Scale

Block Group:	Math Operations
Icon:	

The Scale block returns the result of re-scaling a number from one defined set of lower and upper limits to another.

Evaluation of the result is according to the following formula:

```
(input – inputMin) * ((outputMax – outputMin) / (inputMax – inputMin)) +
outputMin = output
```

The result is limited to the range between **outputMin** and **outputMax**.

For information on using dataflow blocks, see Dataflow.

For accepted and excluded arguments of Math Operations blocks, see Math Operations.

Input/Output Properties

The following properties of the Scale block can take input and give output.

- input *(number)*
- inputMin *(number)*
- inputMax *(number)*
- outputMin *(number)*
- outputMax *(number)*

input specifies the number to re-scale.

inputMin specifies the minimum of the original scale.

inputMax specifies the maximum of the original scale.

outputMin specifies the minimum of the new scale.

outputMax specifies the maximum of the new scale. **outputMax** can be smaller than **outputMin** to reverse the scale.

Output Properties

The following properties of the Scale block can give output but cannot take input.

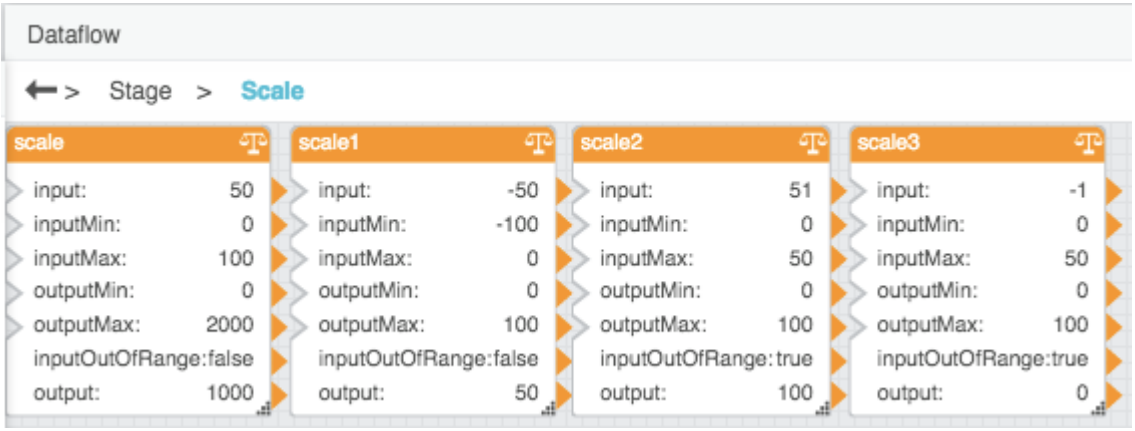
- inputOutOfRange *(boolean)*
- output *(number)*

inputOutOfRange returns TRUE if the input is outside the range from **inputMin** to **inputMax**, FALSE otherwise.

output returns the value in the new scale that corresponds to **input** in the old scale. If **input** is below the input range, **output** returns **outputMin**. If **input** is above the input range, **output** returns **outputMax**. If **inputMin** equals **inputMax**, **output** returns **outputMin** when **input** is below that value, and **outputMax** otherwise.

Examples

The following image shows four examples of the Scale block.



Previous: Root

Next: Subtract

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