

## Description

The 8401 Series Butler matrix is a high performance 4x4 Butler matrix, covering several frequency bands from 0.5 to 7.25 GHz. It can transfer the signal reciprocally from any of 4 input ports to any of 4 output ports, with high phase accuracy, amplitude balance, low insertion loss, and high port-to-port isolation.

## Features

- Compact, modular microstrip design and construction
- Good channel condition number

## Applications

- WiFi, WiMAX, 4G/5G LTE Testing, Link Simulation
- MIMO Testing
- Multipath Simulation and Performance Evaluation
- Antenna Array Beam-forming
- Interferometer System Simulation and Testing



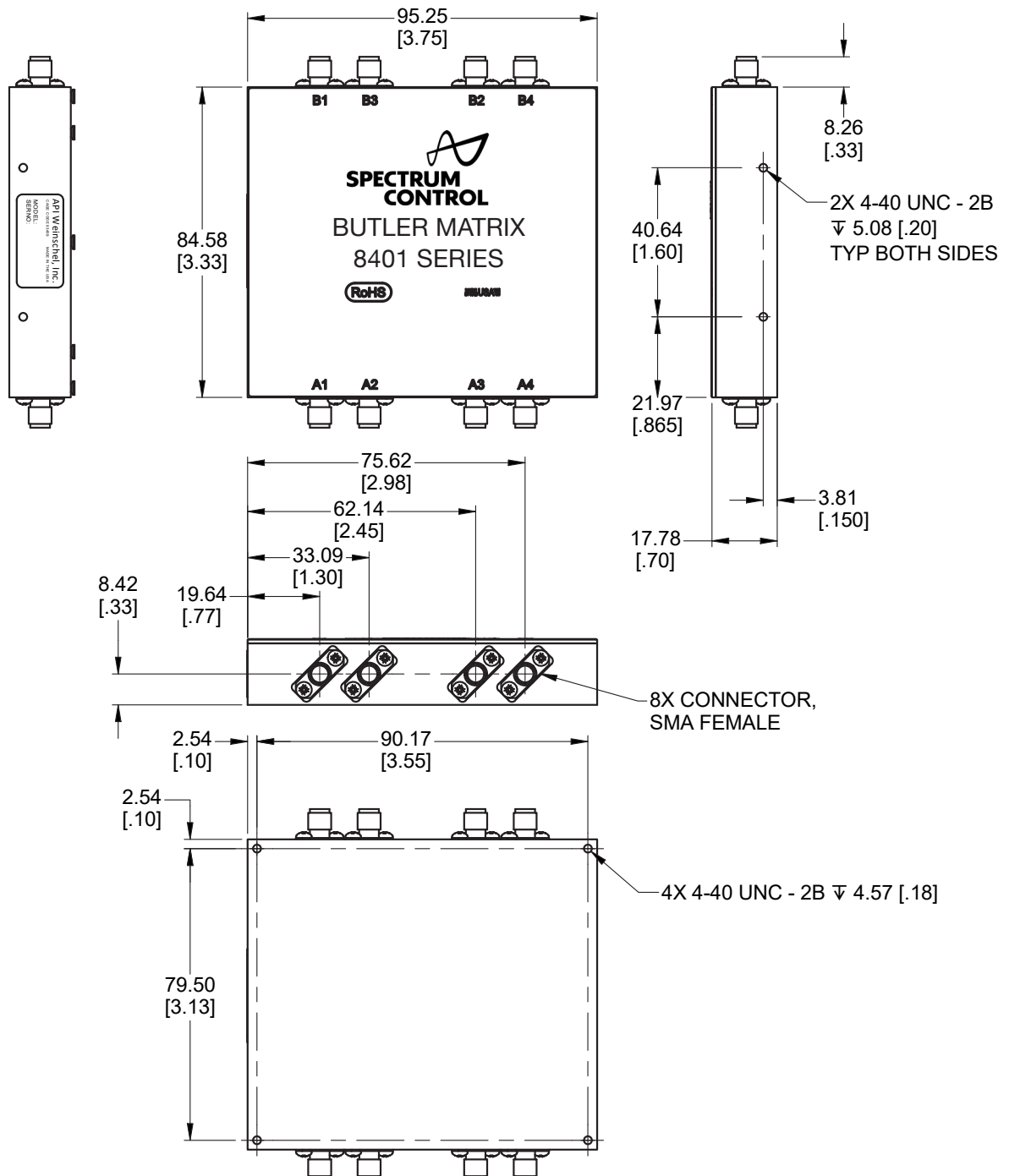
Part Number	Fmin (GHz)	Fmin (GHz)	Insertion Loss (dB)	Max. VSWR	Output Phase Accuracy	RF Input Power (dBm)	Isolation (dB)
8401-6	0.5	2.0	7 typ / 10 max	1.7:1	±10° max at 3.25 GHz	37	25 typ / 16 max
	2.0	6.0	7 typ / 12 max	2.0:1			20 typ / 11 max
8401E	2.4	7.25	8.5 typ / 11 max	2.0:1	±15° max at 6.5 GHz	37	20 typ / 11 max

