

# 7999-6 GPIB RF Relay Unit



## Compact Microwave Matrix

The Model 7999-6 GPIB RF Relay Unit is a compact, low cost microwave switch matrix. The matrix switch is based on a blocking configuration that can be configured with either four inputs and four outputs or six inputs and six outputs. The Model 7999-6 can be controlled through either the GPIB interface or front panel switches. LED status indicators provide a constant visual indication of the instrument's power state, GPIB error status, and relay contact positions. Two switch matrices can be included in a single assembly, making it simple to integrate the Model 7999-6 into high density test racks.

## Relay Life Monitoring

To ensure high reliability over extended use, the Model 7999-6 is engineered with relays with operating lives of five million cycles. The matrix stores the number of times each relay contact has been closed, allowing system maintenance personnel to monitor relay life more accurately and avoid unplanned test system shutdowns. In order to minimize the start-up testing and troubleshooting time required, the Model 7999-6 allows users to control the relays manually through its front panel controls.

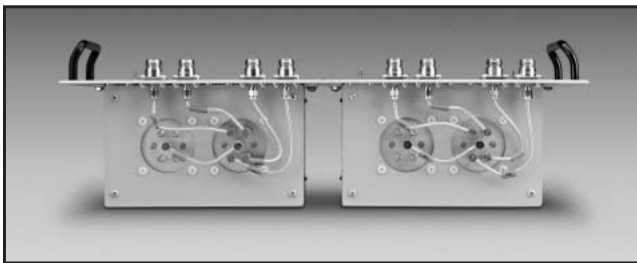
- 4in/4out or 6in/6out blocking matrix configuration
- 4GHz bandwidth
- Long life relays
- LED relay contact status indicators
- Contact closure counters
- Manual operation

## ORDERING INFORMATION

7999-6/1	Single Matrix Assembly without Relays
7999-6/2	Dual Matrix Assembly without Relays
7999-6/1/2R	Single Matrix Assembly with Relays
7999-6/2/4R	Dual Matrix Assembly with Relays
Accessories Supplied: Instruction manual	



Rear view of the Model 7999-6/2/4R dual matrix assembly with relays.



This bottom view of the Model 7999-6/2/4R shows its two matrix assemblies with relays.

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## Relay Specifications

### CONNECTOR TYPE:

**Input:** Female SMA connector (on relay).  
**Output:** N-type.

**CONTACT LIFE:**  $5 \times 10^6$  cycles minimum;  $10 \times 10^6$  typical.

**ACTUATION TIME:** 15ms.

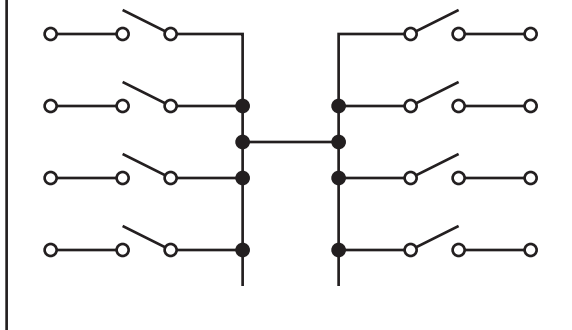
**FREQUENCY RANGE:** DC to 4GHz. Relay paths are 50Ω terminated when open.

**INSERTION LOSS:** 0.3dB + 0.115 × frequency (in GHz).

**ISOLATION:** 100dB minimum; 130dB typical.

**SWR:** 1.2 maximum.

### Simplified Schematic



### GENERAL

**INTERFACE:** GPIB (IEEE-488.2) and SCPI.

**INDICATORS:** Power, relay position status and error LED.

**CONTACT CLOSURE COUNTERS:** One counter per relay path, up to 10 million counts each, maintained in non-volatile memory.

**MAXIMUM COMMON MODE:** 42V peak, any terminal to earth.

**MAXIMUM SWITCHING SIGNAL:** 1W CW, CAT I.

**POWER:** User-supplied 24VDC (22VDC min., 30VDC max.), 1.8A max.

**ENVIRONMENT: Operating:** 0° to 40°C, up to 35°C <80% RH.

**Storage:** -25° to 65°C.

**EMC:** Conforms with European Union Directive 89/336/EEC.

**SAFETY:** Conforms with European Union Directive 73/23/EEC.

**DIMENSIONS:** 429mm long × 133mm wide × 161mm deep (19.00" × 5.25" × 6.34").

Specifications are subject to change without notice.

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