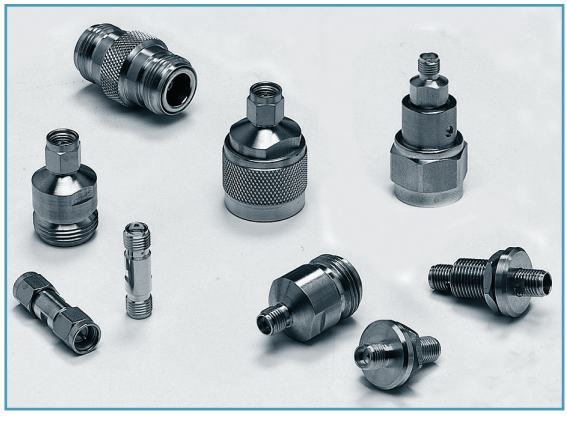
Coaxial Adapters



- High Repeatability & Low SWR
- Rugged Injection Molded Connectors.
- Bulkhead Mounting - Model 1568 conveniently mounts on any panel using a standard D-hole.
- In-Series & Between Series Configurations - Type N or SMA
- Precision Connectors & Rugged Construction

General Information

In this section of the catalog, each product is outlined utilizing individual data sheets containing product features, specifications, and outline drawings. These data sheets are preceded by a quick reference guide to help you select the product(s) that fits your needs. The page number for each product data sheet is given in the quick reference guide.

The superior performance Aeroflex / Weinschel components enjoy is due to our connector design capabilities. Utilizing proprietary design techniques, we offer connectorized devices that are mechanically robust, stable over environmental extremes, and highly reliable. Aeroflex / Weinschel offers a comprehensive line of between-series adapters, blind-mate connectors, and our patented PLANAR CROWN® Connector System.

NOTE: ***EXPRESS*** Shipment available via **www.argosysales.com** or 800-542-4457. Check with distributor for current products and stocking quantities.

Revision Date: 9/30/2012

Precision Adapters...dc-26.5 GHz

MODEL NUMBER	CONNECTOR TYPE	FREQUENCY RANGE	SWR (MAXIMUM)	INSERTION LOSS	REPEATABILITY	Page No.	
♦ F1513 ♦ M1513	N female - N female N male - N male	dc - 18	1.10-1.15*	<0.25	0.020 dB	182	
♦ 1548-13 1548-14 1548-23 ♦ 1548-24	SMA female - N female SMA female - N male SMA male - N female SMA male - N male	dc - 18	1.10	0.43 (maximum) per mated pair	Type N: 0.006-0.010* SMA: 0.010-0.020*	184	
♦ 1568 ♦ 1568-1	SMA (female-female) bulkhead (add -1 to model number for stainless steel)	dc - 26.5	1.15-1.20*	<0.30 - <0.50*	0.010-0.020*	180	
♦ 1587 ♦ 1588 ♦ 1589	SMA female - SMA female SMA male - SMA female SMA male - SMA male	dc - 26.5	1.15-1.20*	<0.30 - <0.50*	0.010-0.020*	181	
♦ 7002-13 ♦ 7002-14 ♦ 7002-23 ♦ 7002-24	SMA female to N female SMA female to N male SMA male to N female SMA male to N male	dc - 18	1.12	<0.40 - <0.50*	0.010-0.020*	183	

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Note: Other models may also be available from Express delivery.

* VARIES WITH FREQUENCY

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Frequently Asked Questions about Adapters Precision Connector Systems...

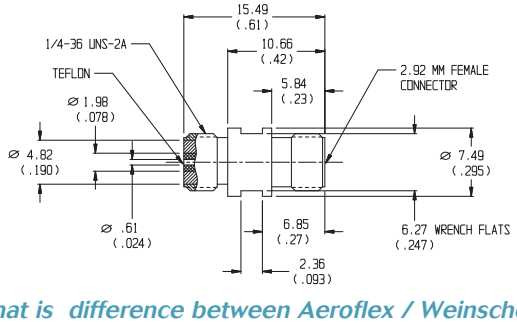
What types of adapters and/or connectors does Aeroflex / Weinschel offer?

Aeroflex / Weinschel offers a wide variety of precision SMA, 2.92mm, Type N, 3.5mm, 2.4mm and male, female, and sexless combinations of adapters from which to choose. Also, Aeroflex / Weinschel manufactures a wide range of Blind-mate Connectors and our own PLANAR CROWN® Connector System. All Aeroflex / Weinschel components are designed and manufactured to obtain low SWR and excellent repeatability over the longest possible operational life. Other features of Aeroflex / Weinschel Adapters and Connectors include:

1. High Repeatability.
2. Quality Connectors - SMA, Type N, 3.5mm, 2.92mm, and 2.4mm.
3. Bulkhead Mounting Available
4. Broad Frequency Range - dc to 40 GHz.

What are Blind-mate Connectors and where would I use them?

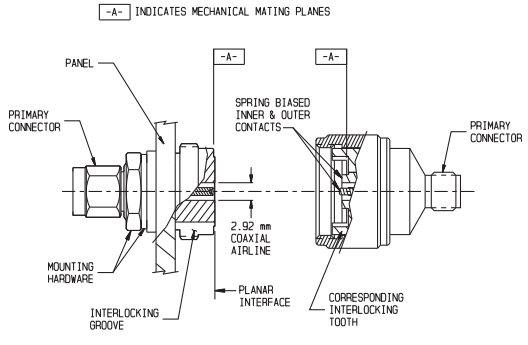
Aeroflex / Weinschel Blind-mate connector series provides threadless connector mating which is useful when mating an array of connectors on one RF module to another array within seconds. Each connector pair will tolerate a radial and axial offset of 0.02 inch and still meet all of its electrical specifications. These connectors simplify RF connections in the most inaccessible regions and high package density systems where conventional threaded connector mating is extremely difficult.



What is difference between Aeroflex / Weinschel precision SMA/ 2.92mm connectors and other SMA connectors?

Typical commercial SMA connectors may have a useful SWR to 18 or 26 GHz; however, most absorb energy between 22 and 25 GHz due to TEM mode conversion. A mated pair could have between 0.5 dB to 2.0 dB insertion loss. A mated pair of Aeroflex / Weinschel Precision Miniature connectors (2.92mm), which mate with SMA type connectors, have a VSWR of less than 1.25 and an insertion loss of less than 0.5 dB to 26 GHz. The new 2.92mm expands this range to 40 GHz.

What is the advantages of using Aeroflex / Weinschel PLANAR CROWN® connectors?.



The Aeroflex / Weinschel PLANAR CROWN® Universal Connector System incorporates design and application features that eliminate the mechanical, electrical and economical drawbacks of standard bulkhead connectors, connector savers, cable connectors and adapters. In one standard design, it has resolved connector related problems faced by users and manufacturers of instruments, cables and components, how to quickly and inexpensive to change connector series or replace damaged front panel connectors on instruments. This system features an operating frequency range of dc to 40 GHz; ability to maintain calibration integrity when changing connector types; and compatibility with all Type N, TNC, GPC-7, SMA, 2.92mm, and 2.4mm connectors used throughout the microwave industry.

What is a Ruggedized SMA Connector?

All Aeroflex / Weinschel SMA connectors labeled as ruggedized have a dielectric insulator at the interface of the connector to provide additional support for the center conductor during connects and disconnects and to keep out foreign material. This provides an important benefit--improved axial alignment of the center contact. This substantially reduces finger breakage of the female contact. Longevity of the Aeroflex / Weinschel SMA connector is enhanced because of the increased shoulder-wall thickness of the male connector shell. Typically, a standard SMA male connector shell has a 0.0065 inch wide shoulder. Compare that to 0.018 inch for the Aeroflex / Weinschel SMA series. The shoulder of most SMA male connectors gradually collapses from use. This causes the center contact to exceed the maximum height tolerance and eventually destroys the mating female contact. This will not happen with a Aeroflex / Weinschel SMA connector.

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Revision Date: 9/30/2012

Model 1568 & 1568-1 dc to 26.5 GHz Precision Coaxial Panel Adapters

Ruggedized SMA Connectors (female to female)

RoHS

Features

- **High Repeatability.**
- **Rugged Injection Molded Connectors.**
- **Bulkhead Mounting** - Conveniently mounts on any panel using a D-hole shown below. Extra heavy construction for long life even with mistreatment makes this adapter suitable for instrument and subsystem front panel applications.

Specifications

NOMINAL IMPEDANCE: 50 Ω

FREQUENCY RANGE: dc to 26.5 GHz

MAXIMUM SWR:

Frequency (GHz)	SWR
dc - 18	1.15
18 - 26.5	1.20

INSERTION LOSS & REPEATABILITY (dB):

Frequency (GHz)	Ins Loss	Repeatability
dc - 12.4	< 0.30	0.01
12.4 - 18	< 0.40	0.02
18.0 to 26.5	< 0.50	0.02

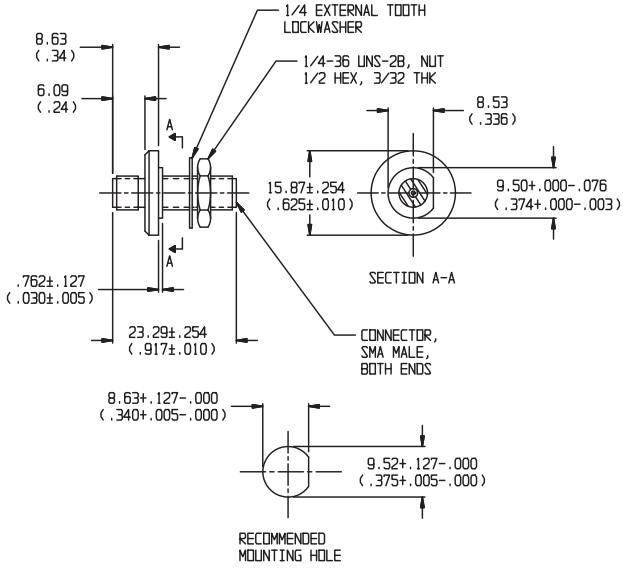
TEMPERATURE RANGE: -55°C to +100°C

CONSTRUCTION: Inner and outer conductors: heat treated beryllium copper, gold plated. Mounting hardware provided (Hex nut and lockwasher) Add -1 to model number for the optional stainless steel body.

