Programmable Delay Line   8001 | SMA

- Custom programmable delay
- DC to 18.0 GHz
- Phase shift RF/Microwave signals
- Precise, repeatable, and accurate delay
- Custom total delay (max. 200.0 ns) and step size (min. 10.0 ps)
- Control Interface: GPIB (IEEE 488.2), Ethernet TCP/IP, and RS-232

Specifications

Resolution (Step Size) [ps]:
 10 ps (min.)
 Specified by customer
Delay Range [ns]:
 200 ns (max.)
 Specified by customer
Sections:
 Up to 16x binary steps (16 sections)
 Steps are binary multiple of smallest step
 size, e.g. 1x, 2x, 4x, 8x, 16x, 32x etc.
Power Handling:
 Average (CW):   10 Watts
 Peak: 50 Watts
Operating Temperature:
 +10 °C to +30 °C
Control:
 Ethernet (TCP/IP), GPIB (IEEE 488.2),
  and RS-232
Settling time:
 50 ms (max.)
Weight (min.):
 8.8 Lbs (4.0 kg.)
Physical:
 13 ¾″ L x 12 7/8″ W x 5 ¼″ H

Application

Anywhere you need to apply a delay or phase shift without affecting the RF application signal under test:

- Satellite and GPS Satellite simulation testing
- Phase Array Radar and Antenna Testing
- Synchronization and timing of clock sources
- Clock synchronization in BERT machines for eye pattern generation
- Timing and shaping of laser pulses
- Phase Shifters (e.g. noise cancellation loops, phase comparators, and precise phase shift for quadrature lock in phase noise analyzers)
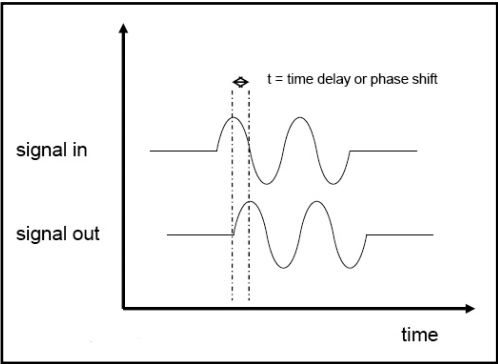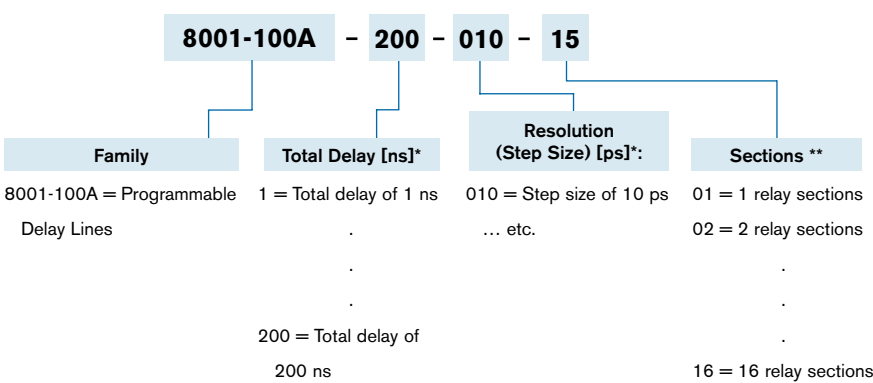
Description

The 8001-100A Programmable Delay Line offers a range of variable programmable delays that is specified by the customer for RF/microwave signal applications. The delay line can be custom tailored to 200.0 ns maximum in total delay with a minimum step size starting at 10.0 ps. The 8001-100A Series is the finest custom programmable delay line instrument available in the marketplace, with a wideband signal frequency input from DC to 18 GHz.

All signal input and output connections are easily accessible on the front panel and are terminated with female SMA (50 Ohm impedance) connectors.

The 8001-100A Series Instruments are programmable and can be controlled through GPIB (IEEE 488.2), Ethernet TCP/IP, and RS-232 (Serial) interfaces.

Part Number Selector

8001-100A – 200 – 010 – 15

Family	Total Delay [ns]*	Resolution (Step Size) [ps]*:	Sections **
8001-100A = Programmable Delay Lines	1 = Total delay of 1 ns	010 = Step size of 10 ps	01 = 1 relay sections
	.	… etc.	02 = 2 relay sections
	.		.
	.		.
	200 = Total delay of 200 ns		.
			16 = 16 relay sections

*Specified by customer in 16x sections or less.

** Number of relay sections [n] depends on the specified value of Total Delay and Step Size and needs to be calculated. It is limited to maximum of 16 sections. Consult with factory or use formula:

$$n = \log_2\left(\frac{total\ delay\ in\ ps}{step\ size\ in\ ps}\right) + 1$$ (round down the given value to nearest integer)