dB</b>	-90 + F (GHz)	
<b>Insulation Resistance</b>	> 1000 MΩ	
<b>Contact Resistance</b>	Center Contact: 5mΩ max. / Outer Contact: 2.5mΩ max.	
<b>Voltage in VRMS</b> • At Sea Level • At 70,000 ft	Dielectric Withstanding Voltage > 750 V. 150 V.	Working Voltage < 250 V. 65 V.

#### MECHANICAL CHARACTERISTICS

<b>Durability</b>	> 500 Cycles
<b>Force to Engage / Disengage</b>	Torque 12 N.com (2 inch-pounds)
<b>Recommended Coupling not Torque</b>	60 to 80 N.com (5.3 to 7.1 inch-pounds)
<b>Cable Retention Force</b>	.085: / RG405 Cable > 136 N (30lbf)
<b>Center Contact Retention Force</b>	22N (5lbf) min.

#### ENVIRONMENTAL CHARACTERISTICS

<b>Temperature Range</b> • Standard Models • Semi-Rigid Cables	- 55 °C / +155 °C - 55 °C / +105 °C
<b>Thermal Cycling</b>	MIL-STD-202, Method 102, Condition D
<b>Vibration</b>	MIL-STD-202, Method 204, Condition A, 10g
<b>Shock</b>	MIL-STD-202, Method 213, Condition A, 50g
<b>Moisture Resistance</b>	MIL-STD-202, Method 106
<b>Corrosion</b>	MIL-STD-202, Method 101, Condition B

#### MATERIALS AND PLATING

	Material	Plating
<b>Body/Nut</b>	Stainless Steel / Brass	Gold or Passivated / BBR
<b>Center Contacts</b>	Brass (Male) / Beryllium Copper (Female)	Gold over Nickel
<b>Gaskets</b>	Silicone Rubber	-
<b>Insulators</b>	PTFE	-



SSMA

## PLUGS

### PLUGS FOR SEMI-RIGID CABLES, SOLDER TYPE

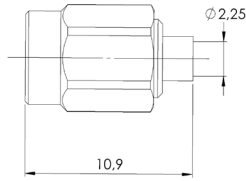


FIG. 1

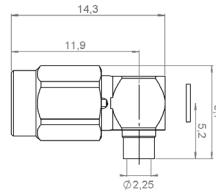


FIG. 2

CABLE GROUP	CABLE GROUP DIA.	PART NUMBER (GOLD)	FIG.	CAPTIVE CENTER CONTACT	NOTE
RG405	.085"	R121 053 000	1	Yes	Straight
		R121 153 000	2		Right Angle

### PLUGS FOR FLEXIBLE CABLE, CRIMP TYPE

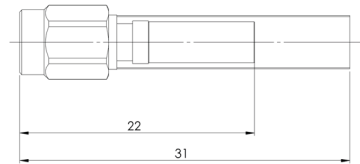


FIG. 1

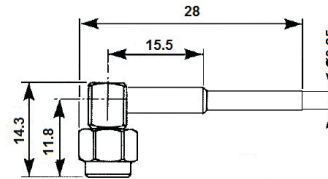


FIG. 2

CABLE GROUP	CABLE GROUP DIA.	PART NUMBER (GOLD)	FIG.	CAPTIVE CENTER CONTACT	NOTE
RG174 / RG316	2.6/50/S	R121 072 000	1	Yes	Straight - Heatshrink Sleeve
		R121 172 000	2		Right Angle - Heatshrink Sleeve
		9765-9523-003			Right Angle



SSMA

## RECEPTACLES AND ADAPTERS

### EXTENDED DIELECTRIC FEMALE RECEPTACLE

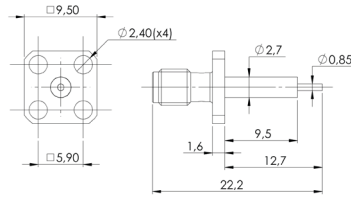
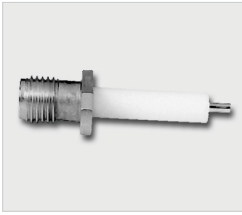


