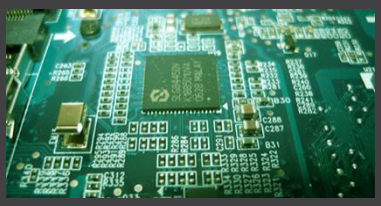
Innovator In Spectroscopy Equipment

DLA2031



DELAY LINE AMPLIFIER
MODEL DLA2031

www.cfp.co.ir

CATALOG

NIM MODULES

FREE DOWNLOAD

DELAY LINE AMPLIFIER
MODEL DLA2031

Features

- Differential input
- Super fine gain control
- Excellent overload recovery
- Optimum timing capabilities
- Gaussian/triangular shaping
- Selectable integration time constants
- Ideal for neutron–gamma discrimination
- Excellent high counting rate performance
- Delay line shaping for energy and time spectroscopy
- High stability
- Splash resistant design
- Compact single width NIM
- Excellent temperature stability
- Wide operational temperature range
- Ultra reliable industry standard design
- Being robust and suitable for use in challenging conditions

OPTIMUM TIMING CAPABILITIES &EXCELLENT HIGH COUNTING RATE PERFORMANCE

Description

The DLA2031 from Control Farayand Pasargad (CFP) is intended for energy and time spectroscopy with scintillation detectors. It can also be used with proportional counters, semi-conductor detectors, and position-sensitive proportional counters. Its delay line shaped output signal is particularly well suited for high counting rate and timing applications. This particular type of output signal offers a more rapid baseline recovery than is possible with semi gaussian shaping amplifiers. The model DLA2031 provides excellent timing capabilities, either for leading-edge or zero crossing timing techniques, particularly when it is used with a CFP model 2028 timing single channel analyzer. Double delay-line shaping exhibits less timing jitter when compared with either the classical RC-shaping network or active filter networks, primarily due to the fast rise time and fall time of the double-delay-line shaped output pulse.

Specifications

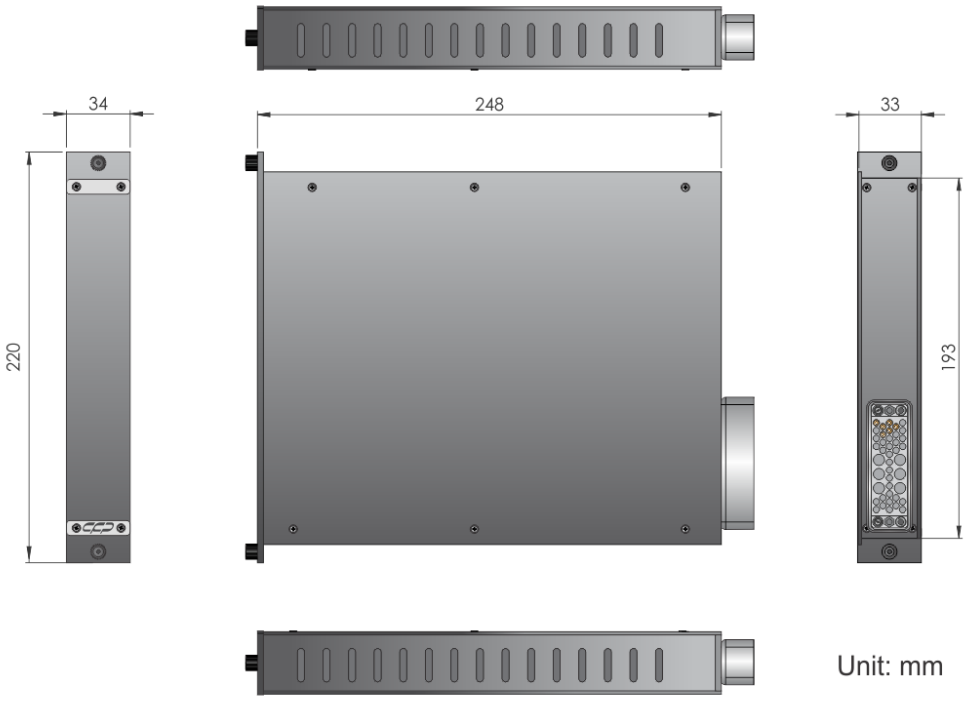
Input(s)
Input power
DLA2031 powered from a standard NIM bin and power supply
INPUT
BNC connector on front-panel accepts either positive or negative inputs with rise time of 10 to 1000ns and decay time of 25 to 2000μs; Zin @1000 W, dc-coupled; linear maximum 3.3V; absolute maximum 20V.
Output(s)
OUTPUT(UNIPOLAR)
Prompt or delayed with full-scale linear range from 0 to +10V; single-delay-line shaped; baseline restored level adjustable to ±1V; Zo < 1W, dc-coupled through front-panel BNC connector; Zo = 93W, dc-coupled through rear-panel BNC connector. Short-circuit protected.
OUTPUT(BIPOLAR)
Prompt output with positive lobe leading, double-delay-line shaped with full-scale linear range of 0 to 10V; Zo < 1W, dc-coupled through front-panel BNC connector; Zo = 93W, dc-coupled through rear-panel BNC connector. Short-circuit protected.
PREAMP OUT
rear-panel standard CFP power connector for mating preamplifier.
Control(s)
FINE GAIN
Front-panel single-turn potentiometer for continuously variable gain factor of X0.3 to X1
COARSE GAIN
Front-panel seven-position switch selects gain factors of X10, 20, 50, 100, 200, 500, and 1000.
INTEG
Front-panel slide switch selects an integration time constant of 0.04, 0.1, or 0.25μs. For 0.04μs setting amplifier rise time is <75 ns.
PZ ADJ
Front-panel potentiometer adjusts pole-zero cancellation for decay times from 25μs to ∞ .
POS/NEG
Front-panel slide switch sets input circuit for either input polarity.
DC ADJ
Front-panel potentiometer adjusts the dc-level for single-delay-line shaped unipolar output pulses.
DELAY IN/OUT
Rear-panel slide switch selects either delayed (In) or prompt (Out) timing for unipolar output pulses. Delay is equal to the width of the unipolar output pulse.
Indicator(s)
No indicator
Performance
Gain range
7-position coarse gain selection from 10 through 1000 and single turn fine gain control from 0.3 through 1; total gain is the product of course and fine gain settings.
Shaping filter
Front-panel switch permits selection of integration time constant with τ = 0.04, 0.1, or 0.25μs (40, 100, or 250ns).
Integral nonlinearity
≤±0.05%
Noise
≤ 20μV rms referred to input using 0.25μs integrate and maximum gain of 1000; ≤ 25μV for gain = 50; ≤ 60μV for gain = 10
Crossover walk
For constant gain, walk < ±1ns for 20:1 dynamic range; < ±2ns for 50:1; < ±2.5ns for 100:1. Crossover shifts < ±4ns for any adjacent coarse gain switch settings.
Count rate stability
A pulser peak at 85% of analyzer range shifts < 0.2% in the presence of 0 to 105 random counts/s from a Cs-137 source with its peak stored at 75% of the analyzer range.
Overload recovery
Bipolar recovers to within 2% of rated maximum output in <5 non-overloaded pulse widths from X500 overload; unipolar recovers in same time from X100 overload.
Delay line shaping
1µs. both delay lines have the same value.