CONNECTORS: SMA connectors per MIL-STD-348 interface dimensions - mate nondestructively with MIL-C-39012 connectors.

WEIGHT: 56.7 g (2 oz) maximum

PHYSICAL DIMENSIONS:



NOTE: All dimensions are given in mm (inches) and are maximum, unless otherwise specified.

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Revision Date: 9/30/2012

AEROFLEX WEINSCHEL

Models 1587, 1588 & 1589 Precision Coaxial Adapters

dc to 26.5 GHz

Ruggedized SMA to SMA Connectors

RoHS

Features

- **High Repeatability.**
- **Rugged Injection Molded Connectors.**
- **Designed for Measurement System Use** - Auxiliary wrench flats aid in torquing connections without "chain reaction" loosing of multiple component hookups.

Specifications

NOMINAL IMPEDANCE: 50 Ω

FREQUENCY RANGE: dc to 26.5 GHz

MAXIMUM SWR:

Frequency (GHz)	SWR
dc - 18	1.15
18 - 26.5	1.20

INSERTION LOSS & REPEATABILITY (dB):

Frequency (GHz)	Ins Loss	Repeatability
dc - 12.4	< 0.30	0.01
12.4 - 18	< 0.40	0.02
18 to 26.5	< 0.50	0.02

TEMPERATURE RANGE: -55°C to +100°C

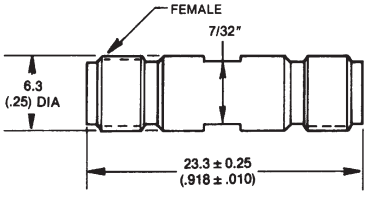
CONSTRUCTION: Inner and outer conductors: heat treated beryllium copper, gold plated.

CONNECTORS: SMA connectors per MIL-STD-348 interface dimensions - mate nondestructively with MIL-C-39012 connectors.

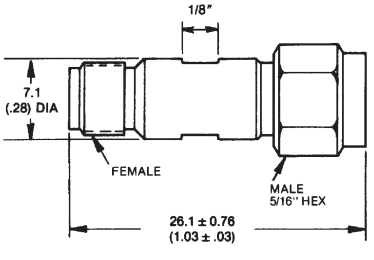
WEIGHT: 56.7 g (2 oz) maximum

PHYSICAL DIMENSIONS:

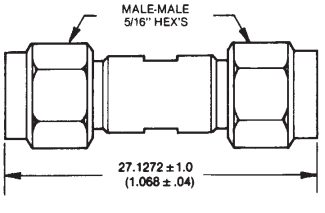
MODEL 1587:



MODEL 1588:



MODEL 1589:



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Revision Date: 9/30/2012

Model 1513
Precision Coaxial Adapter
Type N to Type N

dc to 18.0 GHz

RoHS

Features

- **Low SWR.**
- **High Repeatability.**
- **Stainless Steel Construction.**

Specifications

NOMINAL IMPEDANCE: 50 Ω

FREQUENCY RANGE: dc to 18.0 GHz

MAXIMUM SWR:	
Frequency (GHz)	SWR
dc - 10	1.10
10 - 18	1.15

INSERTION LOSS & REPEATABILITY (dB):		
Frequency (GHz)	Maximum Ins Loss	Repeatability (Typical)
dc - 18	< 0.25	0.02

TEMPERATURE RANGE: -55°C to +85°C

CONSTRUCTION: Stainless Steel body, beryllium copper, gold plated contacts.

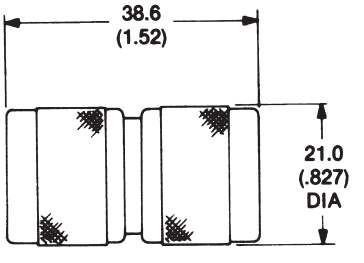
CONNECTORS: Type N per MIL-STD-348 interface dimensions - mate nondestructively with MIL-C-39012 connectors. Select model number as follows:

Model M1513: male to male
Model F1513: female to female

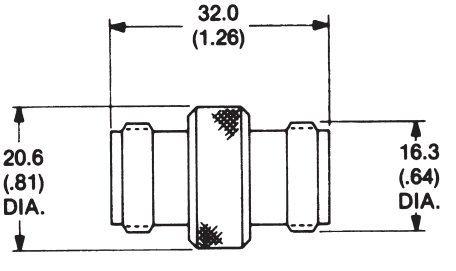
WEIGHT: Model M1513: 50 g (1.7 oz) maximum
Model F1513: 40 g (1.4 oz) maximum

PHYSICAL DIMENSIONS:

MODEL M1513:



MODEL F1513:



NOTE: All dimensions are given in mm (inches) and are maximum, unless otherwise specified.

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Revision Date: 9/30/2012

AEROFLEX WEINSCHEL

Model 7002
High Performance Coaxial Adapter
Ruggedized SMA to Type N Connectors

dc to 18.0 GHz

RoHS

Features

- **High Repeatability**
- **Rugged Injection Molded Connectors**
- **Stainless Steel Construction**

Specifications

NOMINAL IMPEDANCE: 50 Ω

FREQUENCY RANGE: dc to 18.0 GHz

MAXIMUM SWR:	
Frequency (GHz)	SWR (per adapter)
dc - 18	1.12

INSERTION LOSS & REPEATABILITY (dB):		
Frequency (GHz)	Ins Loss*	Repeatability*
dc - 12.4	< 0.40	0.01
12.4 - 18	< 0.50	0.02

*Specification based on mated pair terminated in 50 Ω.

ELECTRICAL LENGTH:

Models 7002-14 & 7002-24: 33mm
Models 7002-13 & 7002-23: 20mm

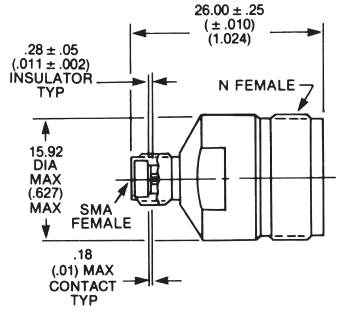
CONSTRUCTION: Gold plated beryllium copper center conductors, injection molded into stainless steel outer bodies.

CONNECTORS: Type N and SMA connectors per MIL-STD-348 interface dimensions - mate nondestructively with MIL-C-39012 connectors.

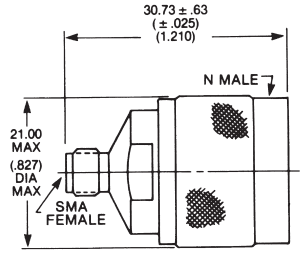
WEIGHT: 30 g (1.1 oz) maximum

PHYSICAL DIMENSIONS:

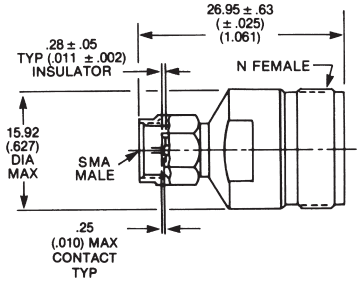
MODEL 7002-13:



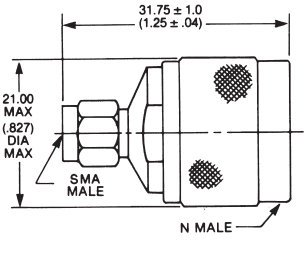
MODEL 7002-14:



MODEL 7002-23:



MODEL 7002-24:



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Revision Date: 9/30/2012

Model 1548
Precision Coaxial Adapter
SMA to Type N Connectors

dc to 18.0 GHz

RoHS

Features

- **High Repeatability**
- **Rugged Construction**
- **Stainless Steel Construction**

Specifications

NOMINAL IMPEDANCE: 50 Ω
FREQUENCY RANGE: dc to 18.0 GHz

MAXIMUM SWR:

Frequency (GHz)	SWR*
dc - 18	1.10

INSERTION LOSS (dB):

Frequency (GHz)	Loss (maximum)*
dc - 18	<0.43

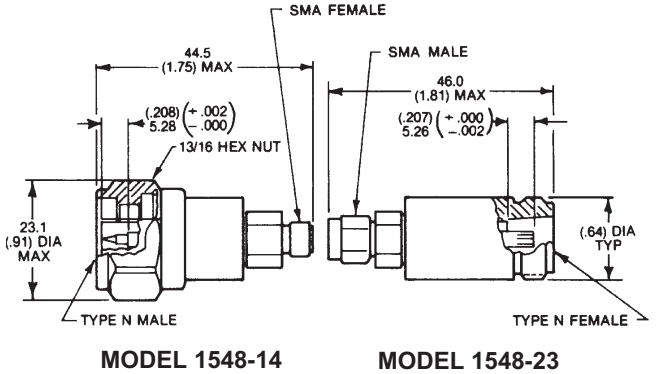
REPEATABILITY (dB):

Frequency (GHz)	Type N	SMA
dc - 12.4	< 0.006	0.01
12.4 - 18	< 0.010	0.02

* Specification based on mated pair terminated in 50 Ω.

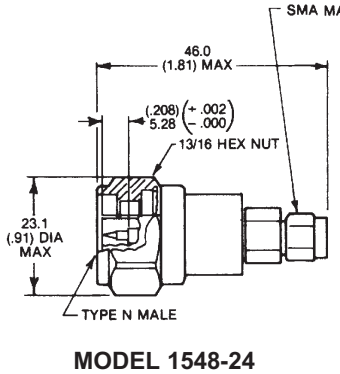
TEMPERATURE RANGE: -55°C to + 85°C
CONSTRUCTION: Stainless steel body and coupling nuts. Gold plated beryllium copper center conductors and SMA bodies, injection molded insulators. Coupling Torque: 14 ± 1 inch pounds for Type N and 8±0.5 inch pounds for SMA.
CONNECTORS: Type N and SMA connectors per MIL-STD-348 interface dimensions - mate nondestructively with MIL-C-39012 connectors.
WEIGHT: 56.7 g (2 oz) maximum connectors only.

