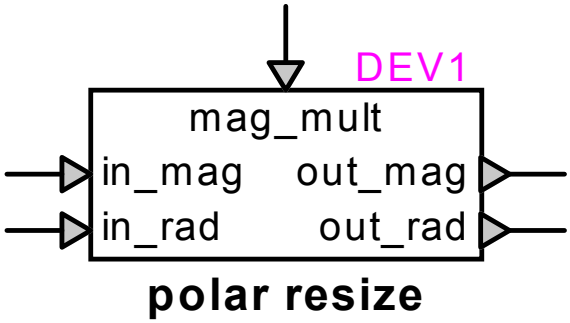
Phasor operation : polar resize



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1 Description

This device modifies the magnitude of a vector or phasor represented by its polar coordinates.

1.1 Pins

This device has five pins:

pin	*type*	*description*	*units*
in_mag	input pin	input magnitude	any
in_ rad	input pin	input angle	rad
mag_mult	input pin	magnitude multiplier	any
out_ mag	output pin	output magnitude	units(in_mag)*units(mag_mult)
out_rad	output pin	output angle	rad

1.2 Parameters

No parameters are required for this device.

1.3 Input

The input pins may be connected to any control signals.

1.4 Output

The outputs are the polar coordinates of the input vector resized by a variable multiplier.
The operation is immediate, and is calculated as follows:

$$\begin{aligned} out_mag &= in_mag \cdot multiplier \\ out_rad &= in_rad \end{aligned} \qquad (1)$$