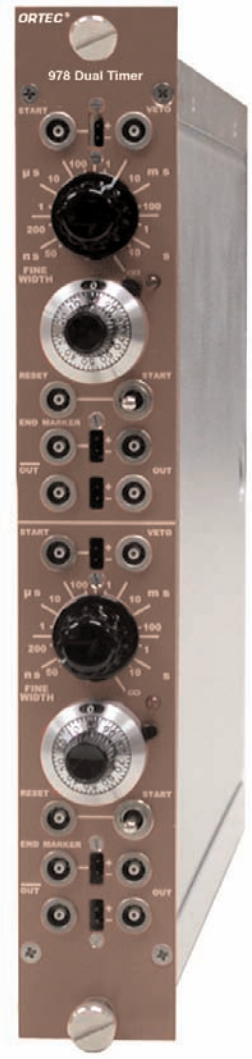
ORTEC®

978
Dual Timer

Versatile Dual Timer/Pulse Generator in Single Width NIM



- **Two Identical Triggered Pulse Generators in a single wide NIM module**
- **Manual or Pulse triggered start**
- **NIM and ECL output width from 50 ns to 10 s**
- **End marker output**
- **Functions as a variable width and rate pulser when both sections are cascaded**

The ORTEC 978 Dual Timer is a single width NIM module housing two identical flexible triggered pulse generators. It produces NIM and ECL pulses with width ranges from 50 ns to 10 s when triggered. Output pulses are provided in both normal and complementary formats. A pulse end-marker output signal is provided which can be used to re-trigger the timer for repeat mode. The trigger START can be provided either via an external signal or manually via a front panel switch. The veto input can act as an inhibit gate for the start input signal. The coarse adjustment of the output width is provided via a 10-position rotary switch, while the fine adjustment can be performed via a rotary knob. The two timers may be cascaded to form a pulser with both variable width and rate. Overall accuracy is 10% of full scale plus a temperature coefficient of 0.1% per °C.

Specifications

OUTPUTS

Two normal independent, one complementary NIM level and one ECL. Output width 50 ns to 10 s in 9 decade steps, with a potentiometer and locking dial for fine adjustment.

Dead Time: Shorter than the cycle time. (The timer can be triggered well before the end of the timing cycle).

Rise/Fall Time: <2 ns.

I/O Delay: Delay from Start to leading edge of output, or from Reset to trailing edge, is approximately 13 ns .

INPUTS AND OUTPUTS

Start Inputs: LEMO 00 connector inputs accept fast negative NIM signals with minimum pulse widths of 5-ns. Z_{in} = 50 Ω. ECL inputs are dual pins with Z_{in} =100 Ω.

Veto Inputs: Accept fast negative NIM logic and disables the Start Inputs when logic is TRUE within ±2 ns of Start leading edge. Z_{in} = 50 Ω. LEMO 00 connector.

Reset Inputs: Accept fast negative NIM logic minimum width of 7 ns (15 ns for recurring operation). This input can be applied at any time producing an End Marker. Z_{in} = 50 Ω. LEMO 00 connector.

End Marker Outputs: Left LEMO 00 (Z_{out} = 50 Ω) connector outputs provide a 15 ns wide NIM logic level where the leading edge is coincident with the trailing edge of the outputs within ±2 ns. Right LEMO 00 (Z_{out} = 50 Ω) provides complementary NIM logic levels out. ECL outputs are dual pin ECL logic Z_{out} = 100 Ω.

Inverted Out and Out Outputs: Left LEMO 00 (Z_{out} = 50 Ω) connector outputs provide a fast NIM positive going logic level. Right LEMO 00 (Z_{out} = 50 Ω) connector outputs provide a fast NIM negative going logic level. ECL outputs are dual pin ECL logic Z_{out} = 100 Ω.

CONTROLS

Momentary Start Switches: Switch creates an End Marker and provides a manual Reset.

Width Switches: Nine decade switches from 50 ns to ∞. The ∞ setting provides bi-stable operation.

Vernier Width Potentiometers: Provides fine adjustment for each of the Width Switch settings with overlap. Accuracy is ±10% of full scale (temperature coefficient is 0.1% per °C of setting).

INDICATORS

LED: LED flash for 0.1 s or the output width (whichever is greater). At high rates the flashing rate is not synchronized with the input.

ELECTRICAL AND MECHANICAL

Power Required: +6 V, 55 mA; –6 V, 560 mA; +12 V, 17 mA; +24 V, 40 mA; –24 V, 18 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
978	Dual Timer

978
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Specifications subject to change
041709

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