PHYSICAL DIMENSIONS:

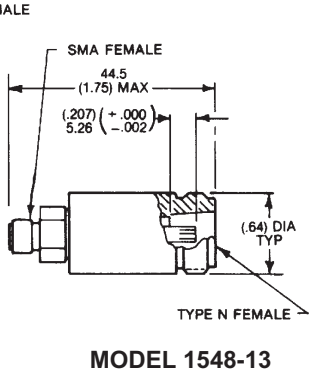


MODEL 1548-14

MODEL 1548-23



MODEL 1548-24



MODEL 1548-13

NOTE: All dimensions are given in mm (inches) and are maximum, unless otherwise specified.

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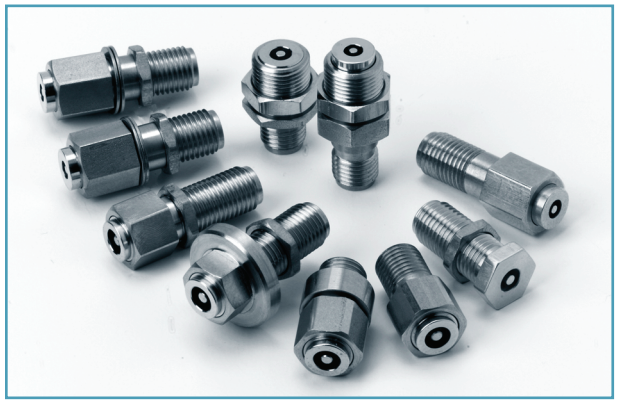
Revision Date: 9/30/2012

Models 7008, 7034, 7035, 7035R & 7041
Planar Blind-Mate® Connectors, dc to 40.0 GHz

Threadless Connector System / Space Saving / L ong Life



Features

- **Threadless Connector Mating -** This blind-mate connector series provides threadless connector mating which is useful when mating an array of connectors on one RF module to another array within seconds.
- **Space Saving -** These connectors can simplify RF connections in the most inaccessible regions and high package density systems where conventional threaded connector mating is extremely difficult.
- **Long Life** - 1,000,000 typical matings. Excellent for ATE applications. Non-piloting spring loaded contact areas provided extremely long life and repeatability.
- **Connector Options -** Choose from many standard Connector options such as SMA per MIL-C-39012, SMK (2.92mm), 2.4mm and SMB.
- **Broad Frequency Range** - Aeroflex / Weinschel offers a wide selection of frequency ranges from dc to 40 GHz including most wireless bands.
- **Blind-Mate Fixed Attenuator, Termination & dc Block Designs -** Blind-mates can be configured on other coaxial products such as Fixed Attenuators, terminations and even dc blocks.
- **Ideal for mass-mount and receiver interface subsystems** where hundreds of high frequency connections need to be made simultaneously**.**
- **New Front & Rear Locking Models** - New designs offer front or rear mounting options.
- **Optimized Designs for RF & Wireless Applications**

Description

Planar Blind-mates connectors are typically used as a pair or set which is comprised of two connector subassemblies that have a common mating interface. Generally, a pair contains one floating blind-mate Interface with spring loaded inner/outer contacts and the other is a fixed blind-mate interface with fixed inner/outer contacts (Figure 1).

The Planar Blind-mate series provides threadless connector mating which is useful when mating an array of connectors on one RF module to another array within seconds. Each connector pair will tolerate typically 0.02 inches per pair radial and axial offset misalignment and still meet all of its electrical specifications.

Most Aeroflex / Weinschel Planar Blind-mates designs conveniently mount on any panel using a standard panel D-hole or most any standardized hole pattern. Extra heavy construction for long life even with mistreatment makes these blind-mate products suitable for panel use.

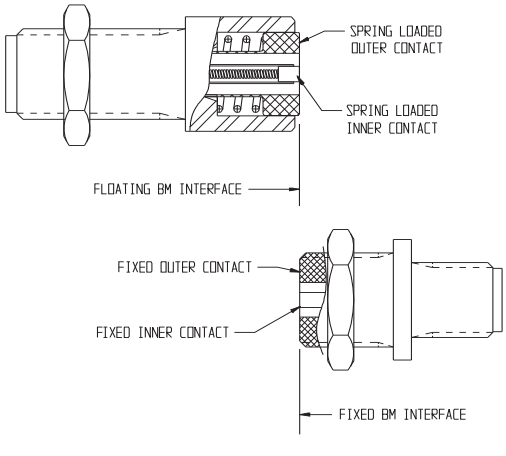


Figure 1. Common Blind-Mate Mating Interface

U.S. Patent Number 6,409,550

EXPRESS Shipment available via 800-542-4457 or **www.argosysales.com**. Check with distributor for current product stocking quantities.

Revision Date: 9/30/2012

Blind-Mate Connectors...dc-40.0 GHz

Model Number	Connector Type	Frequency Range (GHz)	SWR (Maximum)	Loss (Maximum dB)	Page No.	
♦ 7008	Pressurized SMA Female	dc - 40.0	1.30-1.65*	0.3-1.5*	188	
♦ 7034	2.92mm Female, Rear Lock, Floating	dc - 40.0	1.35-1.55*	0.50	189	
♦ 7034-1	2.92mm Female, Rear Lock, Fixed	dc - 40.0	1.35-1.55*	0.85		
♦ 7035	2.92mm Female, Front Locking Hex Nut, Floating	dc - 40.0	1.35-1.55*	0.50	190	
♦ 7035-1	2.92mm Female, Front Locking Hex Nut, Fixed	dc - 40.0	1.35-1.55*	0.85		
7035R	2.92mm Female, Front Locking, Floating, Round Nut	dc - 40.0	1.35-1.55*	0.85		
7035R-1	2.92mm Female, Front Locking, Fixed, Round Nut	dc - 40.0	1.35-1.55*	0.85		
7041	2.92mm Female, Rear Locking, Fixed, Round Nut, Lower Cost	dc - 18.0	1.20-1.40*	0.60	191	

♦ *EXPRESS* Shipment available via **www.argosysales.com** or 800-542-4457.
Note: Other models may also be available from Express delivery.

* VARIES WITH FREQUENCY.

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Revision Date: 9/30/2012

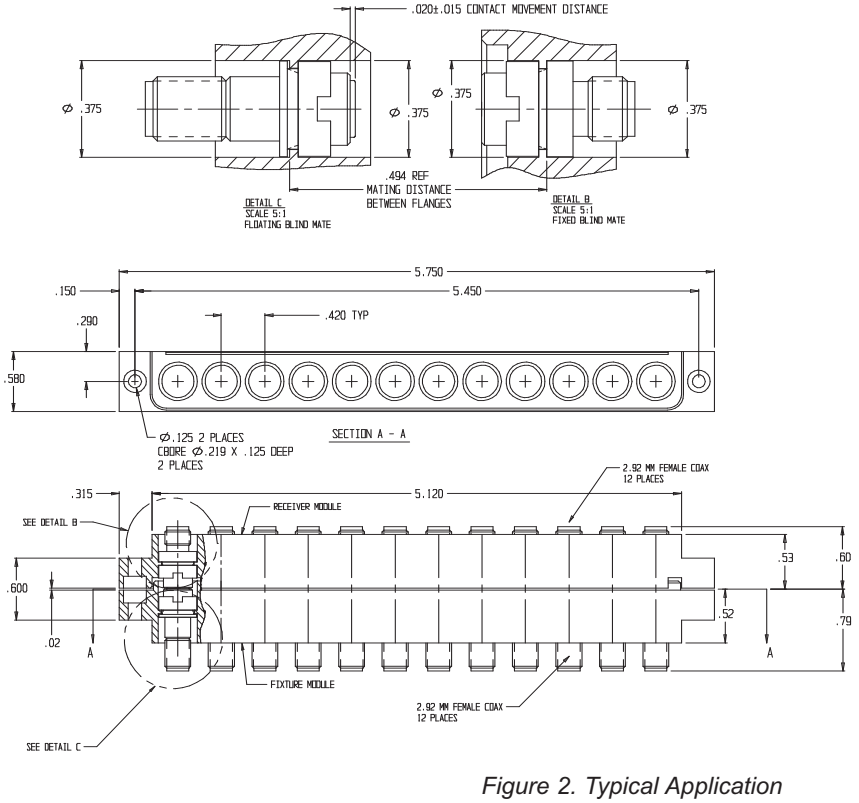
Applications

Ideal applications for these high quality/high frequency connectors range from mass-mount and receiver interface subsystems that house hundreds of high frequency connectors to single connector configurations. In either case these connectors allow threadless connector mating which is very useful when mating an array of connectors on one RF module to another array or connector within seconds.

Figure 2 shows a typical application where each connector half contains 7035R series connectors. These connectors contain spring loaded inner/outer contacts which allows for extremely long contact life as well as 0.02 per pair maximum radial and axial offset misalignment while still meeting all the specified electrical specifications.

Aeroflex / Weinschel offers a variety of standard models which are designed to fit or be configured into a wide range of applications:

- **Pressurized Designs -** Model 7008 (page 220) is equipped with a flange arrangement designed to withstand 1000 PSI of hydrostatic pressure. This model can be mated with another 7008 or any 7034 or 7035 series Planar Blind-mate. See page 218 for mating applications.
- **Rear Locking** - Models 7034 & 7034-1 (page 221) are beneficial in applications where there is easy access to the front of the connector for holding while the cable and connector is added or removed. Rotation is also prevented if the connector front is inserted in a slot which could allow for easier cable and connector assembly installation.
- **Front Locking** - Models 7035, 7035-1, 7035R, 7035R-1 (page 222) & 7041 (New..page 223) are beneficial in applications where the cable and connector will be inserted as an assembly into a panel or connector module from the rear.
- **Custom Configurations** - Other types of Planar Blind-mate connectors such as SMA, SMB, 3.5mm, flange, microstrip/pc board mount launch, test probes, frequency specific, arrays or interface subsystems can be designed for your particular application. Refer to page 222-224 for other examples.



