ORTEC®

418A
Universal Coincidence

- **Provides coincidence determinations using majority logic**
- **Five, positive-polarity, dc-coupled inputs**
- **Coincidence, Anticoincidence, or Off selectable for each input**

The ORTEC Model 418A is a Universal Coincidence unit with five dc-coupled inputs. Each input is accepted through a convenient front-panel connector.

Input A accepts an input signal with a width of 50 ns or more and regenerates an internal signal that will be used for coincidence comparisons. The Input A signal width is adjustable for a resolving time of 100 ns to 2 μs, and this range is available with a front-panel control.

The function of each input is selectable, and its signal can be used for coincidence or anticoincidence or can be disabled. This permits various combinations of input signal relations to be selected without adding or removing cables in the system.

Another feature that simplifies operating flexibility without changing any cables is a selectable number of inputs that are required to satisfy a coincidence. For example, if the selector shown is set at 2, an overlap between any two inputs that are selected for the coincidence function will cause an output to be generated. If any one or more inputs are selected for anticoincidence, all outputs are inhibited while such signals are present. Because any combination of input signal effects can be selected easily at the front panel, the Model 418A is a Universal Coincidence unit that can be adapted to any coincidence system arrangement.

Specifications

PERFORMANCE

INPUT A RESOLVING TIME 100 ns to 2 μs; controlled by a front-panel, 20-turn, screwdriver adjustable potentiometer; inputs B, C, D, and E controlled by input pulse width.

TEMPERATURE INSTABILITY
Input A Change in resolving time, τ, <±0.1%/°C.

Inputs B, C, D, E Change in resolving time, τ, <±0.05%/°C for τ = 500 ns.

OPERATING TEMPERATURE 0 to 50°C.

CONTROLS

COINCIDENCE REQUIREMENTS Selects number of inputs necessary to satisfy a coincidence requirement (majority logic).

INPUT CONTROLS Five 3-position toggle switches select Coincidence, Anticoincidence, or Off (disabled).

INPUTS

POLARITY +2 V minimum, 30 V maximum.

PULSE WIDTH 50 ns to dc.

CONNECTORS BNC on front panel.

INPUT IMPEDANCE >1.5 k Ω, dc-coupled.

OUTPUTS

AMPLITUDE +5 V.

PULSE WIDTH 500 ns.

CONNECTORS BNC on front and rear panels.

OUTPUT IMPEDANCE <10 Ω, dc-coupled.

ELECTRICAL AND MECHANICAL

POWER REQUIREMENTS The Model 418A derives its power from a standard NIM bin/power supply. The power required is +24 V, 105 mA; –24 V, 95 mA; +12 V, 50 mA; and –12 V, 30 mA.

WEIGHT
Net 0.9 kg (2.0 lb).
Shipping 2.25 kg (5.0 lb).

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

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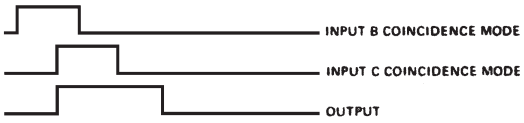
Related Equipment

Input signals to the Model 418A can be from any timing instrument providing a positive output signal from 2 to 30 V. The output of the Model 418A provides a logic signal suitable for driving any of the medium-speed logic modules in the ORTEC product line, but it is more typically used as a gating signal such as a gate-enable signal to a multichannel analyzer.

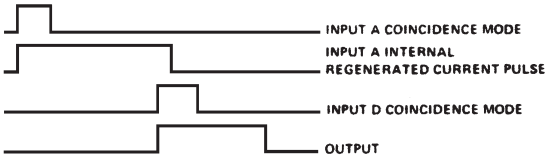
Ordering Information

To order, specify:

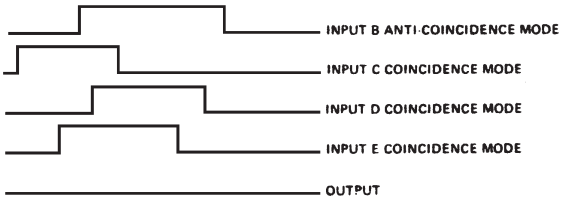
Model	Description
418A	Universal Coincidence



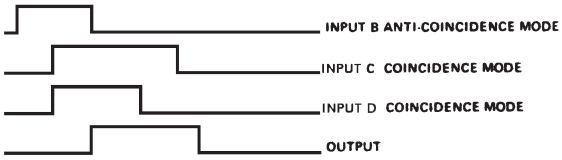
Coincidence Requirements When Switch Setting is 2.



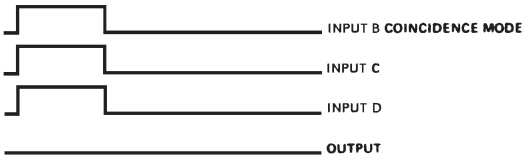
Coincidence Requirements When Switch Setting is 2.



Coincidence Requirements When Switch Setting is 3.



Coincidence Requirements When Switch Setting is 2.



Coincidence Requirements When Switch Setting is 4.

Specifications subject to change
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