




Gates Vector

From Wiremod Wiki



Contents

- 1 Addition
- 2 Angles (Degree or Radian)
- 3 Clamp (numbers)
- 4 Clamp (vectors)
- 5 Component Integral
- 6 Compose
- 7 Cross Product
- 8 D-Latch
- 9 Decompose
- 10 Delta (Vector)
- 11 Demultiplexer
- 12 Division
- 13 Dot Product
- 14 Equal
- 15 Greater Than
- 16 Greater Than or Equal To
- 17 Identity
- 18 Inequal
- 19 Is In World
- 20 Largest
- 21 Latch
- 22 Less Than
- 23 Less Than or Equal To
- 24 Magnitude
- 25 Multiplexer
- 26 Multiplication
- 27 Multiplication (component)
- 28 Negate
- 29 Normalise
- 30 Positive
- 31 Random
- 32 Rotate
- 33 Round
- 34 Select
- 35 Decompose
- 36 Shift Components Right
- 37 Smallest
- 38 Subtraction
- 39 To String





Addition

Inputs:	 A  B
Outputs:	 Out
Description:	Adds 2 vectors together.





Angles (Degree or Radian)

Inputs:	 A
Outputs:	 Yaw, Pitch
Description:	Outputs the direction of the vector as Yaw and Pitch.



Clamp (numbers)

Inputs:	 A  Min  Max
Outputs:	 Out
Description:	Clamps each component of the vector between Min and Max.

Clamp (vectors)

Inputs:	 A  Min  Max
Outputs:	 Out
Description:	Clamps each component of the vector A between the corresponding components of vectors Min and Max.

Component Integral

Inputs:	 A
Outputs:	 Out
Description:	Accumulates each component of vector A.

Compose

Inputs:	<input checked="" type="checkbox"/> A <input checked="" type="checkbox"/> B <input checked="" type="checkbox"/> C
Outputs:	<input checked="" type="checkbox"/> Out
Description:	Composes an Vector based on inputs A B and C.

Cross Product

Inputs:	<input checked="" type="checkbox"/> A <input checked="" type="checkbox"/> B
Outputs:	<input checked="" type="checkbox"/> Out
Description:	Outputs the cross product of vector A and B. For more information look [here (http://web.archive.org/web/20151225025401/http://en.wikipedia.org/wiki/Cross_product)].

D-Latch

Inputs:	<input checked="" type="checkbox"/> In <input checked="" type="checkbox"/> Clk
Outputs:	<input checked="" type="checkbox"/> Out
Description:	If Clk is 1 then updates the output else it will hold the current output.

Decompose

Inputs:	<input checked="" type="checkbox"/> A
Outputs:	<input checked="" type="checkbox"/> A <input checked="" type="checkbox"/> B <input checked="" type="checkbox"/> C
Description:	Split a vector in its 3 components.

Delta (Vector)

Inputs:	<input checked="" type="checkbox"/> A
Outputs:	<input checked="" type="checkbox"/> Out

Description:

Outputs the change of value of vector A.

Demultiplexer

Inputs:

V

In

N

Select

Outputs:

V

A B C D E F G H

Description:

Outputs In to the selected output.

Division

Inputs:

V

A B

Outputs:

V

Out

Description:

Output vector A divided by vector B.

Dot Product

Inputs:

V

A B

Outputs:

N

Out

Description:

Output the dot product of vector A and B. For more information look [[1]] (http://web.archive.org/web/20151225025401/http://en.wikipedia.org/wiki/Dot_product)].

Equal

Inputs:

V

A B

Outputs:

N

Out

Description:

Outputs 1 when the magnitude vector A and B are equal else outputs 0.

Greater Than

Inputs:	<input checked="" type="checkbox"/> A <input checked="" type="checkbox"/> B
Outputs:	<input checked="" type="checkbox"/> Out
Description:	Outputs 1 when the magnitude of vector A is greater than the magnitude of vector B else outputs 0.

Greater Than or Equal To

Inputs:	<input checked="" type="checkbox"/> A <input checked="" type="checkbox"/> B
Outputs:	<input checked="" type="checkbox"/> Out
Description:	Outputs 1 when the magnitude of vector A equal or is greater than the magnitude of vector B else outputs 0.

Identity

Inputs:	<input checked="" type="checkbox"/> A
Outputs:	<input checked="" type="checkbox"/> Out
Description:	Outputs A. Useful for organizing your wiring

Inequal

Inputs:	<input checked="" type="checkbox"/> A <input checked="" type="checkbox"/> B
Outputs:	<input checked="" type="checkbox"/> Out
Description:	Outputs 1 when the magnitude of vector A and B are not equal else outputs 0.