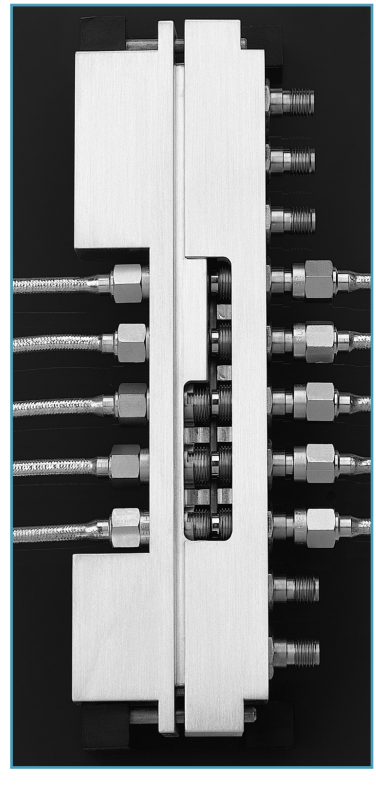


Figure 2. Typical Application

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Revision Date: 9/30/2012

Model 7008
Pressurized PLANAR BLINDMATE® Connector

dc to 40.0 GHz

RoHS

Specifications

NOMINAL IMPEDANCE: 50 Ω
FREQUENCY RANGE: dc to 40.0 GHz
POWER RATING: 50 Watts CW, 500 Watts peak

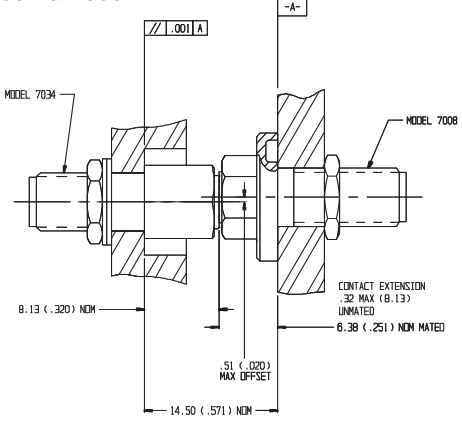
INSERTION LOSS (dB) & SWR*:

Frequency (GHz)	SWR typical	SWR maximum	Loss typical	Loss maximum
dc - 18	1.20	1.30	0.3	0.5
18 - 26.5	1.30	1.40	0.6	0.8
26.5 - 40	1.45	1.65	1.0	1.5

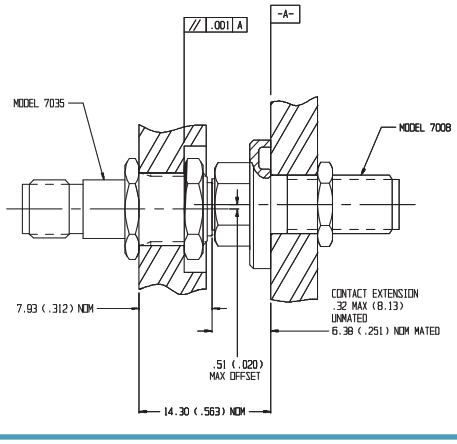
*Specifications are for mated pair (Mated pair can be any combination of Model 7008 and 7035).

Applications

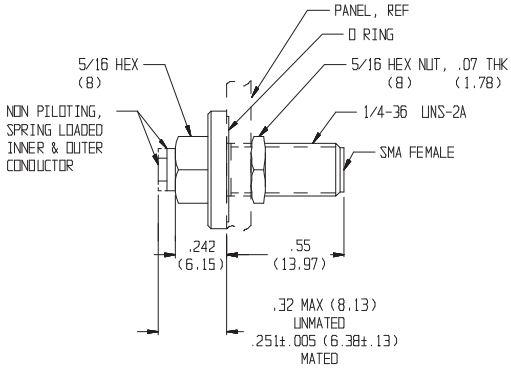
Model 7034 & 7008:



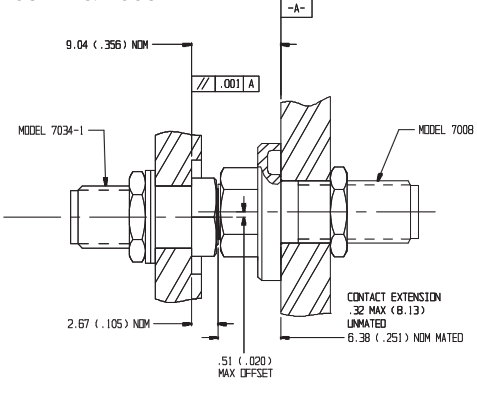
Model 7035 & 7008:



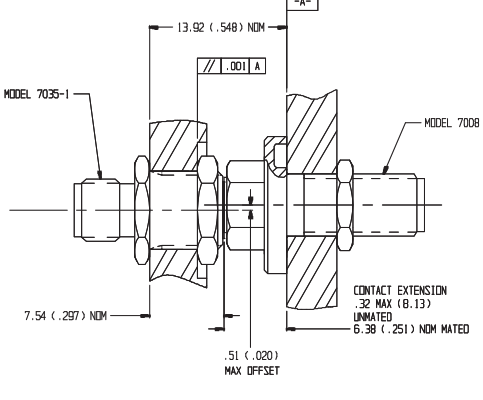
HYDROSTATIC PRESSURE: 1000 PSI
STATIC PRESSURE: 50 PSI
TEMPERATURE RANGE: -50°C to +125°C
CONNECTORS: Stainless Steel SMA connectors per MIL-STD-348 interface dimensions - mate nondestructively with MIL-C-39012 connectors.
WEIGHT: 2 oz (56.7 g) maximum
PHYSICAL DIMENSIONS:



Model 7034-1 & 7008:



Model 7035-1 & 7008:



NOTE:

1. All dimensions are given in mm (inches) and are maximum, unless otherwise specified.
2. Unit available with RoHS compliant materials, specify when ordering.

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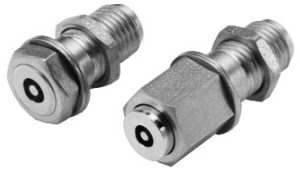
Models 7034 & 7034-1 dc to 40.0 GHz
Rear Locking PLANAR BLINDMATE® Connectors

RoHS



Specifications

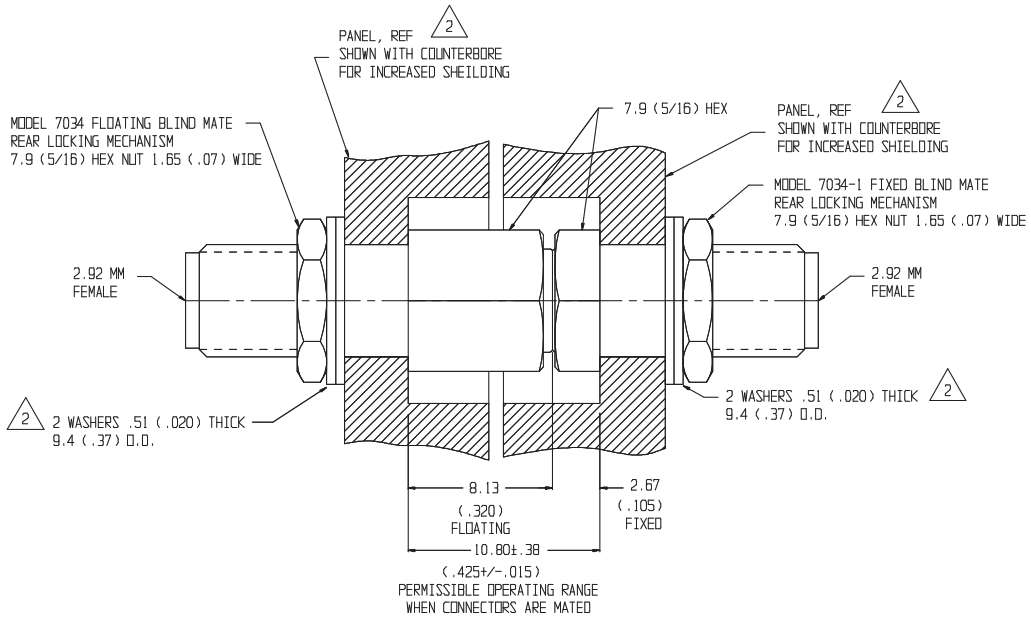
NOMINAL IMPEDANCE: 50 Ω
FREQUENCY RANGE: dc to 40.0 GHz
INSERTION LOSS REPEATABILITY: ±0.1 dB typical
MECHANICAL LIFE: 25,000 matings minimum

INSERTION LOSS (dB) & SWR:

Frequency (GHz)	Loss (maximum)	SWR (maximum)
dc - 18	0.50	1.35
18 - 40	0.85	1.55

RADIAL OFFSET ALLOWED: ±0.02 inches per pair
TEMPERATURE RANGE: -50°C to +100°C
CONNECTORS: Stainless Steel 2.92mm connector with gold plated contacts - mate nondestructively with SMA connectors per MIL-C-39012, 3.5mm, SMK, and other 2.92mm connectors.
WEIGHT: 2 oz, (56.7 g) maximum

PHYSICAL DIMENSIONS:



NOTES:
1. All dimensions are given in mm (inches) and are nominal, unless otherwise specified.
2. Maximum panel thickness for Model 7034 is 4.9 (0.195). For panels less than 4.2 (0.165) installation requires appropriate washer.
3. Unit available with RoHS compliant materials, specify when ordering.

