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Colby Instruments

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SPECIFICATIONS OF ELECTRO-MECHANICAL DELAY LINES
Models PDL-10A/PDL-30A/CPDL

Parameters of Delay Lines	Model PDL-10A Dual Channel	Model PDL-10A Series Connected	Model PDL-30A Full Line 10 ns
DelayRange/Resolution	312.5 ps/0.25 ps	625 ps/0.5 ps	10 ns/0.5 ps
Phase Shift/Resolution per 1 GHz	112.5 deg/0.09 deg	225 deg/0.18 deg	3600 deg/0.18 deg
Frequency Range	DC-18 GHz (-2dB)	DC to 18 GHz	DC to 2 GHz
Digital Data Range	DC-40 Gb/s NRZ	DC-36 Gb/s NRZ	DC-5 Gb/s NRZ
Insertion Loss [1]	0.2dB+0.1dB xf[GHz]	0.4 dB + 0.2dB x f [GHz] **to 13GHz**, -3db **for 13 to 18 GHz**	3 dB + 0.8 dB x f [GHz] **to 5 GHz**
Return Loss [1]	18dB to 2 GHz 10dB to 8 GHz 6dB to 18 GHz	14dB to 4 GHz 9dB to 8 GHz 4dB to 18 GHz	15dB to 1 GHz 10dB to 3 GHz 8dB to 5 GHz
Absolute accuracy, typical	0.1%, ±0.2 ps	0.1%, ±0.2 ps	0.1%, ±5 ps
Repeatability, typical	0.1 ps [3]	0.1 ps [3]	1 ps to 10 ns
Delay at 0 ns Setting	1.60 ns	3.30 ns	7.90 n s
Power Handling	10W CW, 50W peak	10W CW, 50W peak	10W CW, 50W peak
Rated Lifetime [4]	500,000 operations	500,000 operations	400,000 operations

Models PDL-10A/PDL-30A/CPDL

[1] Customer receives Actual Measured Insertion and Return Loss Data for range of different Delay Settings

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for each device manufactured.

[2] Repeatability is 0.2 ps when moving in the *same* direction; 0.4 ps when moving in either direction.

[3] Repeatability is specified at constant temperature.

[4] Rated Lifetime is specified for Max. Switching Current of 100mA. Higher currents may be switched but Rated Lifetime will be less.

Maximum Settling Time of Trombone Unit inside the Models **PDL-10A** and **PDL-30A** is 1 s.

Maximum Settling Time for Model **CPDL** is 50 ms.

Physical Size for all Programmable Delay Lines is 13 3/8" Long x 12 7/8" Wide x 5 1/4" High.

Approximate Weight: PDL-10A: 14.3 lbs.; PDL-30A: 16.1 lbs.; CPDL: 8.8 lbs. and up;

Line Voltage for all Delay Lines is: 85-102 V, or 110-122 V, or 215-245V; 50/60 Hz.
Power Requirement: PDL-10A: 80 VA; PDL-30A: 120 VA; CPDL: 30 VA and up.
Recommended Operating Temperature Range for all Delay Lines is 10ºC to 30º C.

MT-1A Microterminal is required for Manual Control of the delay for above models.

19" Rackmount Option (RMO) is available for all of our Programmable Delay Lines.

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