FIG. 1

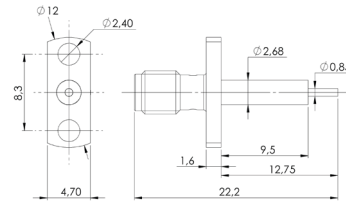
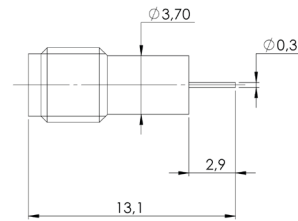
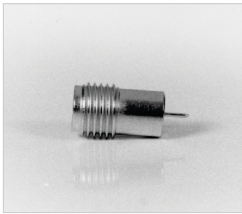


FIG. 2

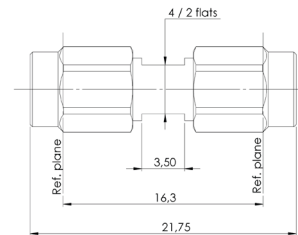
PART NUMBER (GOLD)	FIG.	CAPTIVE CENTER CONTACT	PANEL DRILLING	NOTE
R121 414 000	1	Yes (Epoxy)	NEW	Square Flange
R121 464 000	2			Narrow Flange

### HERMETIC FEMALE RECEPTACLE



PART NUMBER (GOLD)	CAPTIVE CENTER CONTACT	CONTACT TYPE	NOTE
R121 630 003	Yes	Cylindrical	Solder in Type

### IN SERIES ADAPTERS



PART NUMBER (GOLD)	PART NUMBER (PASSIVATED)	CAPTIVE CENTER CONTACT	FINISH	NOTE
R121 703 000	-	Yes	Nickel	Male - Male Adapter
-	R121 705 001		Gold	Female - Female Adapter



SSMB



**INTRODUCTION**

**GENERAL**

- DC - 12 GHz
- Impedance 50Ω
- Snap-on coupling
- Micro-miniature connectors
- Very low weight and size

**APPLICATIONS**

- Civil and military telecommunications
- Video equipment

**APPLICABLE STANDARDS**

- MIL-STD-348A
- IEC 169-19
- MIL-PRF-39012

SSMB is a small size version of SMB, developed in 1995.

**CHARACTERISTICS**

TEST / CHARACTERISTICS	VALUES / REMARKS
------------------------	------------------

**GENERAL**

Impedance	50Ω
Frequency Range	DC - 12.4 GHz
Temperature Range	-65 °C to + 165 °C

**ELECTRICAL CHARACTERISTICS**

Insertion Loss in dB	0.3√F (GHz)	
RF Leakage	< -55 dB at 1 GHz	
VSWR	RG 178 Cable: 1.25 + 0.02F (GHz)	
Contact Resistance	Center Contact: 5mΩ max. Outer Contact: 1mΩ max.	
Insulation Resistance	1000MΩ	
Voltage in VRMS • At Sea Level • At 70,000 ft	Dielectric Withstanding Voltage > 500V 100V	Working Voltage < 250V 60V

**MECHANICAL CHARACTERISTICS**

Cable Retention Force	RG 174 : 50 N - RD 316 : 100 N
Mating Endurance	500
Center Contact Retention Force	≥ 8 N
• Force to Engage • Force to Disengage	≤ 27 N ≥ 8 N

**ENVIRONMENTAL CHARACTERISTICS**

Vibration	CEI60 169-19/68-2-6 (10g-10 to 500 Hz)
Shock	MIL-STD-202, Method 213, Condition B, 75g-6ms 1/2 sinus
Corrosion (Salt Mist)	MIL-STD-202, Method 101, Condition B (48h)

**MATERIALS AND PLATING**

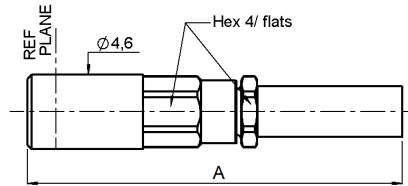
	Material	Plating
Body	Brass	Gold
Contacts	Beryllium Copper	Gold
Insulators	PTFE	-



