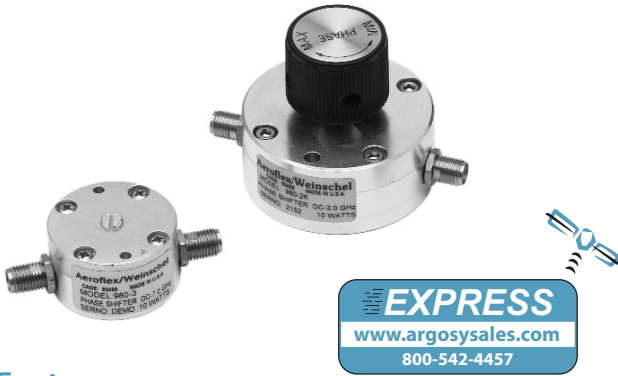


# Mechanical Phase Shifters



## Model 980 Coaxial Phase Shifters SMA Connectors

dc to 3.0/7.0/12.0 GHz  
10 Watts



### Features

- /// **Self Locking** - Internal mechanism eliminates the need for a locking nut. Ideal for phase trimming in densely packaged systems with minimum accessibility.
- /// **Available Express Models** - 980-2, 980-2K, 980-3, 980-4  
Other models may be available for Express Delivery.
- /// **Linear** - Nominally linear phase over the frequency range.
- /// **Optimized for Wireless OEM Applications.**
- /// **New Models with Adjustment Knobs**  
(See Models 980-1K through 980-4K).

### Specifications

**NOMINAL IMPEDANCE:** 50 Ω

#### FREQUENCY RANGE:

Model 980-1 & 980-1K: dc to 3.0 GHz  
 Model 980-2 & 980-2K: dc to 3.0 GHz  
 Model 980-3 & 980-3K: dc to 7.0 GHz  
 Model 980-4 & 980-4K: dc to 12.0 GHz

#### INCREMENTAL PHASE SHIFT (typical):

Model 980-1 & 980-1K: 140° @ 3.0 GHz  
 Model 980-2 & 980-2K: 340° @ 3.0 GHz  
 Model 980-3 & 980-3K: 170° @ 7.0 GHz  
 Model 980-4 & 980-4K: 290° @ 12.0 GHz

Incremental phase shift is adjustable phase range over and above it's insertion phase

**PHASE VS FREQUENCY:** Nominally linear response

#### INSERTION PHASE:

Model 980-1 & 980-1K: 560° (Typical) @ 3.0 GHz  
 Model 980-2 & 980-2K: 780° (Typical) @ 3.0 GHz  
 Model 980-3 & 980-3K: 700° (Typical) @ 7.0 GHz  
 Model 980-4 & 980-4K: 1200° (Typical) @ 12.0 GHz

#### MAXIMUM INSERTION LOSS (dB):

Model No.	Frequency Range (GHz)			
	1.5	3.0	7.0	12.0
980-1 & -1K	0.70 dB	1.20 dB	---	---
980-2 & -2K	1.50 dB	2.00 dB	---	---
980-3 & -3K	0.50 dB	0.50 dB	0.50 dB	---
980-4 & -4K	1.00 dB	1.00 dB	1.00 dB	1.00 dB

#### MAXIMUM SWR:

Frequency Range (GHz)	Model No.			
	980-1/1K	980-2/2K	980-3/3K	980-4/4K
dc - 3	1.30	1.35	1.30	1.30
3 - 7	---	---	1.30	1.30
7 - 12	---	---	---	1.60

**POWER RATING:** 10 watts average

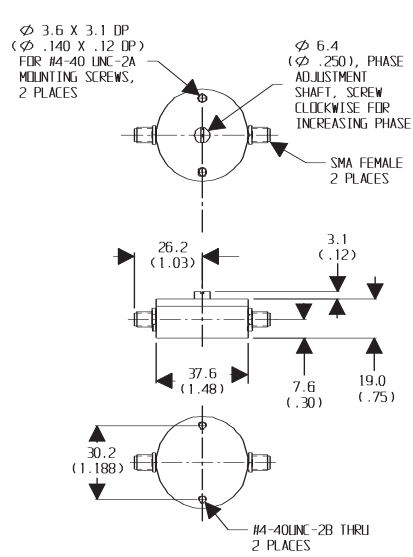
#### TEMPERATURE RANGE:

