

S E C T I O N I

G E N E R A L

The STD-N-1 is an advanced unit for time discrimination whose purpose is to determine with greatest accuracy the timing of specific nuclear events. The unit is specially built to be used in connection with a wide range of detectors: solid state detectors such as Ge(Li), Si(Li), proportional counters and photomultipliers with plastic or crystal scintillators such as NE-102A, NATON-136 or Na(Tl).

The STD-N-1 Snap-off Timing Discriminator preserves the advantages of the Constant Fraction Discriminator, compensating for walk. But, due to the ELSCINT Snap-off technique, it also reduces the errors due to jitter to a minimum, averaging the fluctuations cause by the noise. The Snap-off Timing Discriminator is also less subject to gain drift than the Constant Discriminator (as will be shown later).

The instrument is very simple to use and normally needs no adjustments. It is well suited for use in Nuclear Physics and related fields.

S E C T I O N I I

S P E C I F I C A T I O N S

INPUT

Polarity : Accepts positive or negative pulses.
Sensitivity : 1 mV for fast pulse at max. gain.
Max. Input : 10V.
Impedance : 50 Ω , AC coupled.
Min. Pulse Width : 1 nsec, at FWHM for > 3 mV input;
3 nsec, at FWHM for 1 mV input.
Connectors : BNC, one for positive; one for negative.

OUTPUT

Negative Logic : -16 mA, NIM standard.
Impedance : 1000 Ω .
Risetime : 1 nsec or less.
Width : 10 nsec.
Protection : Short Circuit.
Connectors : 2 BNC's.

Positive Logic

Impedance : 10 Ω .
Risetime : 25 nsec.
Width : 0.5 μ sec.
Protection : Short Circuit.
Connector : BNC.
Amplitude : 0 to +4V (TTL/DTL compatible).

DELAY

: 3 nsec.
60 cm coax cable delay-line connected between
2 rear-panel BNC connector sockets.
For large Ge(Li) detectors, larger delay-lines
are available (optionally).

DELAY

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GAIN

1 - 20 in 5 steps.

WALK

Less than 0.5 nsec at dynamic range 1:100.

POWER REQUIREMENTS

+12 V, 160 mA
-12 V, 160 mA.

TEMPERATURE STABILITY

Less than 10 psec/ $^{\circ}$ C.

SIZE

NIM standard, single-width.