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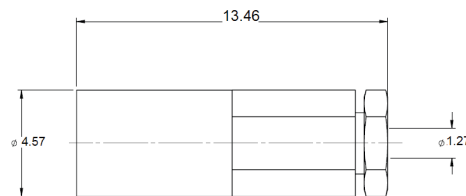
## PLUGS

### STRAIGHT PLUGS CRIMP TYPE, FOR FLEXIBLE CABLES



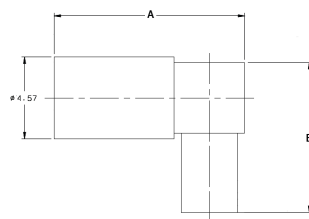
CABLE GROUP	CABLE GROUP DIA.	PART NUMBER	DIMENSIONS A (MM)	CAPTIVE CENTER CONTACT	FINISH
RG178 / RG196	2/50/S	7202-1572-002	17.8	Yes	Gold
RG174 / RG316 / RG179	2.6/50/S	7202-1572-003			
RD316	2.6/50/D	7202-1572-019			
RG178 / RG196	2/50/S	R203 073 000	23.3		
RG174 / RG316	2.6/50/S	R203 075 000			

### STRAIGHT PLUGS, SOLDER TYPE, FOR SEMI-RIGID CABLES



CABLE GROUP	CABLE GROUP DIA.	PART NUMBER	CAPTIVE CENTER CONTACT	FINISH
RG405	.085"	7202-1542-010	Yes	Gold
M17 / 151	.047"	7202-1542-011		

### RIGHT ANGLE PLUGS, CRIMP TYPE, FOR FLEXIBLE CABLES



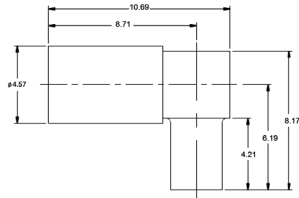
CABLE GROUP	CABLE GROUP DIA.	PART NUMBER	DIMENSIONS (MM)		CAPTIVE CENTER CONTACT	FINISH	NOTE		
			A	B					
RG178 / RG196	2/50/S	7405-1521-002	10.7	8.4	Yes	Gold	-		
RG174 / RG316	2.6/50/S	7405-1521-003					-		
RD178	2/50/D	7405-1521-005					-		
RD316	2.6/50/D	7405-1521-019					-		
RG178 / RG196	2/50/S	7405-2521-002	18.1	12.2		Gold + Nickel	-		
		R203 173 000					10.7	9.4	Heatshrink Sleeve
		R203 173 080					10.7	9.4	Low Profile
RG316	2.6/50+75	R203 175 000	12.2	13.6			Heatshrink Sleeve		



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## PLUGS, JACKS AND RECEPTACLES

### RIGHT ANGLE PLUGS, SOLDER TYPE, FOR SEMI RIGID CABLES



CABLE GROUP	CABLE GROUP DIA.	PART NUMBER	CAPTIVE CENTER CONTACT	FINISH
RG405	.085"	7405-1561-010	Yes	Gold
M17 / 151	.047"	7405-1561-011		

### STRAIGHT AND RIGHT ANGLE BULKHEAD JACKS CRIMP TYPE, FOR FLEXIBLE CABLE

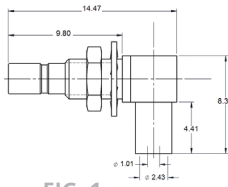
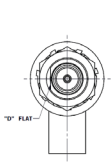


FIG. 1

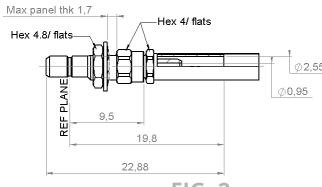
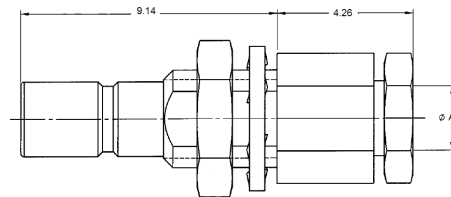


