

Phase Adjustable SMA Adapters & Connectors

Up to 18 GHz

Features

- Phase Adjustment = $10^\circ \times F$ (GHz)
- Available for .141 Dia. and .085 Dia. Semi Rigid Cable
- Available as Male/Female Adapter
- DC to 18 GHz with low VSWR
- DC to 4GHz adapter model available
- Meets Stringent Environmental Specifications
- Impedance: 50 Ohms
- Delivery from stock

Electrical (typical characteristics)

Impedance	50 ohms
Frequency Range	DC-18GHz
Insertion Loss	$\text{dB} = 0.1 \times \sqrt{f}$ (adapter) $\text{dB} = .08 \times \sqrt{f}$ (connector)
	<i>f</i> is frequency in GHz
Phase Adjustment (degrees)	$10^\circ \times f$
Phase Change per revolution of adjustment nut	$0.636^\circ \times f$
Voltage Rating	500 Vrms

Mechanical

Mating	Interface dimensions are IAW MIL-STD-348/SMA.
Connector Durability	500 cycles

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	Stainless Steel Passivated
Insulation	TFE

Simple Mechanical Phase Adjustment

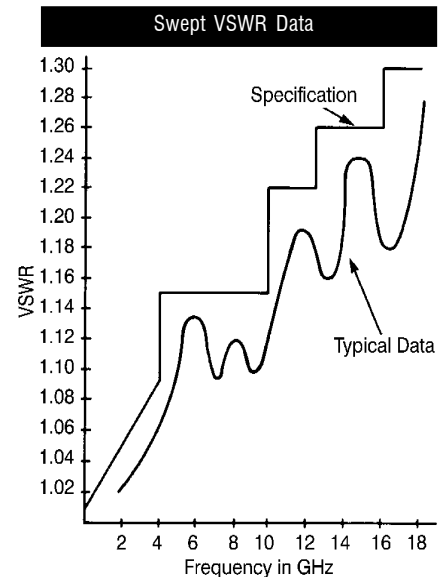
These SMA connectors for semi-rigid coaxial cables offer a precise yet extraordinarily simple means of phase adjustment for microwave instrumentation. MIDISCO phase adjustable connectors incorporate a threaded interconnection of variable length. Turning a phase adjustment nut creates small-increment changes in cable length and hence phase, up to a maximum of 180° , at 18 GHz.

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 & other instrumentation using phase matching techniques, the new connectors substitute the ease of mechanical screw adjustments for 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).

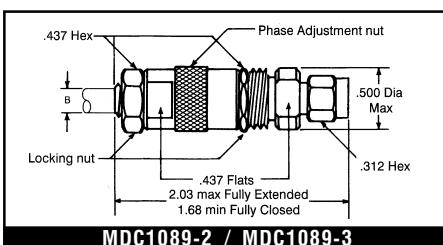
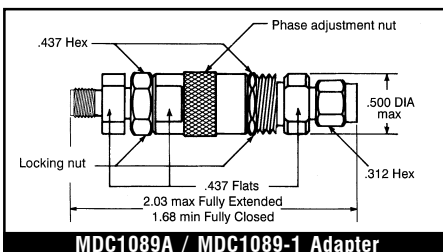


Phase adjustment range in degrees is ten times the frequency in GHz (e.g. 100° , at 10 GHz, 180° at 18 GHz).

Environmental Performance

MIDISCO phase adjustable SMA connectors are operational at temperatures from -65°C to $+125^\circ\text{C}$. 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 (inches)	Description
MDC1089A	DC-4GHz	$2 \frac{1}{2}$	In-line Adapter
MDC1089-1	DC-18GHz	$2 \frac{1}{2}$	In-line Adapter
MDC1089-2	DC-18GHz	$2 \frac{1}{32}$	0.141" Cable Connector
MDC1089-3	DC-18GHz	$2 \frac{1}{32}$	0.085" Cable Connector

These connectors are available for other semi-rigid cables. Please consult the factory.