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Revision Date: 9/30/2012

Models 7035, 7035-1, 7035R & 7035R-1 dc to 40.0 GHz Front Locking PLANAR BLINDMATE® Connectors

☑ RoHS

Specifications

NOMINAL IMPEDANCE: 50 Ω
FREQUENCY RANGE: dc to 40.0 GHz
INSERTION LOSS REPEATABILITY: ±0.1 dB typical
MECHANICAL LIFE: 25,000 matings minimum

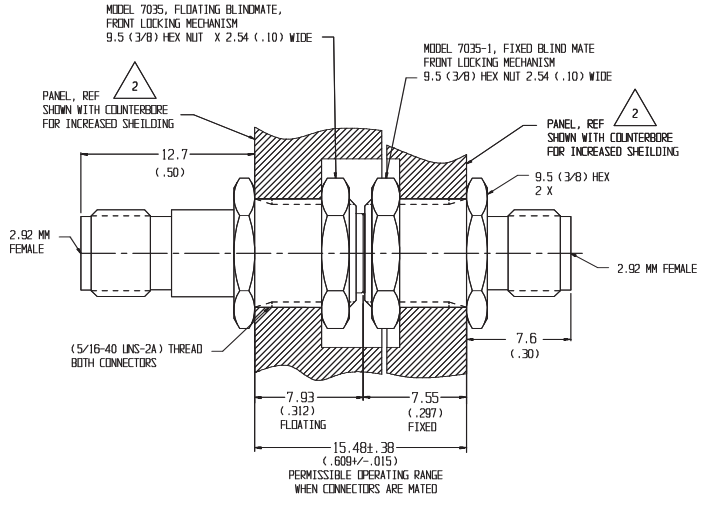
INSERTION LOSS (dB) & SWR:

Frequency (GHz)	Loss (maximum)	SWR (maximum)
dc - 18	0.50	1.35
18 - 40	0.85	1.55

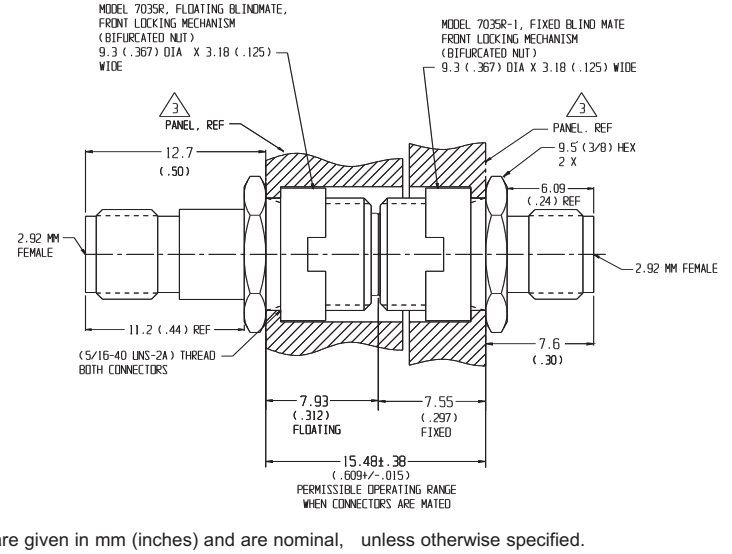
RADIAL OFFSET ALLOWED: ±0.02 inches per pair
TEMPERATURE RANGE: -50°C to +100°C
CONNECTORS: Stainless Steel 2.92mm connector with gold plated contacts - mate nondestructively with SMA connectors per MIL-C-39012, 3.5mm, SMK, and other 2.92mm connectors.
WEIGHT: 2 oz (56.7 g) maximum

PHYSICAL DIMENSIONS:

Models7035 & 7035-1:



Models 7035R & 7035R-1:



NOTES:
1. All dimensions are given in mm (inches) and are nominal, unless otherwise specified.
2. Maximum panel thickness for Model 7035 is 4.9 (0.195).
3. Panel flange thickness of 1.0 (0.03) shown for 7035R. Connector Mating shown with counterbore for increased shielding effectiveness.
4. Unit available with RoHS compliant materials, specify when ordering

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Revision Date: 9/30/2012

Models 7041 dc to 18.0 GHz
Rear Locking PLANAR BLINDMATE® Connector
Lower Cost Design

Specifications

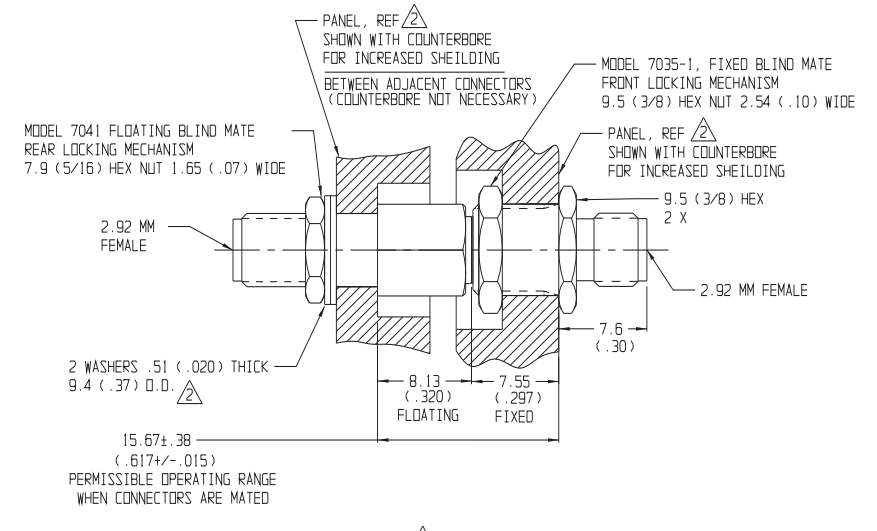
NOMINAL IMPEDANCE: 50 Ω nominal
FREQUENCY RANGE: dc to 18.0 GHz

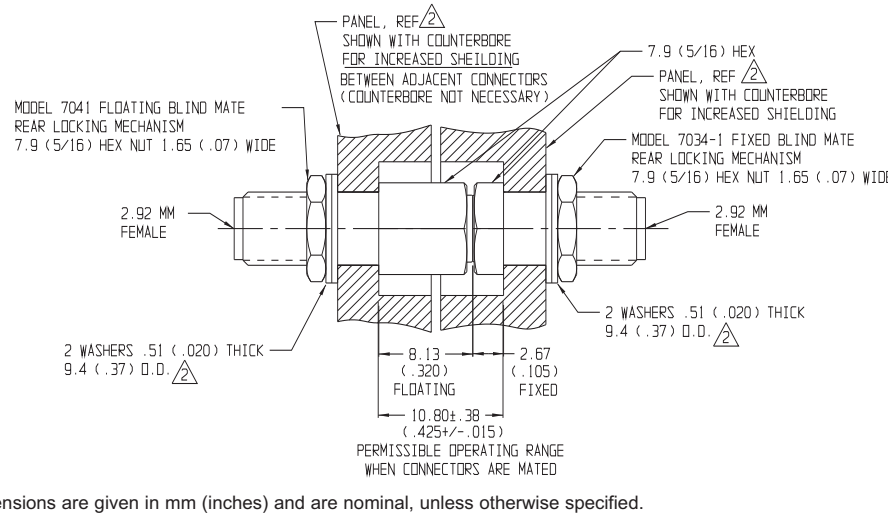
INSERTION LOSS (dB) & SWR:

Frequency (GHz)	Loss (maximum)	SWR (maximum)
dc - 6	0.40	1.20
6 - 18	0.60	1.40

INSERTION LOSS
REPEATABILITY: ±0.1 dB typical
MECHANICAL LIFE: 25,000 matings minimum
RADIAL OFFSET ALLOWED: ±0.02 inches per pair
TEMPERATURE RANGE: -50°C to +100°C
CONNECTORS: Stainless Steel 2.92mm connector with gold plated contacts - mate nondestructively with SMA connectors per MIL-C-39012, 3.5mm, SMK, and other 2.92mm connectors.
WEIGHT: 2 oz, (56.7 g) maximum

PHYSICAL DIMENSIONS:





NOTES:
1. All dimensions are given in mm (inches) and are nominal, unless otherwise specified.
2. Maximum panel thickness for Model 7041 is 4.9 (0.195). Panel flange thickness less than 4.2 (0.165). Installation requires appropriate washer.
3. * when mating surface have been maintained and kept clean.

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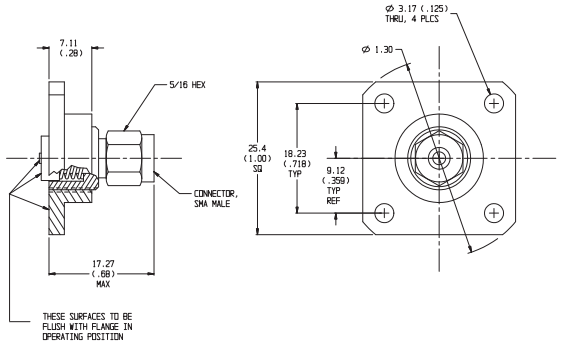
Custom Examples

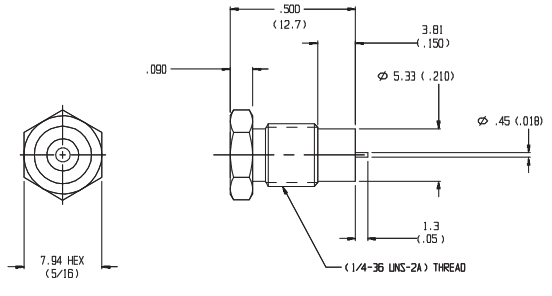
The following examples illustrate some typical Blind-mate designs that can be either modified or used as a basis for creating a specific blind-mate connector or system for your application:

Example 1:



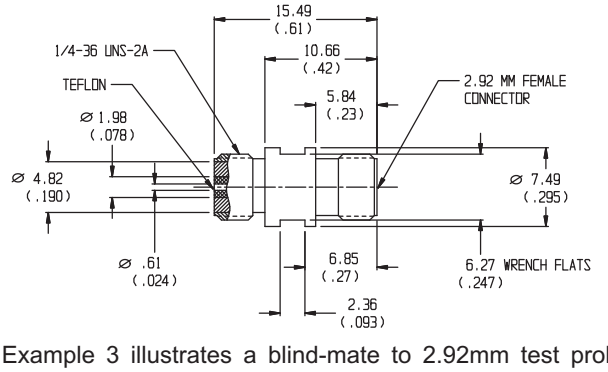
This example shows a blind-mate to SMA flange connector which includes a standard 4 hole mounting pattern and SMA connectors per MIL-C-39012 connectors. These connectors can be optimized to a specific frequency range and/or your defined specifications.

