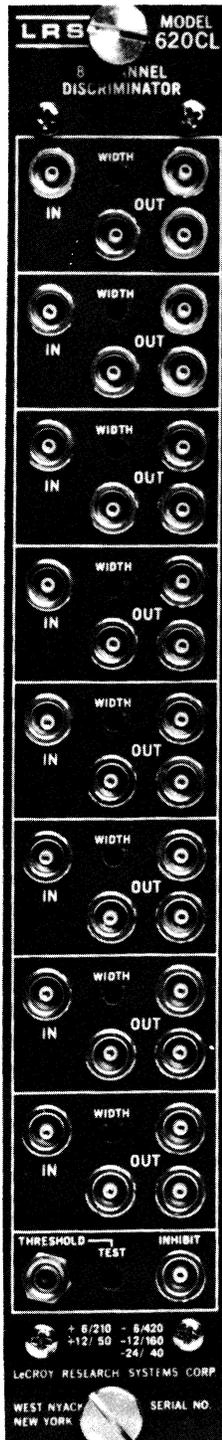


TECHNICAL DATA

LeCroy
RESEARCH SYSTEMS



NIM Model 620CL

8-Channel Discriminator With Veto

The LRS Model 620CL, a new, non-updating, 100 MHz octal discriminator, ideal for hodoscope and other applications, is similar in design and performance to the widely-used Model 620AL. Utilizing the same hybrid circuit front end as most other LRS discriminators (the LD601 Series), the 620CL offers input reflection characteristics (<4%) still unmatched by other commercially available discriminators and an excellent reliability record based upon active field use of a significant number of the same front-end hybrid during the past few years.

The 620CL offers eight independent channels of discriminator, the thresholds of which are commonly variable from -30 mV to -1 volt via a front-panel, screwdriver-adjustable potentiometer (screwdriver included). A front-panel threshold monitor point permits accurate determination of threshold setting with a DC voltmeter. The stability of the threshold is $< 0.2\%/^{\circ}\text{C}$ to assure accurate results in varied operating environments.

The outputs of the 620CL are low-impedance voltage outputs providing output levels greater than -800 mV into a 50Ω load. The output durations are independently presettable via front-panel screwdriver adjustment from 5 ns to greater than 20 ns. Output risetimes and falltimes are less than 2.5 ns.

In slight difference to the original 620AL, the Model 620CL has a built-in front-panel fast veto input which permits all channels in common to be inhibited for the duration of the veto signal. Veto must overlap the leading edge of the signal to be inhibited and must precede it by approximately 5 ns.

The 620CL is packaged in an RF-shielded NIM #1 width module utilizing Lemo-type connectors. Power dissipation is approximately 6.6 watts and current usage is within the limits supplied by a standard NIM crate, permitting the use of 12 modules (96 channels) per bin.

November, 1975

Innovators in Instrumentation

SPECIFICATIONS

NIM Model 620CL

8-CHANNEL DISCRIMINATOR WITH VETO

INPUT CHARACTERISTICS

- Signal Input: Threshold, -30 mV to approximately -1.0 volt, (common to all channels); front-panel screwdriver adjust (screwdriver included); $50 \Omega \pm 1\%$, protected to ± 5 A for $0.5 \mu\text{s}$ clamping at $+1$ and -7 volts; reflections $<4\%$ for input pulses of 2 ns risetime; stability $<0.2\%/^{\circ}\text{C}$ to 60°C operating range; offset 0 ± 1 mV; threshold monitor 10:1 ratio of monitor voltage to actual voltage.
- Bin Gate: Slow gate via rear connector and rear-panel ON-OFF switch; risetimes and falltimes approximately 50 ns; clamp to ground from $+5$ inhibits; direct-coupled.
- Veto Input: One; requires fast NIM-level signal (> -600 mV); 50Ω ; must overlap leading edge of signal to be inhibited, and must precede input by approximately 5 ns.

OUTPUT CHARACTERISTICS

3 NIM-level voltage outputs, quiescently 0 volts, -800 volts during output; duration: 5 ns to > 20 ns, continuously variable via front-panel screwdriver control (narrower minimum width possible at slight expense of amplitude), risetimes and falltimes typically 2.0 ns (max. 2.5 ns), 10% to 90% . Width stability better than $\pm 0.2\%/^{\circ}\text{C}$ maximum. At least 2 outputs should be terminated in 50Ω for optimum pulse shape.

GENERAL

- Maximum Rate: > 100 MHz, input and output.
- Double-Pulse Resolution: Less than 9 ns at minimum width setting.
- Time Slewing: 1 ns for input amplitudes 110% of threshold and above.
- Input-Output Delay: 7.5 ns nominal.
- Multiple-Pulsing: None; one and only one output pulse of preset duration is produced for each input pulse, regardless of input pulse amplitude or duration.
- Packaging: In RF shielded AEC/NIM #1 module (AEC Report #TID-20893); Lemo-type connectors.
- Current Requirements: $+6$ V at 170 mA $+12$ V at 12 mA -24 V at 39 mA
 -6 V at 415 mA -12 V at 165 mA