



Innovator In Spectroscopy Equipment

# NSDB2019



## NANO SECOND DELYA BOX MODEL NSDB2019

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CATALOG



NIM MODULES



FREE DOWNLOAD

## NANO SECOND DELYA BOX MODEL NSDB2019

### Features

- High stability
- 0.5ns resolution
- 0 to 63.5ns delay range
- Switch controlled time delays
- Low reflections and feed-through
- Control and time experiments quickly and easily
- Being robust and suitable for use in challenging conditions
- Splash resistant design
- Wide operational temperature range
- Ultra reliable industry standard design

### LOW REFLECTIONS AND FEED-THROUGH



## Description

The CFD2017 from Control Farayand Pasargad (CFP) coax delay box provides switch-controlled delays from 0 to 63.5ns with 0.5ns resolution. Applications include the timing of photomultiplier coincidences, set-up of time-to-amplitude converters, adjustment of signal phase, or any application which requires an adjustable, high-bandwidth analog delay. The interchangeable inputs/outputs are on BNC connectors. Internally, the delay line segments consist of accurate lengths of RG58A/U coax cable with 50Ω characteristic impedance. DPDT switches are used to insert or remove delay segments. Careful component selection, mechanical design, and PCB layout ensure low reflections and low switch feed-through for high speed signals.

## Specifications

### Input(s)

Signal input

Accepts positive or negative slow/fast NIM logic or linear pulses,  $\pm 700$  volts maximum;  $Z_{in} = 50\Omega$ ; isolated front panel BNC connector

### Output(s)

Signal output

Provides delayed pulse, amount of delay being equal to sum of DELAY IN switches;  $Z_{out} = 50\Omega$ ; isolated front panel BNC connector

### Control(s)

Delay IN/OUT

Seven Front panel toggle switches to select delay of 0.5, 1, 2, 4, 8, 16 or 32ns; maybe added in any combination up to 63.5ns beyond minimum delay of 2.5ns

### Indicator(s)

No indicator

### Performance

Connectors

BNC

Characteristic Impedance

50Ω

Delay line cable

RG58A/U (Belden 8259)

Insertion delay

2.5ns

Delay range

0 to 63.5ns

Delay resolution

0.5ns

Delay accuracy

$\pm 100$ ps or  $\pm 1\%$  for each delay section used

Delay error

$< 100$ ps + 0.5 % of delay

Signal reflection

$< 3\%$

Switch feed through

$< 0.8$ pF

Maximum voltage

250 Vrms

Maximum current

2A

## Application

- Spectrometry
- Radiation detection
- Scientific
- General laboratory usage
- use in neutron-gamma, ... separation at CFD method
- Device calibration
- Components testing



## Electrical and Mechanical





Unit: NSDB2019	
Version type	NSDB2019
Electrical	
Power required	No power required for operation
Physical	
Dimensions	227mm x 37mm x 212mm (L x W x H)
Weight	1.1kg
Mechanical	
Environmental	
Storage temperature	- 40°C to + 85°C
Operating temperature	0°C to +50°C
Relative humidity	< 80%

## Software and user interface

The device doesn't have any software






## Ordering info

### NSDB2019 Standard package includes

Part #	Image	Description
NSDB2019 main		Nano second delay box desktop
ACCE2019001		CD user guide (1 Pack)
ACCE2019002		Box with foam insert
ACCE2019003*		Guaranty (one year)

\* =we stand behind our products. We guarantee your satisfaction in the quality of our instruments by providing a complete one-year warranty covering any defect of workmanship, material, and/or design. If our products do not perform, we will provide complete repair and/or replacement. for guaranty conditions, please refer to manual device (NSDB2019 - Manual)

### Optional accessories and services

Part #	Image	Description
ACCE2019004		Installation
ACCE2019005		Training
ACCE2019006**		Re-calibration (interval) services. 1year factory maintenance suggested, not required
ACCE2019011		BNC terminator 50Ω
ACCE2019012		RG58A/U, 50Ω cable with two BNC male plugs

\*\* = The proper maintenance & calibration of your instruments is critical to ensure proper performance & accuracy. for Re-calibration (interval) services, please call with CFP company (021- 4604538)





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