Impedance	50 Ohms
Connectors	SMA (F) all ports
Weight	~200 gms
Temperature Range, Operating	-20° to +70°C

**Model 8401-6**

*Mechanical Outline*

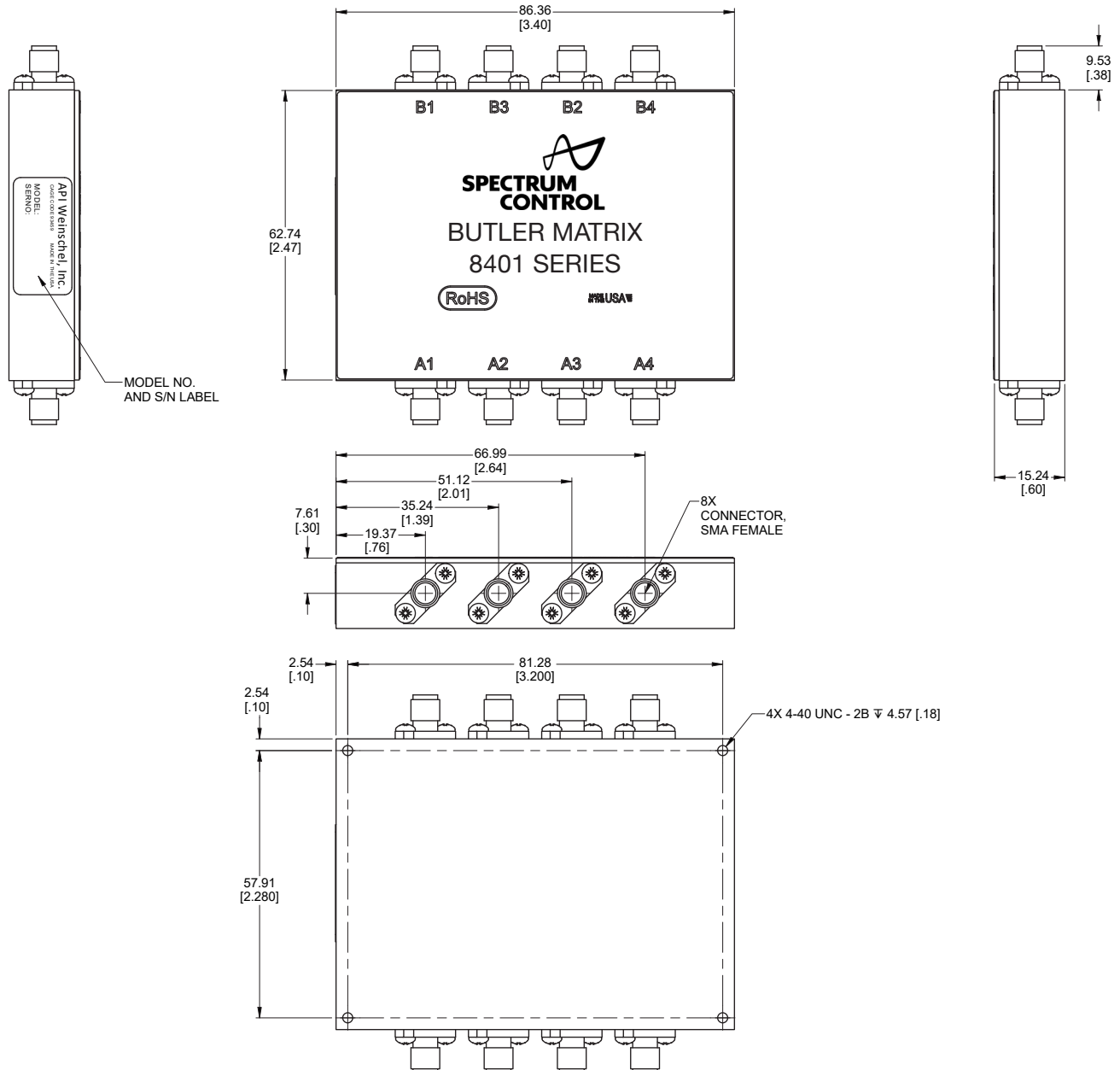
Note: Dimensions are given in mm [inches]