Example 2:



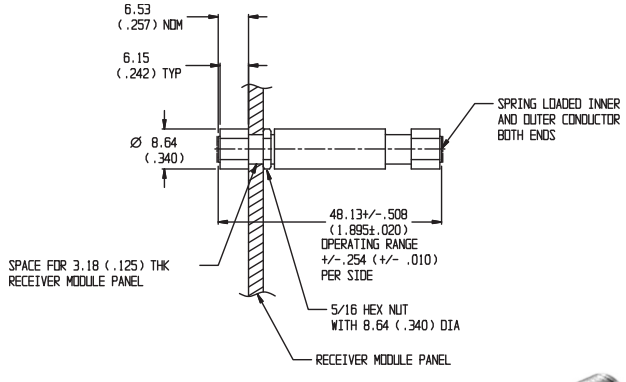
Example 2 illustrates a blind-mate to a microstrip launch design that features a non-piloting (fixed), spring loaded inner connector. Specifications include dc to 4 GHz frequency operation, maximum insertion loss of 0.5 dB and maximum SWR of 1.25.

Example 3:



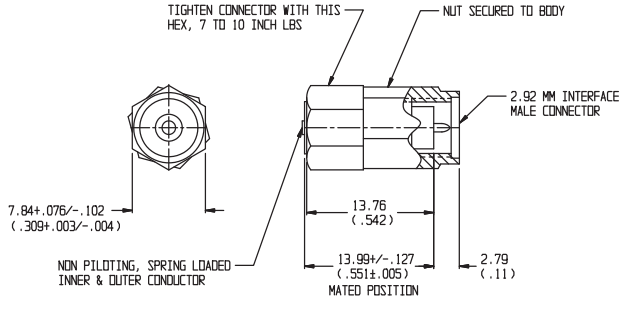
Example 3 illustrates a blind-mate to 2.92mm test probe design that features wrench flats, dc to 18 GHz frequency operation, maximum insertion loss of 6 dB and maximum SWR of 1.25. This was specifically designed to interface with standard SMA, 3.5mm, and 2.92mm Bulkhead connectors.

Example 4:



This example illustrates shows a 6 dB blind-mate attenuator design that consists of two floating receivers with a compression spring and spring loaded contacts (inner and outer conductors). Designs can also be supplied with stationary fixed surface connectors. Specifications for this unit include dc-32 GHz operation, 1.35 maximum SWR, and a radial alignment ±0.02 offset.

Example 5:



This example illustrates a blind-mate to 2.92mm connector design that features a non-piloting, spring loaded inner and outer connector. Specifications included dc to 40 GHz frequency operation, static pressure of 50 PSI, temperature range of -50°C to +125°C maximum insertion loss of 0.3 to 1.5 and maximum SWR of 1.30-1.70.

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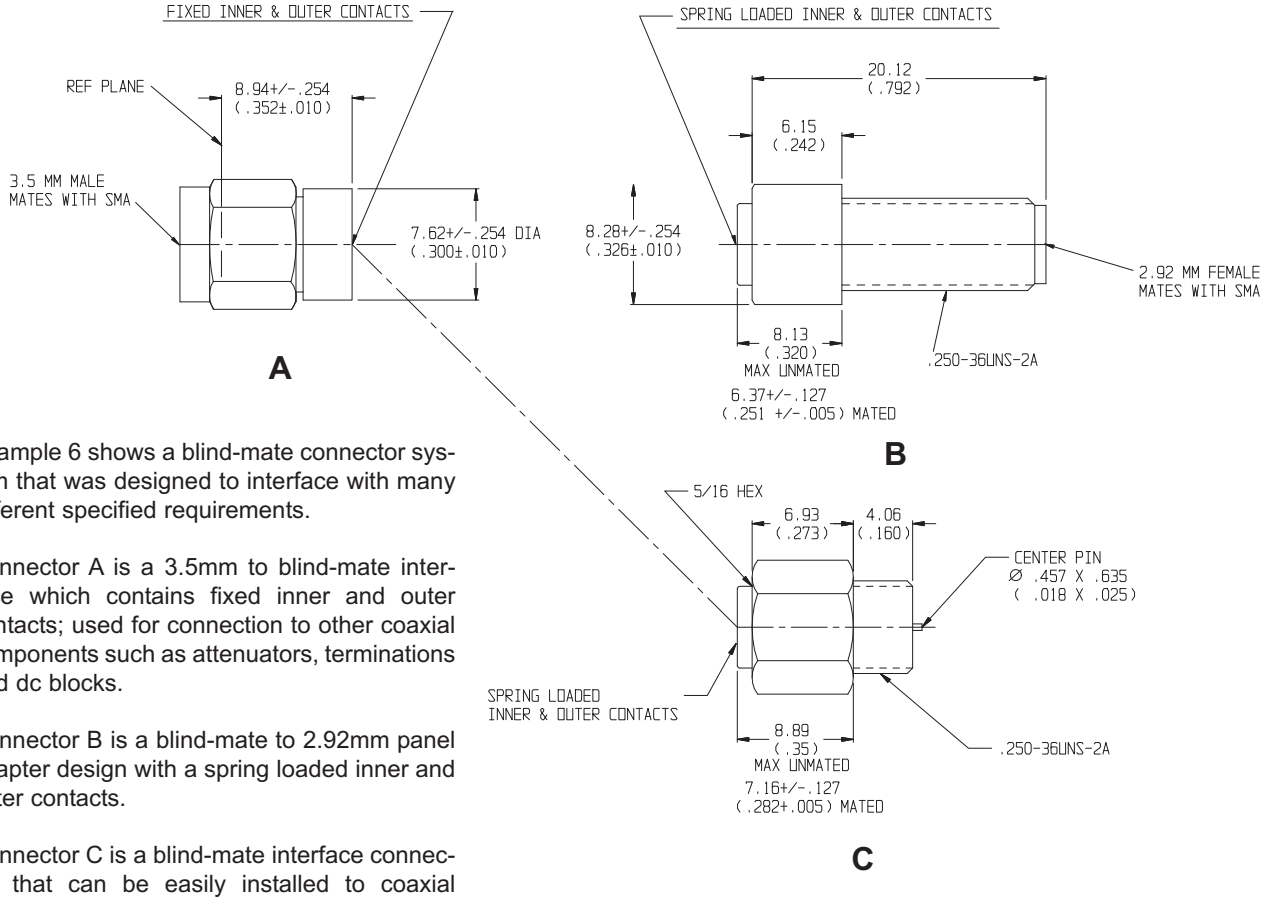
Example 6:



Example 6 shows a blind-mate connector system that was designed to interface with many different specified requirements.

Connector A is a 3.5mm to blind-mate interface which contains fixed inner and outer contacts; used for connection to other coaxial components such as attenuators, terminations and dc blocks.

Connector B is a blind-mate to 2.92mm panel adapter design with a spring loaded inner and outer contacts.

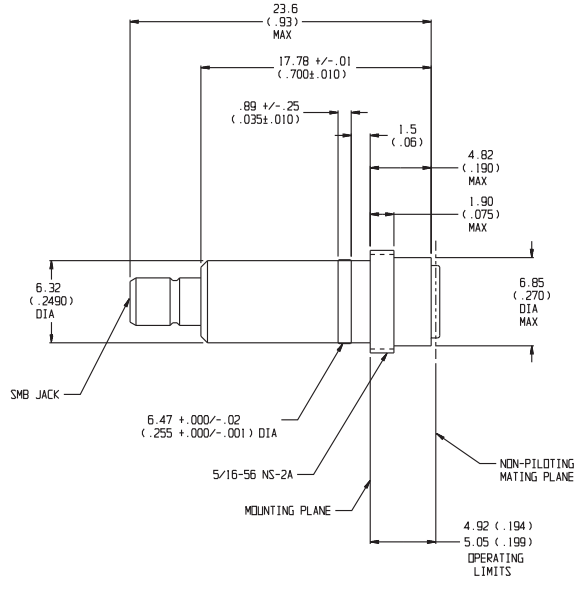
Connector C is a blind-mate interface connector that can be easily installed to coaxial cables or printed circuit board assemblies.

Example 7:

This example illustrates a low cost blind-mate to SMB configuration specifically designed and optimized for RF & wireless applications. These connectors offer not only all the features of the Planar Blind-mate interface but the SMB connector provides an additional quick disconnect for cable assemblies.

Specifications for this connector include dc to 2.0 GHz operation, 50 Ω nominal impedance, insertion loss of 0.35 dB, SWR of 1.15-1.30, radial/axial misalignment of ±0.020" OFFSET (blind-mate side)**, operating temperature of** +10°C to +40°C, dielectric withstanding voltage of 1000 Vac and a insulation resistance of **1000 MΩ nominal.**

These stainless steel connectors contain non-piloting contacts that provides long life (1,000,000 matings) and offers a repeatability of ±0.05 dB typical.



NOTE: All dimensions are given in mm (inches) and are maximum, unless otherwise specified.

