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Phase Adjustable SMA Adapters & Connectors

Features

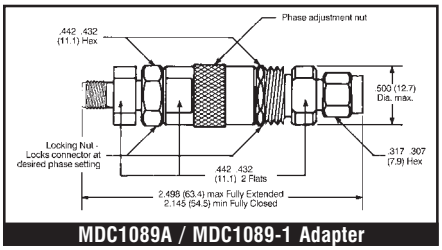
- Phase Adjustment = 10° × F (GHz)
- Available for .141 Dia. and .085 Dia. Semi Rigid Cable
- Available as Male/Female Adapter
- Phase Adjustment at Final Production Stage
- DC to 18 GHz with low VSWR
- DC to 4GHz adapter model available
- Meets Stringent Environmental Specifications
- Delivery from stock

Electrical *	
Impedence	50 ohms
Frequency Range	DC-18 GHz
Insertion Loss	dB= 1 × $\sqrt{f}$ for adapter version 0.8 × $\sqrt{f}$ for connector version (f is frequency in GHz)
VSWR	(see chart)
Phase Adjustment (degrees)	10° × f
Phase Change per revolution of adjustment nut	0.636° × f
Voltage Rating	500 Vrms

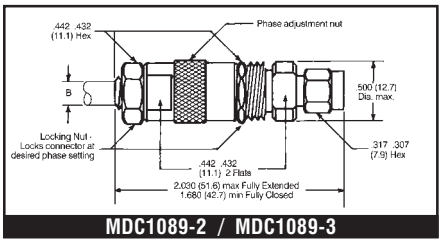
Mechanical	
Mating	Mating face dimensions compatible with the mating requirements of MIL-C-39012/55 (type SMA)
Connector Durability	(SMA interface) 500 cycles of mating and unmating without deterioration

Environmental	
Shock	MIL-Std-202, Method 213, Test Condition I
Vibration	MIL-Std-202, Method 204, Test Condition D
Thermal Limits	-65ºC to +125ºC

Material	
Center Conductor	Beryllium Copper, Gold Plated
Connector Body	Brass or Beryllium Copper, Gold Plated
Adjusting Nut and Locking Nut	Brass with bright nickel plate
Connector Coupling Nut	Stainless Steel Passivated
Insulation	TFE



MDC1089A / MDC1089-1 Adapter

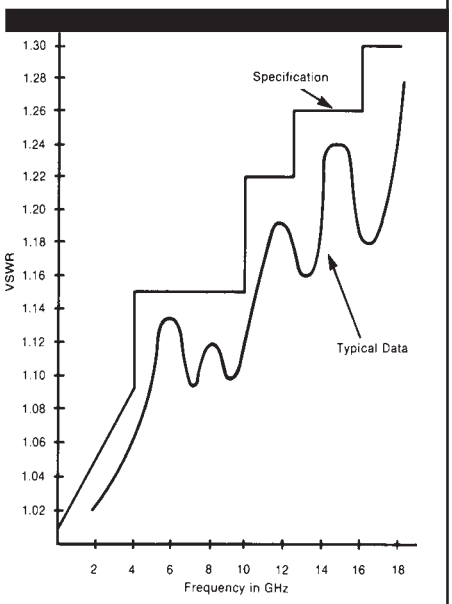


MDC1089-2 / MDC1089-3

Simple Mechanical Phase Adjustment

These SMA connectors for semi-rigid coaxial cables offer a precise yet extraordinarily simple means of phase adjustment for microwave instrumentation. MIDISCO phase adjustable connectors incorporate a threaded interconnection of variable length. Turning a phase adjustment nut creates small-increment changes in cable length and hence phase, up to a maximum of 180º, at 18 GHz. (At 9 GHz, for example, one revolution of the nut results in a mechanical length change of .021" and a phase change of 6º.)

MIDISCO phase adjustable connectors are available in two standard sizes, number MDC1089-2 for .141" dia. cable and number MDC1089-3 for .085" dia. cable. Adapter versions, numbers MDC1089-1 (DC-18GHz) and MDC1089A (DC-4GHz), are also available for in-line applications.



For phased array radar, test equipment, ILS landing systems & other instrumention using phase matching techniques, the new connectors substitute the ease of mechanical screw adjustments for the delays of laborious cable-trimming. Phase matching may be performed at final production stages, allowing less stringent specifications for equipment components. Once established, the proper phase setting for each cable is maintained by a connector locking nut. To compensate for system aging, the locking nut may be released and new phase adjustments made at any time.

Electrical Performance

Unlike other phase-matching techniques with limited frequency ranges which may hamper performance or require use of more than one model, each broadband MIDISCO phase adjustable connector covers the entire range from DC to 18 GHz. (MDC1089A: DC to 4GHz). Low VSWR is typical (see chart above).

Phase adjustment range in degrees is ten times the frequency in GHz (e.g. 100º, at 10 GHz, 180º at 18 GHz).

Environmental Performance

MIDISCO phase adjustable SMA connectors are operational at temperatures from -65ºC to +125ºC. They also meet the following sections of MIL-Std-202 for environmental conditions:

Vibration:

Method 204 - Test Condition D

Mechanical Shock:

Method 213 - Test Condition I

Model	Frequency Range	Max Length (in.)	Diameter (in.) B	Description
MDC1089A	DC-4 GHz	2½	n/a	In-Line Adapter
MDC1089-1	DC-18 GHz	2½	n/a	In-Line Adapter
MDC1089-2	DC-18 GHz	2 1/32	0.144	0.141" Cable Conn.
MDC1089-3	DC-18 GHz	2 1/32	0.088	0.085" Cable Conn.

Note: Phase adjustable SMA connectors are available for other semi-rigid cables. Please consult factory.

** These characteristics are typical and may not apply to all connectors.*

MIDISCO

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