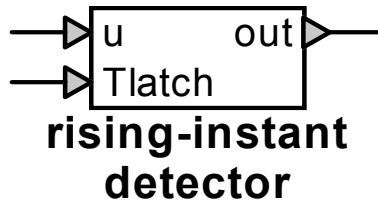


Control function: rising-instant detector



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1 Description

This device monitors the time at which the most recent rising edge was detected on the input signal.

1.1 Pins

This device has three pins:

<i>pin</i>	<i>type</i>	<i>description</i>
u	input	measured input
Tlatch	input	latch time
out	output	detector output

1.2 Parameters

No parameter is required for this device.

1.3 Input

The input pins may be connected to any control signal.

1.4 Output

The output is the instant at which the most-recent rising edge (through zero) was detected on the input signal.

1.5 Representation

The implementation of the model can be inspected by opening the device's subcircuit.

The value of the output is refreshed to the current value of the simulation time whenever a rising edge is detected on the input and at least T_{latch} seconds have elapsed since the previous update:

$$\text{updating} = \text{detecting} \text{ AND } t > t_1 + T_{latch} \quad (1)$$

where

$$\text{detecting} = \text{true} \quad \text{whenever } u(t - \Delta t) \leq 0 < u(t) \quad (2)$$