

XS-100

Programmable Delay Modules Instrument



The XS-100 is designed for those who need faster switching speeds and measurements without interruptions

Recommended when you need faster switching speeds within a limited bandwidth and signal power range

Overview

The key hallmark of the XS-100 is its use of solid-state PIN diode technology. Although this results in a smaller total range and coarser resolution than Colby products in the XT and XR series, the XS-100 gives faster switching speeds that's limited only by the speed of your network and can be under 250 ms. The faster switching speeds and a continuous signal path mean you can measure without interruptions, and all at a lower cost.

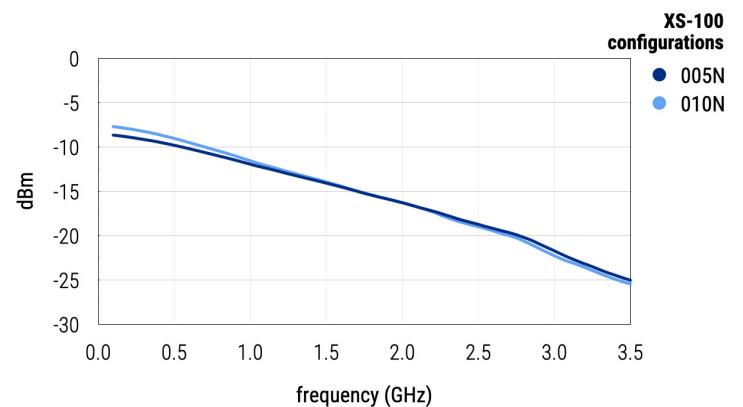
Features/Benefits

- The only product line that uses solid-state PIN diode technology
- Total delay range up to 10.23 ns
- Step resolution as small as 1.0 ps
- Switching speed less than 250ms, depending on network speed

Typical Performance/Insertion Loss

An insertion (S21) and return loss (S11) report is generated for each instrument at time of manufacture^[1].

Typical insertion loss for all XS-100 configurations at max delay



Options

MT-100A Microterminal (LCD panel and numeric keypad) offers manual entry of desired delay.



[1] Customer receives actual measured insertion (S21) and return loss (S11) data report for each device manufactured.

Colby Product Comparison Chart

XT SERIES

Our most precise programmable delay line instruments using Colby's patented trombone technology.

XR SERIES

Featuring a selection of common step sizes that gives you the broadest signal delay range among all our products.

XS SERIES

Our XS series utilizes solid-state PIN diode technology to give you the fastest switching speeds within a limited signal bandwidth.

	XT-100	XT-200	XR-100	XS-100
Technology Type	Trombone, Trombone + Relay	Trombone	Relays	Solid state PIN diodes
Number of Channels	1	2	1	1
Signal Input Range	0 - 18 GHz	0 - 18 GHz	0 - 18 GHz	100 mhz to 3.5 GHz
Min. Step Resolution	0.25 ps	0.25 ps	5 ps, 10 ps, or 1 ns	1 ps or 5 ps
Max Delay Range	625 ps, 2.50 ns, 5.00 ns, 10.0 ns, 20.0 ns, 50.0 ns, 80.0 ns, 100.0 ns	312.5, 625.0 ps per channel	up to 50.95 ns, 101.91 ns, or 200.0 ns	5.12 ns or 10.23 ns
Phase Shift Step Resolution	0.18 ° per 1 GHz	0.18 ° per 1 GHz	1.8° , 3.60°, and 360° per 1 GHz	9 ° per 1 GHz
Total Phase Shift at 1 GHz	225°, 900°, 1800°, 3600°, 7200°, 18000°, 28800°, 36000°	112.5°, 225°		1842 ° or 3686 °
Total Phase Shift at 5 GHz	1125°, 4500°, 9000°, 18000°, 36000°, 90000°, 144000°, 180000°	562.5°, 1125°		n/a
Switching Speed*	250 ms - 6500 ms	250 ms - 6500 ms	< 100 ms	< 50 ms
Ext. Trigger	no	no	yes	yes
Ethernet TCP/IP	yes	yes	yes	yes
Serial RS-232	yes	yes	yes	yes
Web Browser UI	yes	yes	yes	yes
Microvave Relay Rated	5m MTBF	n/a	5m MTBF	n/a
Recommended Service Interval	500,000 operations or 1 year [2][3]	500,000 operations or 1 year [2][3]	1 year	n/a
Min. frequency for 360° phase shift coverage	1.6 GHz, 400 MHz, 200 MHz, 100 MHz, 50 MHz, 20 MHz, 12.5 MHz, 10 MHZ	3.2 GHz, 1.6 GHz	1/4	
Dimensions	12" L x 16 3/4" W x 3 1/2" H (2U)	12" L x 16 3/4" W x 3 1/2" H (2U)	12" L x 16 3/4" W x 3 1/2" H (2U)	12.0" L x 16.5" W x 1.75" H (1U)
Weight	4.1 kg (9.0 lbs.) to 5.0 kg (11 lbs.)	5.4 kg (12 lbs.)	5.6 kg (12.5 lbs.) to 6.1 kg (13.5 lbs.)	2.7 kg (6.0 lbs.)

* depending on network latency

[2] Rated lifetime is specified for maximum switching current of 100 ma. Higher currents for increased power handling can be switched (up to 100W CW max.), but the rated lifetime will be lower.

[3] All connection interfaces should be inspected/serviced to ensure instrument is operating at its published performance specifications.