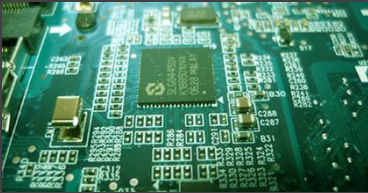




Innovator In Spectroscopy Equipment

ZCPSD2027



**ZERO CROSS PULSE
SHAPE DISCRIMINATORY
MODEL ZCPSD2027**

www.cfp.co.ir



CATALOG



NIM MODULES



FREE DOWNLOAD

ZERO CROSS PULSE SHAPE DISCRIMINATORY

MODEL ZCPSD2027

Features

- Particle separation for scintillators detectors (NE213, BC501, BC505, . . .)
- Neutron-Gamma Separation
- Alpha-Proton Separation
- Electron-Alpha Separation
- Electron-Alpha-Gamma Separation
- 500: 1 dynamic range
- Z-identification for thick surface-barrier detectors
- Needs anode signal only
- Particle identification with proportional counters and Phoswitch detectors
- Count rate capability over 50KHz- with pile up rejection > 500KHz
- Multicolor Count Rate Indicator
- Full DC coupling
- Full adjustable module

Full adjustable module
500: 1 dynamic range



scintillation counters. However, the applications are not limited to n-g separation, the 2027 can also be used for particle separation with inorganic scintillators, phoswiches, thick SSB detectors and proportional counters. The Model has a dc-coupled 50 ohm input which accepts negative pulses. The dc coupling allows high statistical count rate without affecting resolution, a major problem of conventional designs. The single width module is easy to use, since only the anode signal is required from PM tubes.

The ZCPSD2027 can be used to generate identification spectra with a TAC2038 and MCA or an identification signal for one species of particle (see application diagrams).

Four simultaneous, independent output signals are provided. The two positive outputs are adjustable in width; the width duration sets the internal dead time required to suppress spurious outputs due to input signal anomalies. The two negative outputs are fixed-width pulses keyed to the start of the dead time period. The front panel CROSS OVER permits the user to trim the zero cross time characteristics of the experimental setup for optimum timing resolution. A novel front panel LED indicates count rate by color change.

Specifications

Inputs

Input

Accepts -5mV to -5V linear pulses: $Z_{in} = 50$ Ohms, dc coupled; 2 front panel BNC connectors.

Strobe Input

50-ohm Negative FAST-NIM signal from CFD2017, front panel BNC connector.

Outputs

Inspect

Displays signal of zero crossing discriminator for use in trimming time characteristics.

Outputs (-)

Two independent negative current outputs, each providing -32mA into 50 Ohm; rise time < 3 ns, pulse width 5 ns nominal, dc coupled.

Outputs (+)

Two independent positive voltage outputs providing 2 V into 50 Ohm, rise time < 5 ns, width adjustable by adjacent width trimming potentiometer, which also determines internal dead time.

Clip Cable (Rear Panel)

2 BNC connectors accept 50 Ohm delay cable to adjust width of the negative output pulses: controlled by adjacent IN-EXT switch.

Controls

Strobe Delay

Front panel 10-turn locking dial potentiometer to set strobe of Zero Crossover discriminator acceptance.

Adjust

Front panel trim pot to adjusting time characteristics

Output Width

Front panel 10-turn screwdriver adjustable potentiometer to set width of slow positive output pulse, which is equal to the internal dead time of the discriminator.

Min setting

500nsec.

N—N+G

Toggle switch allows use of N and N+G.

Position N

generates an identification signal

Position N+G

generates identification spectrum

IN—EXT (Rear Panel)

Toggle switch allows use of external cable to widen negative outputs.

Performance

Dynamic Range

500:1

Walk

<2n (typically 1.5n) for 30mV to -3V range with <2nsec rise time.

Counting Rate

up to 500 KHz, limited by dead time (OUTPUT WIDTH setting)

Application

- Neutron detection
- Medical diagnostics
- Nuclear and Particle Physics
- Spectroscopic Imaging for Homeland Security
- X-ray and Gamma Spectroscopy with Silicon detectors
- Convert the ultra-violet of the discharge into visible light.
- Segmented detectors, Medical Imaging, Material science
- This output was used as the source of linear signals though.
- Screens in older style CRT computer monitors and television sets.
- Detectors are also used in the petroleum industry as detectors for Gamma Ray logs.
- Used for detecting and measuring radioactive contamination and monitoring nuclear material.
- It can also be used in particle detectors, new energy resource exploration, X-ray security, nuclear cameras, computed tomography and gas exploration

Electrical and Mechanical

Unit: TSCA2028

Electrical

Power required	Its power from a NIM bin power supply. Required dc voltages and currents are +24V, 90mA; -24 V, 50mA; +12V, 110mA and -12V, 160mA.
----------------	--

Physical

Dimensions (L x W x H)	220mm x 34mm x 248mm (L x W x H)
Net Weight	1.08kg
Box Weight	1.270kg

Mechanical			
	Unit: mm		

Environmental

Storage temperature	- 10°C to + 50°C
Operating temperature	0°C to +50°C
Relative humidity	< 80%

Software

The device doesn't have any software


Ordering info



Standard package includes

Part #	Image	Description
ZCPSD2027		ZERO CROSS PULSE SHAPE DISCRIMINATORY
ACCE2028001		CD user guide (1 Pack)
ACCE2028002		Box with foam insert
ACCE2028003*		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 (TSCA2028 - Manual)

Optional accessories and services

Part #	Image	Description
ACCE2028004		Installation
ACCE2028005		Training
ACCE2319006**		Re-Calibration (interval) services. 1year factory maintenance suggested, not required
ACCE2418011		BNC terminator 50 Ω
ACCE2418012		RG58A/U, 50 Ω cable with two BNC male plugs
ACCE2418013		RG59, 50 Ω cable with two SHV male plugs
ACCE2418014		Conn housing plug 50POS AMP connectors
ACCE2418015		Conn pin hood int 50pos panel MT
ACCE2418016		Guide pin 4-40
ACCE2418017		TE connectivity AMP connectors MultiMate, type II series pin

ACCE2418018		Bin guide pin
ACCE2418019		Guide socket

** = The proper maintenance & calibration of your instruments is critical to ensure proper performance & accuracy. For Re-calibration (interval) services, please call CFP company (021- 46045383).



Innovator in Spectroscopy Equipment



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



+98 (21) 46045383

w w w . c f p . c o . i r