FIG. 2

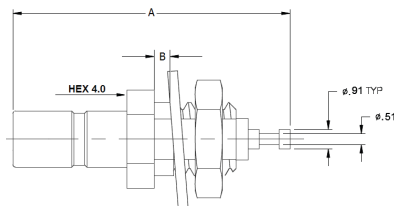
CABLE GROUP	CABLE GROUP DIA.	PART NUMBER	FIG.	CAPTIVE CENTER CONTACT	PANEL DRILLING	FINISH	NOTE
RG178 / RG196	2/50/S	7406-1521-002	1	Yes	P01	Gold	Right Angle Rear Mount
RG174 / RG316	2.6/50/S	7406-1521-003					
RD178	2/50/D	7406-1521-005					
RG178 / RG196	2/50/S	R203 313 000	2				Straight Rear Mount

### STRAIGHT BULKHEAD JACK SOLDER TYPE, FOR SEMI-RIGID CABLE



CABLE GROUP	CABLE GROUP DIA.	PART NUMBER	DIMENSIONS A (MM)	CAPTIVE CENTER CONTACT	PANEL DRILLING	FINISH
RG405	.085"	7203-1541-010	2.26	Yes	P01	Gold
M17 / 151	.045"	7203-1541-011	1.27			

### STRAIGHT BULKHEAD RECEPTACLES (MALE CENTER CONTACT)



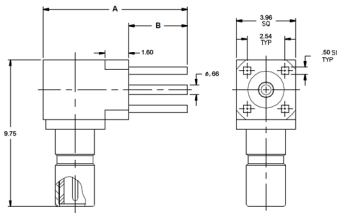
PART NUMBER	CAPTIVE CENTER CONTACT	DIMENSIONS (MM)		PANEL DRILLING	FINISH	NOTE
		A	B			
7204-1511-000	Yes	13.0	2.0	P01	Gold	Rear Mount
7219-1511-000			1.7			Front Mount
R203 553 000						



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## RECEPTACLES

### RIGHT ANGLE PCB BULKHEAD RECEPTACLES (MALE CENTER CONTACT)



PART NUMBER	CAPTIVE CENTER CONTACT	PANEL DRILLING	FINISH	DIMENSIONS (MM)		
				A	B	C
7410-1511-000	Yes	P01	Gold	14.5	12.5	9.8
7410-1511-012			Pretinned			
7410-1511-050			Gold			
7410-1511-040			Pretinned			

### STRAIGHT PCB RECEPTACLES (MALE CENTER CONTACT)

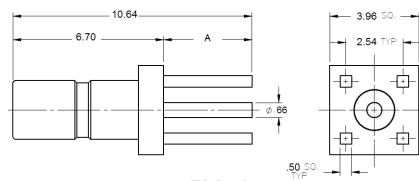


FIG. 1

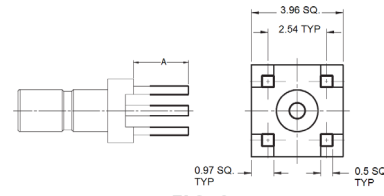


FIG. 2

PART NUMBER	FIG.	CAPTIVE CENTER CONTACT	DIMENSIONS A (MM)	PANEL DRILLING	FINISH	NOTE
7209-1511-000	1	Yes	3.93	P02	Gold	No Stand Off
7209-1511-012			-			Pretinned Legs, No Stand Off
7209-1511-011			-			-
7209-1511-015	2		0.0	-		SMT Version
7209-1511-040			3.43	P02		Pretinned Legs
7209-1511-050			-			-
R203 426 000		3.2	-	Body 3.5		