Is In World

Inputs:	<input checked="" type="checkbox"/> In
Outputs:	<input checked="" type="checkbox"/> Out
Description:	Outputs 1 when vector A is in the world else outputs 0.

Largest

Inputs:	<input checked="" type="checkbox"/> A <input checked="" type="checkbox"/> B
Outputs:	<input checked="" type="checkbox"/> Out
Description:	Outputs the vector with the largest magnitude.

Latch

Inputs:	<input checked="" type="checkbox"/> In <input checked="" type="checkbox"/> Clk
Outputs:	<input checked="" type="checkbox"/> Out
Description:	The Latch is Edge-Triggered, meaning that it only stores the vector when the Clk input changes from 0 to positive. In order to change the data stored, the Clk input must go back to zero or negative and then back to positive. The Latch will output whatever vector is currently stored.

Less Than

Inputs:	<input checked="" type="checkbox"/> A <input checked="" type="checkbox"/> B
Outputs:	<input checked="" type="checkbox"/> Out
Description:	Outputs 1 when the magnitude of vector A is less than the magnitude of vector B else outputs 0.

Less Than or Equal To

Inputs:	<input checked="" type="checkbox"/> A <input checked="" type="checkbox"/> B
Outputs:	<input checked="" type="checkbox"/> Out
Description:	Outputs 1 when the magnitude of vector A is equal or less than the magnitude of vector B else outputs 0.

Magnitude

Inputs:	<input checked="" type="checkbox"/> In
Outputs:	<input checked="" type="checkbox"/> Out
Description:	Outputs the magnitude (= length) of the vector.

Multiplexer

Inputs:	<input checked="" type="checkbox"/> A <input checked="" type="checkbox"/> B <input checked="" type="checkbox"/> C <input checked="" type="checkbox"/> D <input checked="" type="checkbox"/> E <input checked="" type="checkbox"/> F <input checked="" type="checkbox"/> G <input checked="" type="checkbox"/> H <input checked="" type="checkbox"/> Select
Outputs:	<input checked="" type="checkbox"/> Out
Description:	Outputs the selected vector.

Multiplication

Inputs:	<input checked="" type="checkbox"/> A <input checked="" type="checkbox"/> B
Outputs:	<input checked="" type="checkbox"/> Out
Description:	Outputs the multiplication of vector A and B.

Multiplication (component)

Inputs:	<input checked="" type="checkbox"/> A <input checked="" type="checkbox"/> B
Outputs:	<input checked="" type="checkbox"/> Out
Description:	Outputs the multiplication of the individual components vector A and B.

Negate

Inputs:	<input checked="" type="checkbox"/> In
Outputs:	<input checked="" type="checkbox"/> Out
Description:	Outputs the negated vector.

Normalise

Inputs:	<input checked="" type="checkbox"/> In
Outputs:	<input checked="" type="checkbox"/> Out

Description:

Outputs the normalized vector, which is a vector in the same direction with a magnitude of 1. Also called a unit vector.

Positive

Inputs:

A

Outputs:

Out

Description:

Outputs the absolute vector.

Random

Inputs:

None

Outputs:

Out

Description:

Outputs a normalized vector in a random direction.

Rotate

Inputs:

A

B

Outputs:

Out

Description:

Outputs vector A rotate by angle B

Round

Inputs:

in

Outputs:

Out

Description:

Outputs the vector rounded to the nearest integers

Select

Inputs:

A B C D E F G H

N

Select

Outputs:

Out

Description:

Outputs the selected vector.

Decompose

Inputs:

in

Outputs:

Out

Description:

Outputs the vector with the components shifted left; $X=Y$, $Y=Z$ and $Z=X$.

Shift Components Right

Inputs:

in

Outputs:

Out

Description:

Outputs the vector with the components shifted right; $X=Z$, $Y=X$ and $Z=Y$.

Smallest

Inputs:

A B

Outputs:

Out

Description:

Outputs the vector with smallest magnitude.

Subtraction

Inputs:

A B



Outputs:

Out

Description:

Outputs the vector B subtracted from vector A.

To String

Inputs:	 A
Outputs:	 Out
Description:	Outputs the vector as a string; "[X , Y , Z]"

Retrieved from "http://wiki.wiremod.com/w/index.php?title=Gates_Vector&oldid=470"

- This page was last modified on 9 January 2012, at 16:42.
- This page has been accessed 6,465 times.
- Content is available under GNU Free Documentation License 1.3 or later.