Operating: -50°C to 85°C  
 Storage: -50°C to 125°C

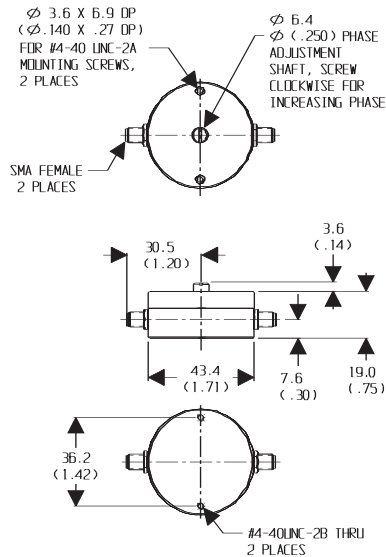
**CONNECTOR:** SMA female connector per MIL-STD-348 interface dimensions - mate nondestructively with MIL-C-39012 connector.

**WEIGHT:** Models 980-1 & 980-2: 65 g (2.29 oz)  
 Models 980-1K & 980-2K: 78 g (2.75 oz)  
 Model 980-3 & 980-4: 35 g (1.24 oz)  
 Model 980-3K & 980-4K: 48 g (1.69 oz)

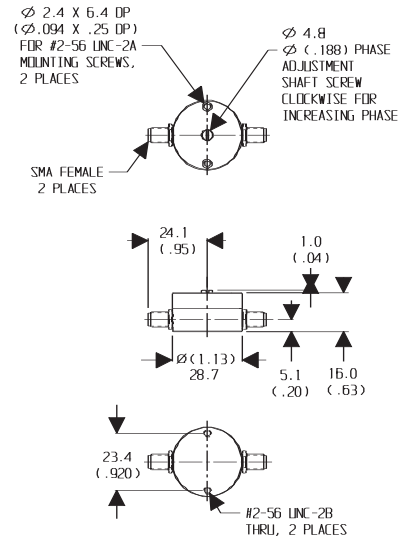
**PHYSICAL DIMENSIONS:**



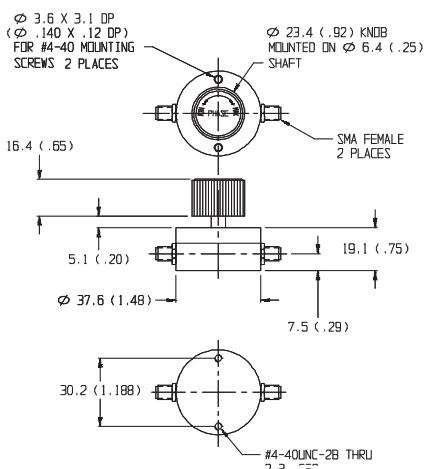
**MODEL 980-1**



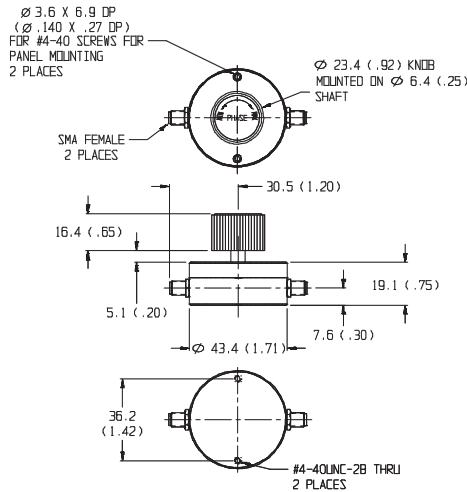
**MODEL 980-2**



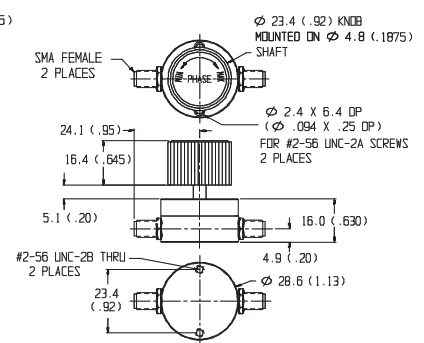
**MODELS 980-3 & 980-4**



**MODEL 980-1K**



**MODEL 980-2K**



**MODEL 980-3K & 980-4K**

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