### STRAIGHT PCB RECEPTACLES (FEMALE CENTER CONTACT)

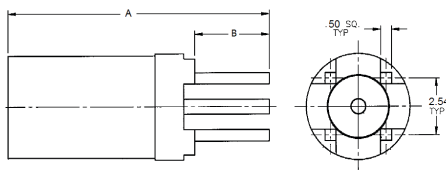


FIG. 1

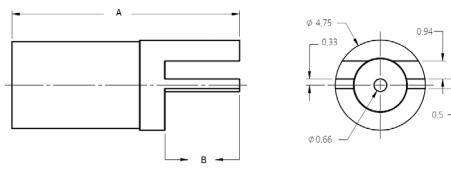


FIG. 2

PART NUMBER	FIG.	CAPTIVE CENTER CONTACT	DIMENSIONS (MM)		PANEL DRILLING	FINISH	NOTE
			A	B			
7225-1512-000	1	Yes	12.0	3.93	P02	Gold	No Stand Off
7225-1512-012			12.0	3.93			Pretinned Legs, No Stand Off
7225-1512-050			12.0	3.43			-
7225-1512-040			12.0	3.43			Pretinned Legs
7225-1512-060	2		12.0	3.93	-		End Launch Version
7225-1512-004	1		8.7	0.0	-		SMT Version



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**RIGHT ANGLE PCB RECEPTACLES (MALE CENTER CONTACT)**

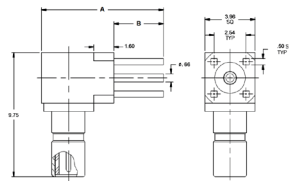
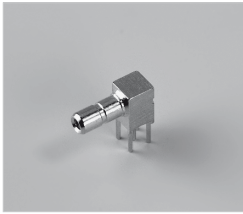


FIG. 1

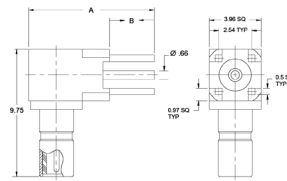
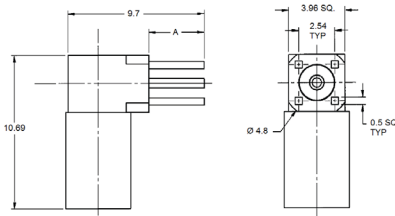


FIG. 2

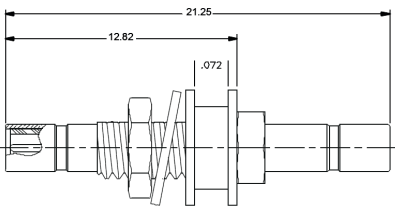
PART NUMBER	FIG.	CAPTIVE CENTER CONTACT	DIMENSIONS (MM)		PANEL DRILLING	FINISH	NOTE
			A	B			
7210-1511-000	1	Yes	9.65	3.93	P02	Gold	No Stand Off
7210-1511-012			6.27	0.0			Pretinned Legs, No Stand Off
7210-1511-015			8.17	2.46	-		SMT Version, No Stand Off
7210-1511-019			9.65	3.42	P02		No Stand Off
7210-1511-040	8.9	3.2	Pretinned Legs				
7210-1511-050			-				
R203 665 000	2					Body 3.5	

**RIGHT ANGLE PCB RECEPTACLES (FEMALE CENTER CONTACT)**



PART NUMBER	CAPTIVE CENTER CONTACT	DIMENSIONS (MM)		PANEL DRILLING	FINISH	NOTE
		A				
7242-1511-000	Yes	3.93		P02	Gold	-
7242-1511-012		3.43				Pretinned Legs
7242-1511-050						Stand Off Legs

**IN SERIES ADAPTERS**



PART NUMBER	CAPTIVE CENTER CONTACT	PANEL DRILLING	FINISH	NOTE
7222-1501-600	Yes	P01	Gold	Bulkhead Male - Male



SSMC

## INTRODUCTION

SSMC connectors are about a third smaller than SMC. They are mainly used in avionics, missiles, and any limited-space applications that require the security of a threaded coupling.

