

C808

16 Channel Constant Fraction Discriminator



- ECL outputs with fan-out of two
- Threshold programmable individually for each channel
- Programmable output width
- Programmable dead time
- TEST and VETO inputs
- OR, CURRENT SUM and MAJORITY outputs

The Mod. C808 is a 16 Channel Constant Fraction Discriminator housed in a single width CAMAC module. The module accepts 16 negative inputs and produces 16 differential ECL outputs with a fan-out of two on two front panel header connectors. Each channel can be turned on or off via CAMAC by using a mask register (Pattern of Inhibit). The constant fraction delay is 20ns full scale with 4 ns steps (8 ÷ 20 ns operating range), optionally are also available: 5ns full scale with 1ns steps (4 ÷ 5 ns operating range), 50ns full scale with 10ns steps (10 ÷ 50 ns operating range), 100ns full scale with 20ns steps (20 ÷ 100 ns operating range). The pulse forming stage of the discriminator produces an output pulse whose width is adjustable in a range from 15 ns to 250 ns. Moreover it is possible to program a dead time interval during which the discriminator is inhibited from retriggering, in order to protect against multiple pulsing.

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 CAMAC through 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. VETO and TEST inputs are available on the back panel.

A Current Sum output generates a current proportional to the input multiplicity, i.e. to the number of channels over threshold, at a rate of -1.0 mA $\pm 20\%$ per hit. A "MAJORITY" output on a back panel connector provides a NIM signal if the number of input channels over threshold exceeds the MAJORITY programmed value.

Several C808 boards can be connected in a daisy chain via the Current Sum output: in this case, by switching the Majority logic to "External", it's possible to obtain a Majority signal when the number of over threshold channels in the daisy chained modules exceeds a global Majority level.

An "OR" output signal on a front panel connector provides a global OR of the outputs.

Inputs	Channels: Negative polarity, 50 Ohm impedance Minimum ratings: - 5 mV. Maximum ratings: - 5 VETO: standard NIM logic signal, high impedance, 30 ns minimum FWHM. Leading edge of the VETO signal must precede of at least 18 ns the leading edge of the input and overlap completely the input signal TEST: standard INPUT NIM logic signal, high impedance, 8 ns minimum FWHM
Packaging	1-unit wide CAMAC module
Outputs	Outputs: Differential ECL level on 110 Ohm impedance Pulse width adjustment: from 14.5 \pm 1.5 ns to 249 \pm 15 ns Maximum time walk: ± 400 ps for input signals in the range from -50 mV to -5 V with 25 ns rise time OR: standard NIM logic signal on 50 Ohm CURRENT SUM: high impedance with rate of -1 mA per hit MAJORITY: standard NIM logic signal on 50 Ohm
Threshold range	-1 mV to -255 mV; -1 mV step
Dead time	
Input-Output delay	Set delay 6 ns \pm 2 ns
Interchannel Insulation	60 dB for 2.5 ns rise time input signals.
Autowalk	Automatic adjustment to input offsets and low frequency input noise of ± 40 mV
Delay	20ns full scale with 4 ns steps (8 ÷ 20 ns operating range) Optional: 5ns full scale with 1ns steps (4 ÷ 5 ns operating range) 50ns full scale with 10ns steps (10 ÷ 50 ns operating range) 100ns full scale with 20ns steps (20 ÷ 100 ns operating range)

Code	Description
WC808XAAAAA	C808 - 16 Channel Constant Frac. Discriminator(Delay 20 ns. F = 20%)

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