3.5mm PRECISION CONNECTOR GAGE KIT

A034B

Features

- ***3.5mm (APC3.5) and 2.92mm (K) Connectors***
- ***Direct Reading***
- ***Self-Checking***
- ***Accurate***
- ***Easy To Use***

A034B 3.5mm/2.92mm Precision Connector Gage Kit

Description

The Maury A034B is designed to provide a fast and accurate means of checking the critical center conductor contact pin locations of 3.5mm (APC3.5) and 2.92mm (K) connectors relative to the outer conductor mating plane. The critical interface dimensions are shown in Figure 1.

The A034B consists of two gage assemblies, one each for the female and male connectors, and a master gage. All components are housed in a foam-lined, wooden instrument case. The gage assemblies are dial indicators which when zero-set by means of the master gage will indicate the actual deviation of the center contact from the outer conductor mating plane. The A034B has an accuracy of better than ±0.00025 inch and a dial resolution of the same amount. All gaging parts and the master gage are fabricated from stainless steel for durability and excellent dimensional stability.

Available Model

Model	Gage Assemblies	Dial Graduations (inches)	Applications
A034B	2 each	0.00025	Measures contact pin location 3.5mm and 2.92mm female and male precision connectors.

Applications

The critical contact pin locations of 3.5mm and 2.92mm female and male precision connectors are shown in Figure 1. These dimensions must be maintained in order to provide proper electrical performance and mechanical mating of the connectors. The connectors are designed to achieve a co-planar mating of the center conductors and outer conductors at the outer mating plane. Destructive interference will result if the contacts protrude beyond the outer conductor mating planes. This interference may cause buckling of the female contact fingers or damage to associated equipment during mating. Alternately, an excessive gap of the mated center contacts produces high reflections and reduces peak power handling capability. These precision connectors should be gaged routinely to ensure compliance to applicable specifications, to prevent destructive mating, and to ensure proper electrical performance. Additionally, connectors on all equipment should be gaged periodically to detect out of tolerance conditions which may impair electrical performance or cause damage to mating connectors. The A034B is very useful in a variety of applications such as: production checkout, incoming inspection, quality control and laboratory measurements.

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Diminsions (Inches)

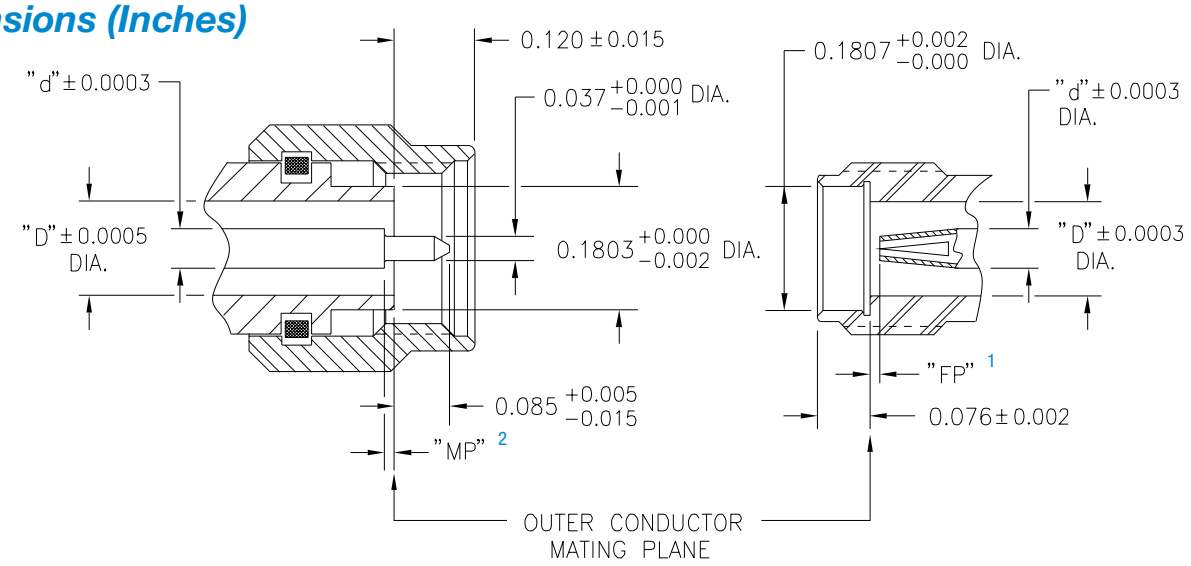

Figure 1. Critical Contact Pin Location Dimensions of 3.5mm & 2.92mm Precision Connectors.

NOTE: Minus (–) tolerances indicate a recessed condition from the outer conductor mating plane. Plus (+) tolerances indicate a protruding condition above the outer conductor mating plane. Other dimensions shown in Figure 1 are icluded because they affect the mating of the gage assembly's gaging mechanisms (bushing and pin). Deviation from these dimensions may cause measurement errors or improper fit between the gaging mechanisms and the connectors being measured. Consult our Customer Service department on measuring connectors with interface dimensions other than those specified above.

Connector Type	d	D	"FP" [3]	"MP" [3]	Comments
3.5mm	0.0598	0.1378	0.000 +0.003/–0.000	0.000 +0.003/–0.000	Rated to 34 GHz.
2.92mm	0.0500	0.1150	0.000 +0.003/–0.000	0.000 +0.003/–0.000	Rated to 40 GHz.

Connector Gage Specifications

The specifications listed in the table to the right are the performance standards based on factory measurements traceable to the U.S.A. National Institute of Standards and Technology (NIST). The repeatability is specified as ±0.00002 inches.

Note: Operator skill and the use of a torque wrench has a great impact on repeatability. You can easily determine the repeatability of the connector gages by multiple engagements of the master gages.

Characteristics	Limits (inches)	Comments
Gage Resolution	±0.000050	1/5 Least dial graduation [4]
Gage Calibration Accuracy [9]	±0.000375	1 Least dial graduation [5] plus 0.000125 measurement guardband.
Gage Repeatability	±0.000050	1/5 Least dial graduation [5]
Master Accuracy	±0.000050	0.00010 Range [6]
Total Uncertainty [7, 8]		
Worst Case	±0.000385	Root sum of the squares.
RSS	±0.000525	Add resloution, repeatability, gage and master accuracy limits.

1 Female contact pin location — use gage assembly marked "F".

2 Male contact pin location — use gage assembly marked "M".

3 Tighter tolerances can be used at users' discretion.

4 Per ASME B89.1.10M-2001, C5.1.2.

5 Per ASME B89.1.10M-2001, Table 2.

6 Per manufacturer's specification.

7 Performance standards are in compliance with ANSI/NCSL Z540-1, MIL-STD-45662A and ISO 10012-1.

8 Applies over the operating range for connector gaging 0.006" recession to 0.003" protrusion from master gage zero setting.

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