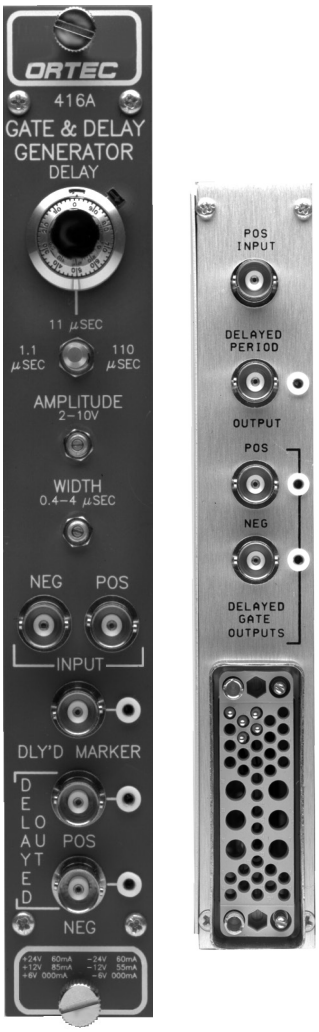
416A
Gate and Delay Generator

- **Provides adjustment of the delay, width, polarity, and amplitude of gating pulses**
- **Positive or negative polarity input pulse**
- **Time delay from 0.1 to 110 µs**
- **Output pulse width from 0.4 to 4 µs**
- **Excellent time delay stability**



The ORTEC Model 416A Gate and Delay Generator accepts either polarity of input logic pulse, provides a delay of up to 110 µs, and furnishes an output logic pulse with selected amplitude, polarity, and width. The combination of functions provided by this module satisfies various logic requirements, such as gating multichannel analyzers and alignment of coincidence timing between two channels using dissimilar pulse-shaping modes. Auxiliary outputs include a Delay Period output, with a width equal to the delay time, and a NIM-standard Fast-negative Delayed Marker pulse. Excellent time stability allows application in systems that require nanosecond time precision.

Instruments producing either positive or negative NIM-standard logic signals may be used to drive the Model 416A. Because of the versatility of its amplitude and width adjustments and its dual-polarity output connections, the output can be set for compatibility with essentially all nuclear instrumentation. It can also be used as a logical interface between ORTEC equipment and any other instruments.

Specifications

PERFORMANCE

DELAY NONLINEARITY ≤±2%.

DELAY TEMPERATURE INSTABILITY ≤±0.03% of adjusted Delay per °C.

DELAY GENERATOR DEAD TIME Adjusted Delay plus 200 ns on 1.1-µs range, 300 ns on 11-µs range, and 1 µs on 110-µs range.

OUTPUT GENERATOR DEAD TIME Adjusted Width plus 0.2 µs.

DELAY JITTER ≤0.02% of selected range.

CONTROLS

DELAY 10-turn locking potentiometer with direct-reading duo-dial for continuous adjustment within the range selected by the locking 3-position toggle switch:

1.1 µs Selects the range of 0.1 to 1.1 µs for the Delay potentiometer.

11 µs Selects a 1 to 11 µs range.

110 µs Selects a 10 to 110 µs range.

AMPLITUDE Front-panel screwdriver control, permits the output pulse amplitude to be adjusted within the range of 2 to 10 V, both polarities (i.e., +2 to +10 V and –2 to –10 V).

WIDTH Front-panel screwdriver control permits the width of output pulses to be adjusted within the range of 400 ns to 4 µs.

INPUTS

POS Front- and rear-panel BNC connectors; +2 V pulse minimum, 12 V maximum; 100-ns minimum width, dc-coupled; impedance 1000 Ω.

NEG Front-panel BNC connector accepts NIM-standard fast negative logic pulses; –250 mV pulse minimum; 5 ns minimum width, dc-coupled; impedance 50 Ω.

OUTPUTS

DELAYED OUT, POS/NEG Front- and rear- panel BNC connectors, with test points, provide simultaneous output pulses with identical characteristics except for opposite polarity; impedance ≤10 Ω.

DELAYED PERIOD Rear-panel BNC connector, with test point, provides positive pulse width equal to the adjusted Delay; amplitude +5 V; rise time ≤50 ns; impedance ≤10 Ω.

DLY'D MARKER Front-panel BNC connector, with test point, provides NIM-standard fast negative logic pulse at the end of delay time. Amplitude, –0.6 V into 50 Ω load; rise time ≤10 ns; width ≤25 ns; impedance ≤10 Ω.

ELECTRICAL AND MECHANICAL

POWER REQUIRED The Model 416A derives its power from a standard NIM bin/power supply. The power required is +24 V, 60 mA; –24 V, 60 mA; +12 V, 85 mA; and –12 V, 85 mA.

WEIGHT
Net 1.3 kg (2.8 lb).
Shipping 2.2 kg (4.8 lb).

DIMENSIONS NIM-standard single-width module 3.43 X 22.13 cm (1.35 X 8.714 in.) per DOE/ER-0457T.

Ordering Information

To order, specify:

Model	Description
416A	Gate and Delay Generator

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Visit Our Website For International Office Locations

Specifications subject to change
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