### GENERAL

- DC - 12 GHz
- Impedance 50Ω
- Screw-on coupling
- Micro-miniature connectors
- Very low weight and small size

### APPLICABLE STANDARDS

- MIL STD 348A
- IEC 60169-20
- MIL-PRF-39012

### APPLICATIONS

- Civil avionics
- Military aerospace, missiles

## CHARACTERISTICS

TEST / CHARACTERISTICS	VALUES / REMARKS
------------------------	------------------

### GENERAL

Impedance	50Ω
Frequency Range	DC - 12.4 GHz
Temperature Range	-65 °C to + 165 °C

### ELECTRICAL CHARACTERISTICS

Insertion Loss in dB	0.3√F (GHz)	
RF Leakage	< -55 dB at 1 GHz	
VSWR max up to 4 GHz	RG 178 cable: 1.20 + 0.02F (GHz)	
Contact Resistance (Inner Contact)	Center Contact: 5mΩ max. Outer Contact: 1mΩ max.	
Insulation Resistance	1000MΩ	
Voltage in VRMS • At Sea Level • At 70,000 ft	Dielectric Withstanding Voltage > 500V 100V	Working Voltage < 250V 60V

### MECHANICAL CHARACTERISTICS

Cable Retention Force	RG174: 50N - RG316: 100N
Mating Endurance	500
Center Contact Retention Force	≥ 8 N

### ENVIRONMENTAL CHARACTERISTICS

Vibration	MIL-STD-202, Method 204, Condition D (20g)
Shock	MIL-STD-202, Method 213, Condition B, 75g-6ms 1/2 sinus
Corrosion (Salt Mist)	MIL-STD-202, Method 101, Condition B (48h)

### MATERIALS AND PLATING

	Material	Plating
Body	Brass	Gold
Contacts	Beryllium Copper	Gold
Insulators	PTFE	-



SSMC

## PLUGS

### STRAIGHT PLUGS FOR FLEXIBLE AND SEMI-RIGID CABLES

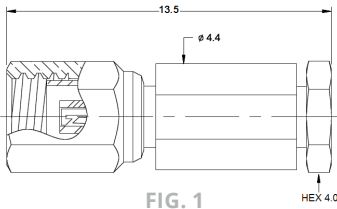


FIG. 1

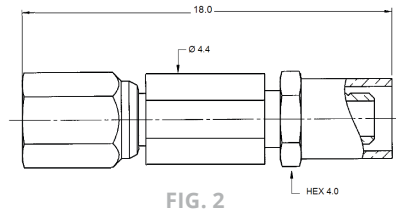
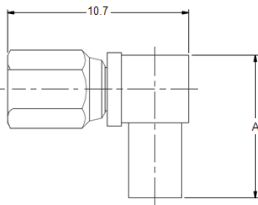


FIG. 2

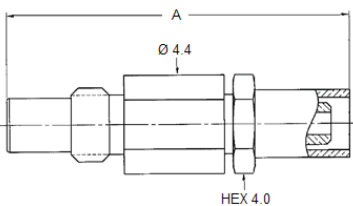
CABLE GROUP	PART NUMBER	FIG.	NOTE	FINISH
RG405	7002-1542-010	1	Solder Type	Gold
M17 / 151	7002-1542-011			
RG178 / RG196	7002-1572-002	2	Crimp Type	
RG174 / RG316	7002-1572-003			
RD316	7002-1572-019			
RG178 / RG196	7002-1571-002			
RG178 / RG196	7002-1571-003			
RD316	7002-1571-019			

### RIGHT ANGLE PLUGS FOR FLEXIBLE AND SEMI-RIGID CABLES



CABLE GROUP	CABLE GROUP DIA.	PART NUMBER	DIMENSIONS (MM)	NOTE
			A	
RG178 / RG196	2/50/S	7105-1521-002	8.4	Crimp Type
RG174 / RG316	2.6/50/S	7105-1521-003		
RD316	2/50/D	7105-1521-019		
RG405	.085"	7105-1561-010	8.2	Solder Type
M17 / 151	.047"	7105-1561-011		