## Model 8401E

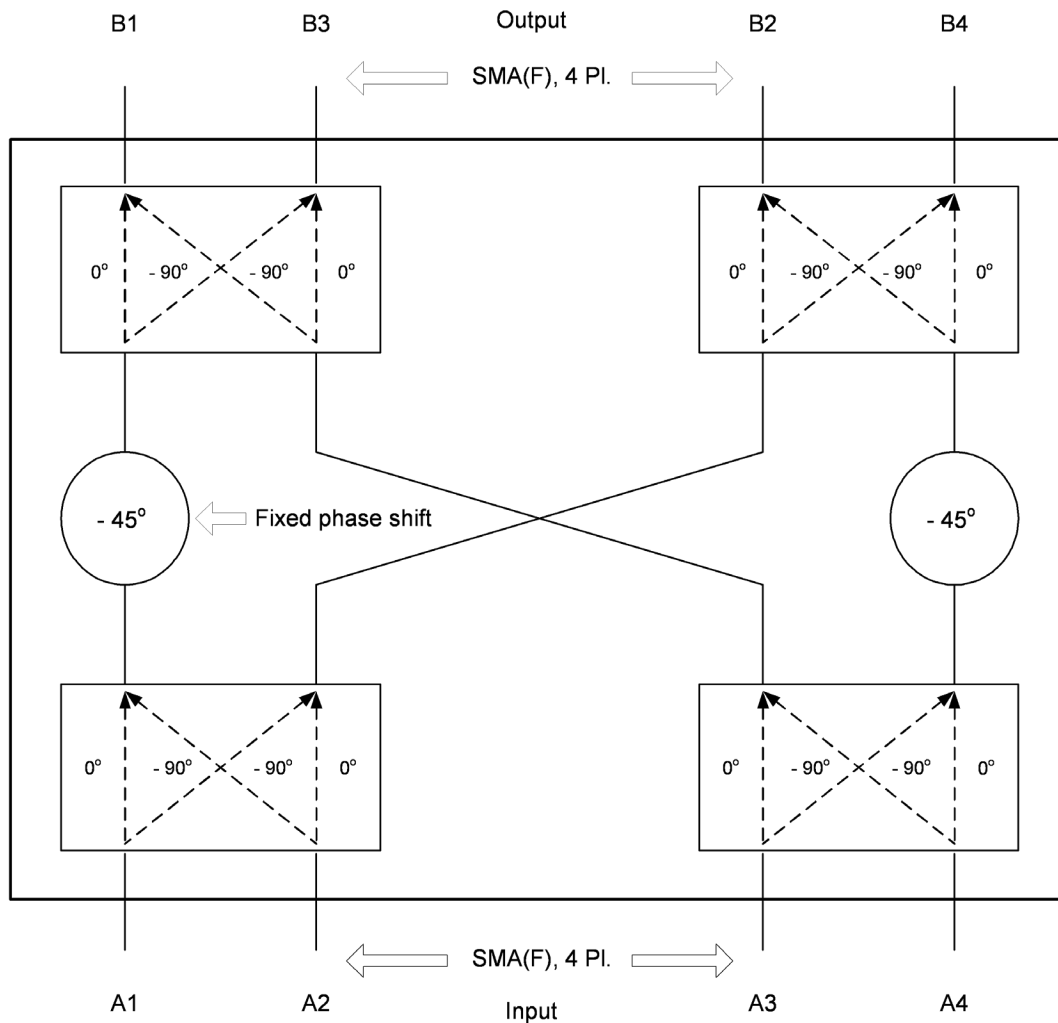
### Mechanical Outline

Note: Dimensions are given in mm [inches]



**Model 8401E & 8401-6**

*Functional Block Diagram*



Input	B1	B3	B2	B4
A1	-45°	-135°	-90°	-180°
A2	-135°	-225°	0°	-90°
A3	-90°	0°	-225°	-135°
A4	-180°	-90°	-135°	-45°

1. Relative Phase Values indicated are measured at the frequency listed in the "Output Phase Accuracy" column in the table, relative to a 0° path.
2. Phase values will vary with frequency and are dependent on the RF path.