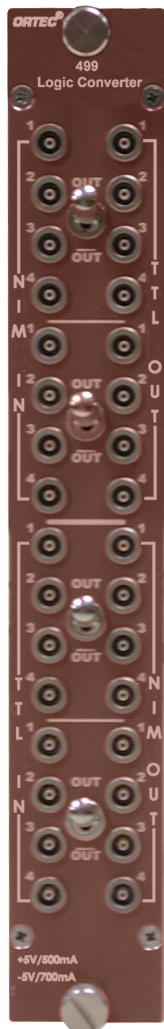


- Eliminates Incorrect Logic Problems in nuclear counting and fast timing experiments.
- Logic Inversion Switches change polarity of logic signals.
- 60 MHz Operating Frequency (NIM to TTL).
- No Duty-Cycle Limitations, can operate continuously.
- <10 ns of Input/Output Delay for quick triggering.



The ORTEC Model 499 is a logic converter designed to provide corrected logic type and/or pulse polarity for signals used to trigger events, to provide pulses to be counted, or to time specific events in timing or counting applications for nuclear, optical, chemical, or biological processes.

### Convert Logic and/or Polarity

The 499 allows the user to convert between two of the most widely used logic types; fast negative NIM (negative 800 mV) and TTL (positive 2 V). In addition, the polarity can easily be switched. The 499 has a total of 16 channels of conversion.

### Multiple Channels and Multiple Outputs

The upper half of the 499 provides eight channels of fast negative NIM to TTL logic conversion. These eight channels are divided into two, four channel segments that can be switched to Normal or Inverted outputs. The lower half of the module has eight channels of TTL to fast negative NIM logic conversion which are also divided into two, four channel segments that can be switched to Normal or Inverted outputs.

### Operating Frequency

The maximum operating frequency for the NIM to TTL is 60 MHz and for the TTL to NIM is 40 MHz. All of the outputs are DC coupled with no duty-cycle limitations. The outputs are 50  $\Omega$  impedance and use 50  $\Omega$  cables for connection to 50  $\Omega$  loads. The total delay for any channel is less than 10 ns.

## Specifications

### INPUTS AND OUTPUTS

**NIM Inputs** Two sets of four inputs accept fast negative NIM signals with minimum pulse widths of 10 ns.  $Z_{in} = 50 \Omega$ . LEMO 00 connector.

**TTL Inputs** Two sets of four inputs accept TTL signals with minimum pulse widths of 12 ns.  $Z_{in} = 50 \Omega$ . LEMO 00 connector.

**TTL Outputs** Two sets of four outputs provide  $\geq 2$  V with rise and fall times  $\leq 3$  ns. Output delay from the input is  $\leq 8$  ns.  $Z_{out} = 50 \Omega$ . LEMO 00 connector.

**NIM Outputs** Two sets of four outputs provide  $\geq 800$  mV with rise and fall times of  $\leq 2$  ns. Output delay is  $\leq 10$  ns.  $Z_{out} = 50 \Omega$ . LEMO 00 connector.

### CONTROLS

**NIM to TTL OUT/INVERT OUT** Two switches controlling four sections each of the NIM to TTL converters. OUT position provides positive going TTL logic outputs, INVERT OUT position provides negative going TTL logic outputs.

**TTL to NIM OUT/INVERT OUT** Two switches controlling four sections each of the TTL to NIM converters. OUT position provides negative going fast NIM logic outputs, INVERT OUT positions provide positive going fast NIM logic outputs.

### ELECTRICAL AND MECHANICAL

**Power Required** +6 V, 230 mA; -6 V, 230 mA.

**Weight** Net 0.9 kg (2 lb), Shipping 2.25 kg (5 lb).

**Dimensions** NIM-Standard single width 3.43 x 22.13 cm (1.35 x 8.714 in) front panel per DOE/ER-0457T.

## Ordering Information

Model	Description
499	NIM to TTL and TTL to NIM converter