### STRAIGHT JACKS FOR FLEXIBLE AND SEMI-RIGID CABLES



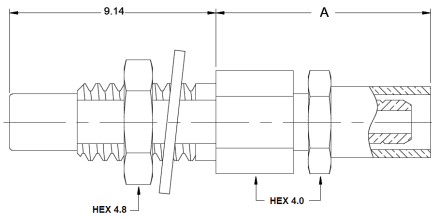
CABLE GROUP	CABLE GROUP DIA.	PART NUMBER	DIMENSIONS (MM)	NOTE
			A	
RG178 / RG196	2/50/S	7101-1571-002	16.0	Crimp Type
RG405	.085"	7101-1541-010	8.8	Solder Type



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## JACKS, RECEPTACLES AND ADAPTERS

### BULKHEAD STRAIGHT AND RIGHT ANGLE JACKS FOR FLEXIBLE AND SEMI-RIGID CABLES



CABLE GROUP	CABLE GROUP DIA.	PART NUMBER	DIMENSIONS A (MM)	PANEL DRILLING	FINISH	NOTE
RG178 / RG196	2/50/S	7003-1572-002	9.7	P01	Gold	Crimp Type
RG174 / RG316	2.6/50/S	7003-1572-003	9.7			Solder Type
M17 / 151	.047"	7003-1542-011	4.8			

### PCB RECEPTACLES

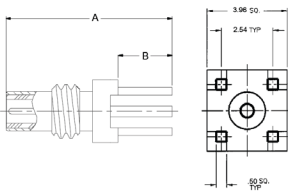


FIG. 1

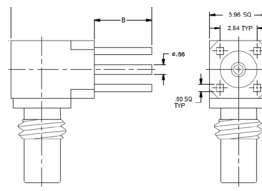


FIG. 2

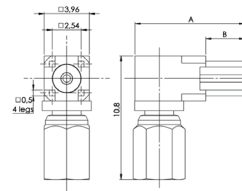
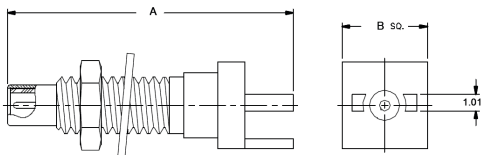


FIG. 3

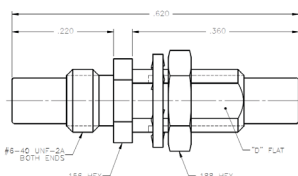
PART NUMBER	FIG.	DIMENSIONS (MM)		PANEL DRILLING	FINISH	NOTE
		A	B			
7009-1511-000	1	10.6	4.0	P02	Gold	No Stand Off
7009-1511-050		10.6	3.42			Stand Off Legs
7009-1511-004		7.34	0			Stand Off Legs, SMT Version
7010-1511-000	2	9.65	4.0	P02	Gold, Pretinned Legs	No Stand Off
7010-1511-041			3.42		Gold	Stand Off Legs
7010-1511-050	3	2	4.0	P02	Gold, Pretinned Legs	Male Center Contact
7042-1511-040	4.0				Gold	No Stand Off, Bulkhead
7110-1511-000	3.42				Gold	Stand Off Legs, Bulkhead

### END LAUNCH BULKHEAD RECEPTACLES



PART NUMBER	DIMENSIONS (MM)		FINISH
	A	B	
7029-1511-031	17.52	5.25	Gold
7029-1513-005	14.85	6.35	
7029-1513-004		3.96	

### IN SERIES ADAPTERS



PART NUMBER	CAPTIVE CENTER CONTACT	PANEL DRILLING	FINISH	NOTE
7122-1502-000	Yes	P01	Gold	Bulkhead Male - Male




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**PANEL DRILLING**

PANEL DRILLING SSMB/SSMC

P01

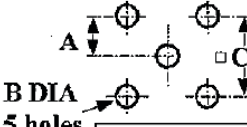
**PANEL CUT OUT**



mm		
	Maxi	mini
<b>A</b>	3.60	3.50
<b>B</b>	3.30	3.20

P02

**PANEL CUT OUT**



mm		
	Maxi	mini
<b>A</b>	1.29	1.25
<b>B</b>	0.85	0.75
<b>C</b>	2.56	2.52



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*Notes*