

PRECISION CONNECTOR GAGE KITS

SMA CONNECTORS

Features

- Direct Reading
- Self Checking
- Accurate
- Easy to Use

Description

Maury A027 connector gage kits are designed to check the critical axial interface dimensions of type SMA female and male connectors per MIL-C-39012, both class 2 and standard test connectors.

The critical axial interface dimensions for SMA female and male connectors are shown in **Figure 1** (see page 2). The table below shows the various gage kits that are available to check these dimensions. These gage kits provide an accurate means for checking the critical interface of SMA type connectors. The gage assemblies themselves are basically dial indicator comparators and when zero set will reflect the actual deviation from zero, which corresponds to deviation from the outer conductor mating plane.

The gage kits consist of one or more gage assemblies and a master gage supplied in a wooden instrument



case. All gage parts and the master gage are made from stainless steel and will provide long-wearing characteristics with excellent dimensional stability. The accuracy of the measurement made by these gages is better than ± 0.00025 inches and the indicator is graduated in 0.0005 increments which provides excellent resolution.

Application

The critical axial interface of SMA type connectors are shown in **Figure 1**. These dimensions must be maintained in order to provide proper electrical

Model	Gage Assemblies	Interface Measured (Refer to Figure 1)
A027	2	Female and male contact pin; FP and MP dimensions.
A027A	4	Female and male contact pin and dielectric; FP, FD, MP and MD.
A027G	2	Female contact pin and dielectric; FP and FD.
A027M	3	Male contact pin and dielectric; MP and MD, also measure 0.085 pin dimension of no step pin male connector.



performance and mechanical mating of male and female connectors. SMA type connectors are designed to achieve a co-planar mating at the outer conductor mating plane, i.e., a metal to metal contact at the outer conductor mating plane. Destructive interference may result if the contacts protrude beyond the outer conductor mating planes which may cause buckling of the female contact fingers or damage to associated equipment during mating. Also an excessive gap of the center contacts when mated produces high reflections and causes breakdown under peak power conditions. The dielectric interface is also critical since protrusion beyond the outer conductor mating plane may prevent proper electri-

cal contact, whereas an excessive recessed condition can introduce unwanted reflections in a mated pair. All SMA connectors should be gaged after assembly to insure compliance to applicable specifications, to prevent destructive mating and to insure electrical performance. In addition, SMA 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.

These gage kits are very useful in a variety of applications such as: production check-out incoming inspection, quality control and in the laboratory.

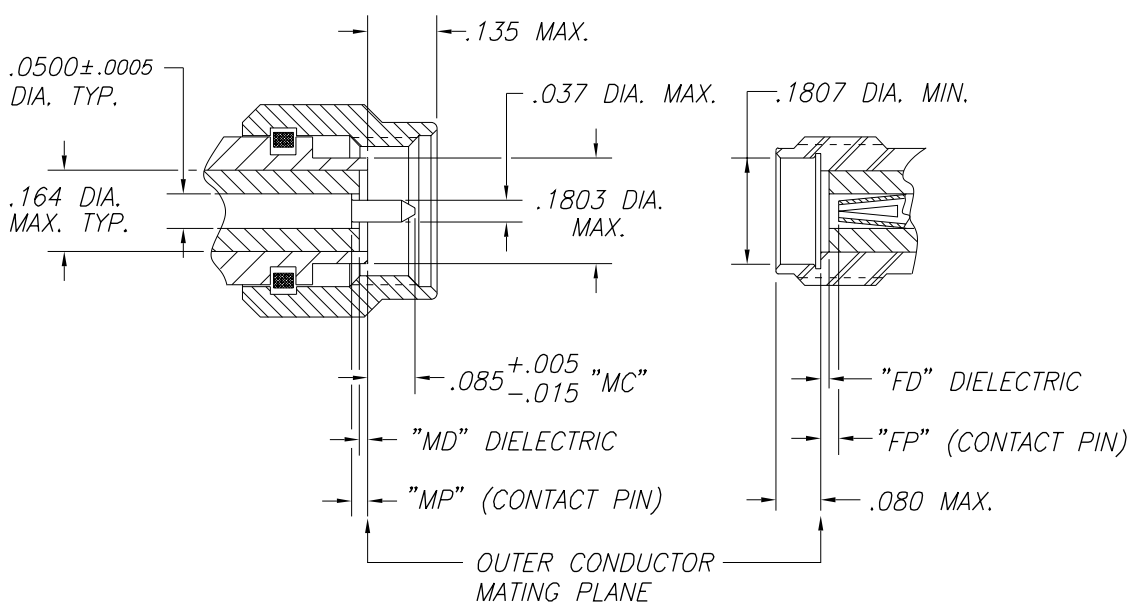


Figure 1. Critical Axial Interface Dimensions of SMA Type Connectors

Item	Specification	FP	FD	MP	MD	Comment
A	MIL-C-39012 Class 2	0.000 +0.030 -0.000	-0.002 Maximum	0.000 Minimum	-0.002 Maximum	Per MIL-C-39012/55 and MIL-C-39012/57
B	MIL-C-39012 Recommended	0.000 +0.010 -0.000	0.000 ± 0.002	0.000 +0.010 -0.000	0.000 ± 0.002	Recommended tolerance for MIL-C-39012 Class 2
C	MIL-C-39012 Standard Test	0.000 +0.003 -0.000	0.000 +0.002 -0.000	0.000 +0.003 -0.000	0.000 +0.002 -0.000	Per MIL-C-39012B Amendment 1
D	Maury Standard	0.000 +0.005 -0.000	0.000 ± 0.002	0.000 +0.005 -0.000	0.000 ± 0.002	Used on most Maury components
E	Maury Precision	0.000 +0.005 -0.000	0.000 +0.002 -0.000	0.000 +0.005 -0.000	0.000 +0.002 -0.000	Supplied on Maury precision components
F	Industry Standard	0.000 +0.010 -0.000	0.000 +0.005 -0.002	0.000 +0.010 -0.000	0.000 +0.005 -0.002	OSM 1979 catalog page 12