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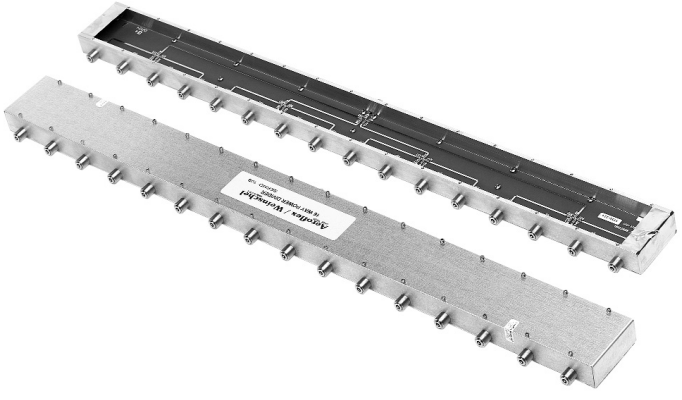
Example 8: 16 Way Power Divider - High Density Packaging Environment

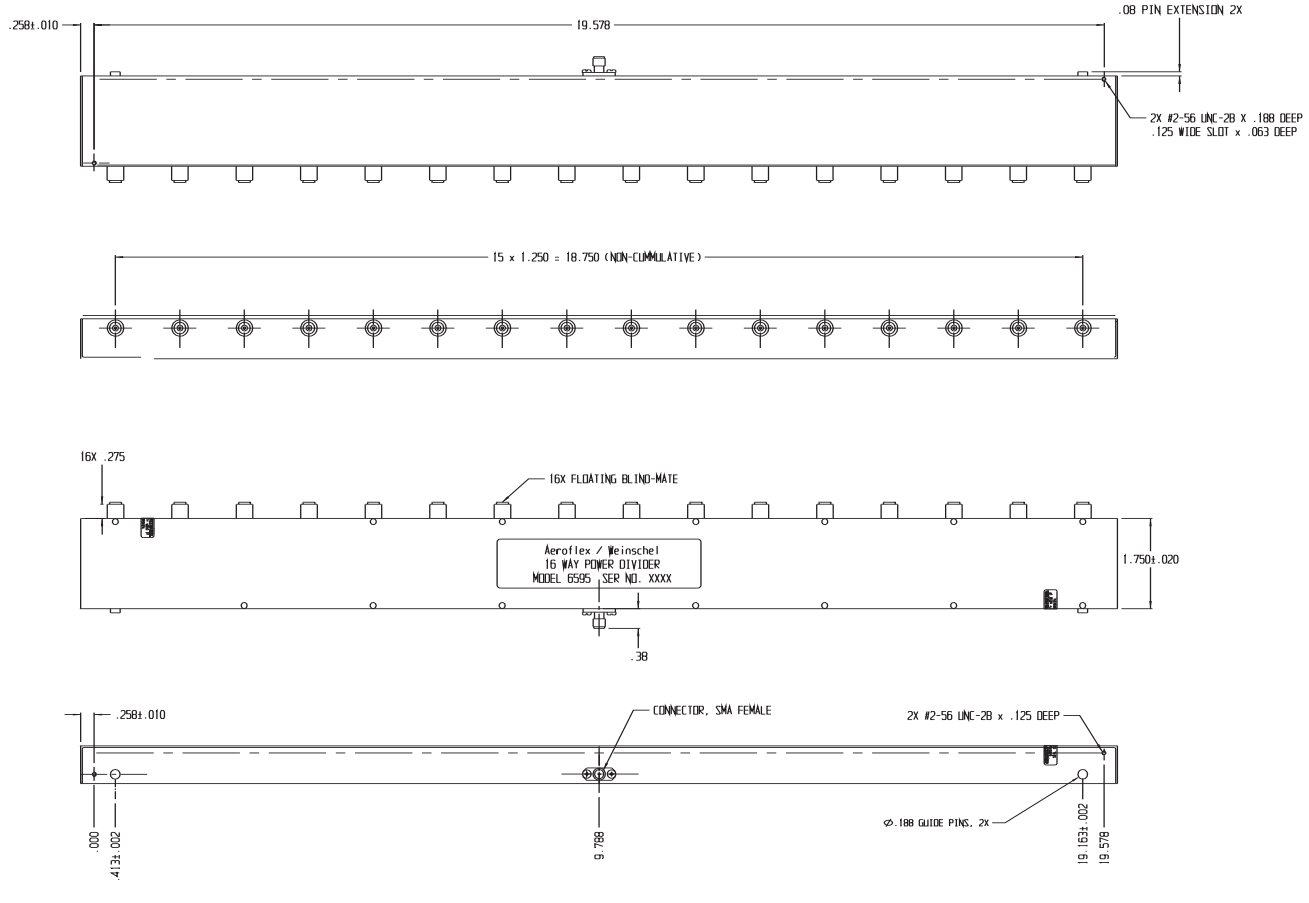
This example shows how a series of blind-mate connectors are used in a 16 Way Power Divider module that is used in a high density packaging environment.



Specifications

Frequency Range:	30 MHz - 3 GHz
Impedance:	50 ohms nominal
Isolation:	23.5 minimum
RF Input Power:	1 Watt maximum (any port)
Operating Temperature Range:	0 to 60 °C

PHYSICAL DIMENSIONS:



NOTES: All dimensions are given in inches and are nominal, unless otherwise specified.

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Models 7004A & 7005A

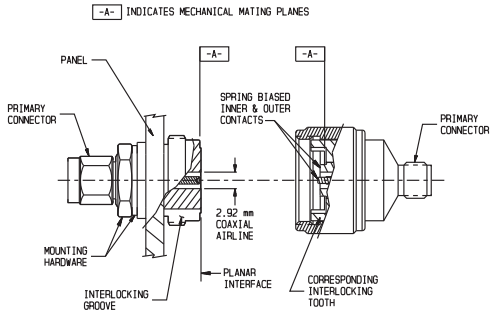
PLANAR CROWN® UNIVERSAL CONNECTOR SYSTEM

dc to 40.0 GHz

SMA; Type N; TNC; GPC-7; 3.5mm; SMK; 2.4mm

AEROFLEX
A passion for performance.

☑ RoHS



Features

The use of **PLANAR CROWN®** connectors on instruments, cables, components/accessories offers the manufacturer and user the following benefits.

Reduced Downtime - Damaged connectors can be replaced in seconds without any tools. Repair cost is minimized to that of a single connector. Recalibration, in most applications, is virtually eliminated due to closely matched phase, mechanical dimensions and insertion loss of the replaceable PLANAR CROWN® assemblies.

Versatility - Ability to select different connector types adds versatility to instruments, cables, systems and accessories. It offers the end user multiple connector options. Connector type and sex can be readily interchanged as dictated by the system/DUT, eliminating the need for adapters.

Superior Electrical Performance than would be obtained by additional adapters.

Simplified Network and Power Measurements on non-insertable devices.

Non-rotational Interface - Since the PLANAR INTERFACE has interlocking teeth, it eliminates unthreading of the connection when the Crown is subjected to a rotational torque. This feature is especially useful on coaxial cables where one end unthreads so easily when the cable is subjected to twisting or flexing.

Torque Independent Connection - A torque wrench is not required when mating the Crown to the bulkhead. A reasonable hand tightening of the coupling nut results in an excellent RF connection. This is achieved by having spring biased inner and outer contacts in the Crown connectors. Spring biasing ensures an intimate electrical contact at the PLANAR INTERFACE. A pilot diameter on the bulkhead guarantees excellent concentricity.

Axial Isolation of the Center Contact - Any excessive axial force on the Crown center contact is absorbed by the spring biasing at the Planar interface end.

Standardized Mounting Holes - All instrument panels can be fabricated with a standard 3/8" Dia. D-hole independent of the front panel connector type/sex. This eliminates changes in sheet metal design when different connector options are requested.

Description

The PLANAR CROWN® UNIVERSAL CONNECTOR SYSTEM is comprised of two connector halves/subassemblies which have a common mating interface referred to as the PLANAR INTERFACE. The first connector half is called the PLANAR BULKHEAD which readily mounts into instrument front panels, components and cables. One end of this bulkhead has a 2.92mm (SMK) male/female primary connector. The other end has a combination of grooves, external threads and a coaxial PLANAR INTERFACE with a 2.92mm (SMK) airline geometry. The bulkhead operates mode free beyond 40 GHz. The second connector half, called the PLANAR CROWN®, has a similar 2.92mm PLANAR INTERFACE on one end, with spring biased inner and outer contacts. It has corresponding projections which interlock with slots on the bulkhead and a coupling nut which secures the two connector halves, resulting in a non-rotational, torque independent electrical connection. The spring biased inner and outer contacts eliminate the need for specifying proof torque and no tools are required to mate or unmate or break the connection. The primary end of the PLANAR CROWN® is offered in a variety of primary coaxial connector configurations such as SMA, Type N, GPC-7, TNC, 3.5mm, 2.92mm (SMK) and 2.4mm (under development), thus providing an extremely versatile connector system wherein a connector can be replaced in a matter of seconds.

EXPRESS Shipment available via 800-542-4457 or **www.argosysales.com**. Check with distributor for current product stocking quantities.

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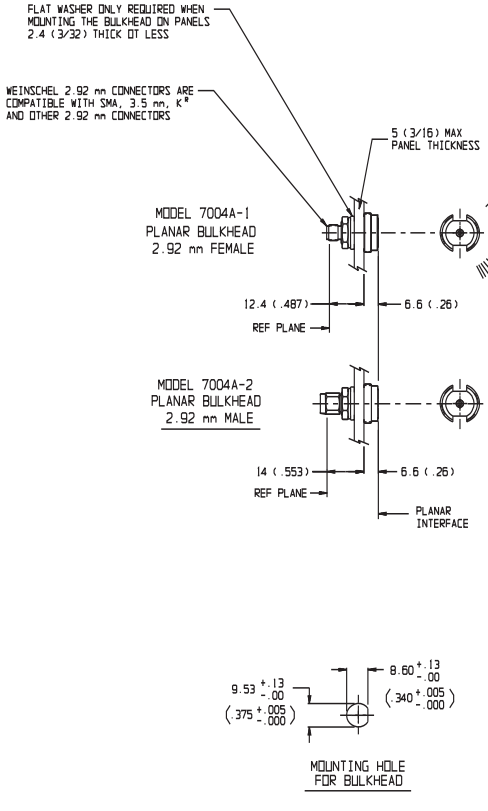
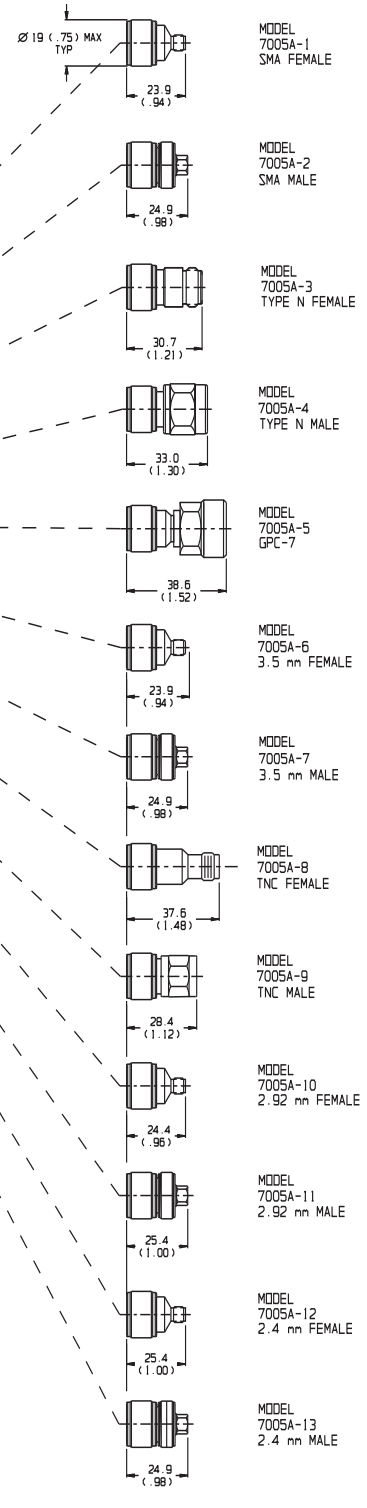
Specifications

