

N842

8 Channel Constant Fraction Discriminator



Features



- Individually programmable thresholds
- Programmable output width
- Programmable dead time
- TEST and VETO inputs
- OR and Current sum outputs
- 4 digit Led display

Description

The CAEN **Mod.N842** is an **8 Channel Constant Fraction Discriminator** housed in a one unit wide NIM module. The module accepts 8 negative inputs and produces **2x8 NIM outputs** (NIM outputs are provided with a fan-out of two)+ **8 /NIM outputs** (negated) on front panel LEMO 00 connectors.

The constant fraction delay is **20ns full scale** with 4 ns steps ($8 \div 20$ ns operating range), optionally are also available:

- **5 ns** full scale with **1 ns** steps ($4 \div 5$ ns operating range)
- **50 ns** full scale with **10 ns** steps ($10 \div 50$ ns operating range)
- **100 ns** full scale with **20 ns** steps ($20 \div 100$ ns operating range)

The timing stage of the discriminator produces an output pulse whose width is adjustable in a range from 15 ns to 245 ns. Moreover, in order to protect against multiple pulsing, it is possible to program a dead time during which the discriminator is inhibited from retriggering.

The maximum time walk is **± 400 ps** (for input signals in the range from -50 mV to -5 V with 25 ns rise time). The constant fraction is **20%**. The individual discriminating thresholds are settable in a range from -1 mV to -255 mV (1 mV step) via an 8-bit DAC.

The module can operate also with **small (below 10 mV) input signals**, though in this case the Constant Fraction operation is not performed, i.e. the time walk is higher. The channels' threshold, output width and dead time can be programmed via two switches and one rotary handle placed on the front panel.

The back panel houses VETO and TEST inputs, the OR output and the Current Sum output, which generates a current proportional to the input multiplicity, i. e. to the number of channels over threshold, at a rate of -1.0 mA per hit (-50 mV per hit into a 50 Ω load) $\pm 20\%$.

Technical Specifications

Packaging

1U-wide NIM unit

Input Channels

8 inputs (negative polarity, 50 Ω impedance)

Max input voltage

-5 V

Threshold range

-1 mV to -255 mV (1 mV step)

Constant fraction

0,2

Delay

20 ns full scale with 4 ns steps (8 ÷ 20 ns operating range) Optional:

- 5 ns full scale with 1ns steps (4 ÷ 5 ns operating range)
- 50 ns full scale with 10ns steps (10 ÷ 50 ns operating range)
- 100 ns full scale with 20ns steps (20 ÷ 100 ns operating range)

Output Channels

8x3 NIM (1 pair bridged 1 complementary)

Input/output delay

Set delay + 6.5 ns \pm 3 ns

Output width

Programmable from 15 ns to 245 ns (typical values)

Dead Time

Programmable from 137 ns to 1865 ns (typical values)

Interchannel insulation

60 dB for 2.5 ns rise time input signals

Max outputs time walk

\pm 400 ps for input signals in the range from -50 mV to -5 V with 25 ns rise time

Autowalk

Automatic adjustment to input offset and low frequency input noise of \pm 40 mV

Test Input

NIM logic signal, high impedance Min. FWHM: 5 ns Max. frequency: 30 MHz

Veto Input

NIM logic signal, high impedance Min. FWHM: 15 ns

OR Output

NIM logic signal

Current Sum Output

Current proportional to input multiplicity ($-1 \text{ mA} \pm 20\%$ per hit), high impedance

Ordering Options

Code	Description
WN842XAAAAAA	N842 - 8 Channel Constant Frac. Discriminator(Delay 20 ns; F = 20%) RoHS

Accessories

A385



Adapter 2.54mm 34-pin female to 16x LEMO 00 female (or MCX male) - 50 cm / 1 m

Related Products

NIM8305



2 Slot Switching 450 W Mini Crate

NIM8304



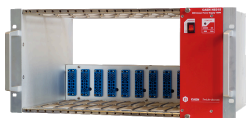
7U 12 slot smart fan unit Switching 2000 W Crate

NV8020A



7U CRATE VME/NIM 8 slot VME64 365W, 5 slot NIM 150W

NIM8302



5U 10 slot 150 W Compact Crate

NIM8302P



5U 5 slot 150 W Portable Crate

NIM8306



2 Slot Switching 750 W Mini Crate

NIM8303



5U 12 slot 300/600 W Crate

Gallery



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