Temperature instability gain
Gain: ±0.01%/°C, 0 to 50°C
DC Level: ≤±0.1mV/°C, 0 to 50°C.

Application

- BIT (built-in test)
- Gamma-Gamma coincidence
- Pulse —height spectroscopy
- Also be used in simple pulse —counting
- Pulse —amplitude (energy) spectroscopy
- Scientific
- Radar receivers
- General laboratory usage
- Magnify the amplitude of the preamplifier output pulse

Electrical and Mechanical

Unit: DLA2031						
Version type	NPHV2039-PRO	NPHV2039A-PRO	NPHV2039B-PRO	NPHV2039C-PRO	NPHV2039D-PRO	NPHV2039E-PRO
Electrical						
Power required	Its power from a NIM bin power supply. Required dc voltages and currents are +24V, 90mA; –24V, 90mA; +12V, 85mA and –12V, 75mA.					
Physical						
Dimensions (L x W x H)	220mm x 34mm x 248mm (L x W x H)					
Weight	1.216kg					
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

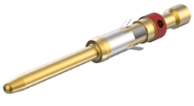
Ordering info

DLA2031 Standard package includes

Part #	Image	Description
DLA2031 main		Delay line amplifier model DLA2031
ACCE2031001		CD user guide (1 Pack)
ACCE2031002		Box with foam insert
ACCE2031003*		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 (DLA2031- Manual)

Optional accessories and services

Part #	Image	Description
ACCE2031004		Installation
ACCE2031005		Training
ACCE2031006**		Re-calibration (interval) services. 1year factory maintenance suggested, not required
ACCE2031011		BNC terminator 50 Ω
ACCE2031012		RG58A/U, 50 Ω cable with two BNC male plugs
ACCE2031013		Conn housing plug 50POS AMP connectors
ACCE2031014		Conn pin hood int 50pos panel MT
ACCE2031015		Guide pin 4-40
ACCE2031016		TE connectivity AMP connectors multimate, type II series pin
ACCE2031017		Bin guide pin

ACCE2031018		Guide socket

** = 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)

Innovator in Spectroscopy Equipment

Unit 10, No 64,Vahedi
(7)St, After Punak Sq,
Ashrafi Esfahani Expy,
Tehran, Iran

+98 (21) 46045383

www.cfp.co.ir