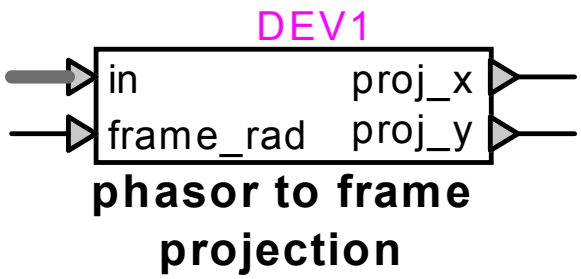
Phasor operation : phasor to frame projection



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1 Description

This device projects a vector or phasor on a rotated x-y frame. The input vector is represented by a 2-signal bundle of its polar coordinates.

1.1 Pins

This device has four pins:

pin	*type*	*description*	*units*
in	2-signal bundle	magnitude	any
		angle	rad
frame_rad	input pin	frame rotation angle	rad
out_x	output pin	x-coordinate	same as in_mag
out_y	output pin	y-coordinate	same as in_mag

1.2 Parameters

No parameters are required for this device.

1.3 Input

The input pins of the vector may be connected to any 2-signal bundle representing its polar (magnitude,angle) coordinates.

The magnitude is the peak amplitude, not the RMS value. The angle is expressed in radians.

1.4 Output

The outputs are the *x*-axis and *y*-axis projections of the input vector on a rotated x-y frame.

The operation is immediate, and is calculated as follows:

$$\begin{aligned} proj_x &= in_mag \cdot \cos(in_rad - frame_rad) \\ proj_y &= in_mag \cdot \sin(in_rad - frame_rad) \end{aligned} \qquad (1)$$