Planar Bulkhead Connectors



Planar Crown Connectors



U.S. Patent No. 4,836,801
(Other U.S. and Foreign Patents pending)

NOTES: 1. All dimensions are given in mm (inches) and are nominal, unless otherwise specified.
2. K® is a registered trademark of the Wiltron 2.92mm connector

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Connector Systems

Planar Bulkhead Connectors . . . dc to 40.0 GHz

Model Number/ Primary Conn.	Frequency Range (GHz)	SWR* (maximum)	Insertion Loss * (dB maximum)	Electrical Length	
7004A-1 2.92mm Female	dc - 40	----	----	19.9 ± 0.25mm	
7004A-2 2.92mm Male	dc - 40	----	----	21.6 ± 0.25mm	
7010-1 2.92mm Female with dc Block	dc - 26.5	1.20-1.25	0.6-0.9	19.9 ± 0.25mm	
7010-2 2.92mm Male with dc Block	dc - 26.5	1.20-1.25	0.6-0.9	21.6 ± 0.25mm	

Planar Crown Connectors . . . dc to 40.0 GHz

Model Number/ Primary Conn.	Frequency Range (GHz)	SWR* (maximum)	Insertion Loss * (dB maximum)	Electrical Length	
7005A-1 SMA Female	dc - 26.5	1.20 (dc -18 GHz) 1.25 (18 - 26.5 GHz)	0.25 (dc -18 GHz) 0.35 (18 - 26.5 GHz)	18.6 ± 0.25mm	
7005A-2 SMA Male	dc - 26.5	1.20 (dc -18 GHz) 1.25 (18 - 26.5 GHz)	0.25 (dc -18 GHz) 0.35 (18 - 26.5 GHz)	18.6 ± 0.25mm	
7005A-3 Type N Female	dc - 18	1.20	0.25	18.6 ± 0.25mm	
7005A-4 Type N Male	dc - 18	1.20	0.25	28.6 ± 0.25mm	
7005A-5 GPC-7	dc - 18	1.20	0.25	34.8 ± 0.25mm	
7005A-6 3.5mm Female	dc - 34	1.20 (dc -18 GHz) 1.25 (18 - 26.5 GHz) 1.30 (26.5 - 34 GHz)	0.25 (dc -18 GHz) 0.35 (18 - 34 GHz)	18.0 ± 0.20mm	
7005A-7 3.5mm Male	dc - 34	1.20 (dc -18 GHz) 1.25 (18 - 26.5 GHz) 1.30 (26.5 - 34 GHz)	0.25 (dc -18 GHz) 0.35 (18 - 34 GHz)	18.0 ± 0.20mm	
7005A-8 TNC Female	dc - 18	1.20	0.25	26.3 ± 0.35mm	
7005A-9 TNC Male	dc - 18	1.20	0.25	26.3 ± 0.35mm	
7005A-10 2.92mm Female	dc - 40	1.20 (dc -18 GHz) 1.25 (18 - 26.5 GHz) 1.35 (26.5 - 40 GHz)	0.25 (dc -18 GHz) 0.35 (18 - 26.5 GHz) 0.45 (26.5 - 40 GHz)	18.0 ± 0.15mm	
7005A-11 2.92mm Male	dc - 40	1.20 (dc -18 GHz) 1.25 (18 - 26.5 GHz) 1.35 (26.5 - 40 GHz)	0.25 (dc -18 GHz) 0.35 (18 - 26.5 GHz) 0.45 (26.5 - 40 GHz)	18.0 ± 0.15mm	
7005A-12 2.4mm Female	dc - 40	1.20 (dc -18 GHz) 1.25 (18 - 26.5 GHz) 1.35 (26.5 - 40 GHz)	0.25 (dc -18 GHz) 0.35 (18 - 26.5 GHz) 0.45 (26.5 - 40 GHz)	18.0 ± 0.15mm	
7005A-13 2.4mm Male	dc - 40	1.20 (dc -18 GHz) 1.25 (18 - 26.5 GHz) 1.35 (26.5-40 GHz)	0.25 (dc -18 GHz) 0.35 (18 - 26.5 GHz) 0.45 (26.5-40 GHz)	18.0 ± 0.15mm	

Notes: 1. Specifications based on mated pair of **7004A-X** and **7005A-XX**. Refer to mating PLANAR CROWN for SWR and Insertion loss specifications.
2. Aeroflex / Weinschel 2.92mm connectors are compatible with SMA, 3.5mm, SMK and other 2.92mm connectors.

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Revision Date: 9/30/2012

General Specifications

PLANAR INTERFACE REPEATABILITY[1]:
Reflection Coefficient (Magnitude):

60 dB (dc - 18 GHz)
50 dB (18 - 26.5 GHz)
45 dB (26.5 - 40 GHz)

Transmission (Magnitude)[2]:

40 dB (dc - 18 GHz)
35 dB (18 - 26.5 GHz)
30 dB (26.5 - 40 GHz)

Transmission (phase)[2]: 0.5°

1. The Repeatability specifications apply to ten consecutive disconnections and reconnections of the PLANAR INTERFACE.

2. Transmission repeatability includes the repeatability of the VNA test cable.

OPERATING TEMPERATURE: 0°C to 85°C

CONSTRUCTION: Passivated stainless steel bodies and coupling nuts. Gold plated beryllium copper contacts.

INTERFACE DIMENSIONS & ADDITIONAL FEATURES OF PRIMARY CONNECTORS:

SMA (Models 7005A-1 and -2):

Contact Pin Recession: 0 to 0.1mm (0 to 0.004 in)

Front Insulator Recession: 0.23 to 0.33mm (0.009 to 0.013 in)

Aeroflex / Weinschel high frequency **SMA** connector operates mode free beyond 26.5 GHz and is a superior SMA connector. It incorporates a wider shoulder on the male and female mating planes (0.020" typical compared to 0.007" on standard SMA connectors) and has a 3 slot female contact instead of the conventional four slot design. Both these features result in a **more rugged** connector with longer life and improved repeatability. Unlike many commercial teflon loaded SMA connectors, these connectors will not cause premature damage when mated with 3.5mm, 2.92mm and SMK connectors.

Type N (Models 7005A-3 and -4):

Contact Pin Protrusion (N female): 5.18 to 5.26mm (0.204 to 0.207 in)

Contact Pin Recession (N Male): 5.28 to 5.36mm (0.208 to 0.211 in)

The male and female Type N connectors are Precision Test connectors per MIL-STD-348. They are usable to 22 GHz.

GPC-7 (Model 7005A-5):

Contact Pin Recession: 0 to 0.05mm (0 to 0.002 in)

The GPC-7 connectors are designed per IEEE Std 287.

3.5mm (Models 7005A-6 and -7):

Contact Pin Recession: 0 to 0.08mm (0 to 0.003 in)

TNC (Models 7005A-8 and -9):

Contact Pin and Insulator Protrusion (TNC Female): 5.03 to 5.28mm (0.198 to 0.208 inch)

Contact Pin and Insulator Recession: 5.28mm (0.208 in) minimum

These TNC male and female connectors are designed per MIL-STD-348 interface requirements for the NEW TNC connectors and operate mode free beyond 18 GHz.

2.92mm (Models 7005A-10 and -11):

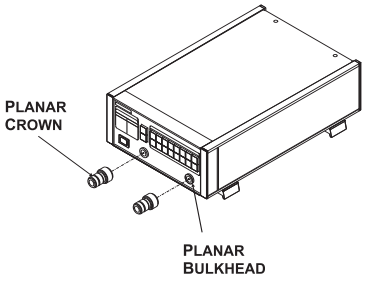
Contact Pin Recession: 0 to 0.08mm (0 to 0.003 in)

In addition to the many advantages of 2.92mm airline connectors the Aeroflex / Weinschel version incorporates a three slot female contact design resulting in a more ruggedized contact than the conventional four slot design on most 2.92mm connectors.

2.4mm (Models 7005A-12 and 7005A-13):

Contact Pin Recession: 0 to 0.08mm (0 to 0.003 in)

Applications



Test Instruments - Synthesizers; network/spectrum analyzers, power meters and many more.

Accessories - Detectors, SWR bridges/auto testers; power sensors, etc.,

Microwave Cables - Cables constructed with the **PLANAR BULKHEAD** connector interface at one end offer the user a wide choice of primary coaxial connectors offered on the **PLANAR CROWN** models. For an instrument such as a VNA, this eliminates the need for having different sets of test cables for different connector configurations. Cables with a built in PLANAR CROWN on the opposite end mate directly with **PLANAR BULKHEADS** on instruments, providing an excellent non-rotational electrical connection.

Special Configurations - The **PLANAR BULKHEAD** design can be provided with a built in attenuator or dc block. This is a useful feature when instrument front ends require a masking attenuator or need to be protected against dc voltages. Although the basic mechanical design of the **PLANAR BULKHEAD** was intended for panel mounting, it can be modified to mount directly into other accessories. The primary connector of the bulkhead can also be modified to launch directly on microstrip or suspended stripline substrates.

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