

Model 499 Fast/Slow NIM Logic Converter

DESCRIPTION

The ORTEC Model 499 Fast/Slow NIM Logic Converter is 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.

The Model 499 allows you to convert between two of the most widely used logic types, fast negative NIM (negative 800 mV) and TTL (positive 2 V). In addition, you can easily switch the polarity. The unit provides a total of 16 channels of conversion.

The upper half of the Model 499 provides eight channels of fast negative NIM to TTL logic conversion. These eight channels are divided into two 4-channel segments, each with a two-position switch for changing between normal and 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 4-channel segments that can be switched to normal or inverted outputs.

The maximum operating frequency is 60 MHz for the NIM to TTL and 40 MHz for the TTL to NIM. The outputs are 50 Ω impedance and use 50 Ω cables for connection to 50 Ω loads. The total delay for any channel is less than 10 ns for quick triggering. And the Model 499 has no duty-cycle limitations so it can operate continuously.

Fast rise- and fall-times ensure minimum pulse width with maximum frequency.

Figure 1 (page 2) shows the front panel.

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 ≥ 2 V with rise and fall times ≤ 3 ns. Output delay from the input is ≤ 8 ns. $Z_{out} = 50 \Omega$. LEMO 00 connector.
- **NIM Outputs** Two sets of four outputs provide ≥ 800 mV with rise and fall times of ≤ 2 ns. Output delay is ≤ 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 position provides 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 cm x 22.13 cm (1.35 in x 8.714 in) front panel per DOE/ER-0457T.
- **CE** Conforms to CE standards low-voltage power directives.

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WARRANTY

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Quality Control

Before being approved for shipment, each ORTEC instrument must pass a stringent set of quality control tests designed to expose any flaws in materials or workmanship. Permanent records of these tests are maintained for use in warranty repair and as a source of statistical information for design improvements.

Repair Service

If it becomes necessary to return this instrument for repair, it is essential that Customer Services be contacted in advance of its return so that a Return Authorization Number can be assigned to the unit. Also, ORTEC must be informed, either in writing, by telephone [(865) 482-4411] or by facsimile transmission [(865) 483-2133], of the nature of the fault of the instrument being returned and of the model, serial, and revision ("Rev" on rear panel) numbers. Failure to do so may cause unnecessary delays in getting the unit repaired. The ORTEC standard procedure requires that instruments returned for repair pass the same quality control tests that are used for new-production instruments. Instruments that are returned should be packed so that they will withstand normal transit handling and must be shipped PREPAID via Air Parcel Post or United Parcel Service to the designated ORTEC repair center. The address label and the package should include the Return Authorization Number assigned. Instruments being returned that are damaged in transit due to inadequate packing will be repaired at the sender's expense, and it will be the sender's responsibility to make claim with the shipper. Instruments not in warranty should follow the same procedure and ORTEC will provide a quotation.

Damage in Transit

Shipments should be examined immediately upon receipt for evidence of external or concealed damage. The carrier making delivery should be notified immediately of any such damage, since the carrier is normally liable for damage in shipment. Packing materials, waybills, and other such documentation should be preserved in order to establish claims. After such notification to the carrier, please notify ORTEC of the circumstances so that assistance can be provided in making damage claims and in providing replacement equipment, if necessary.

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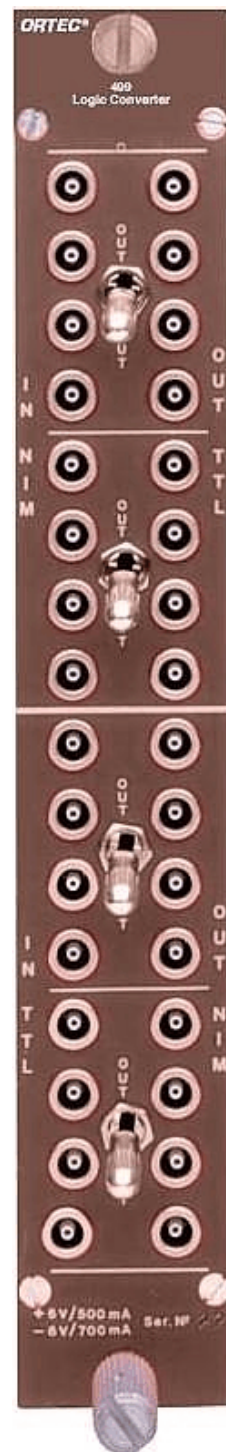


Figure 1. Front Panel.