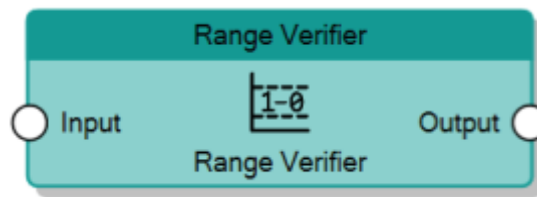
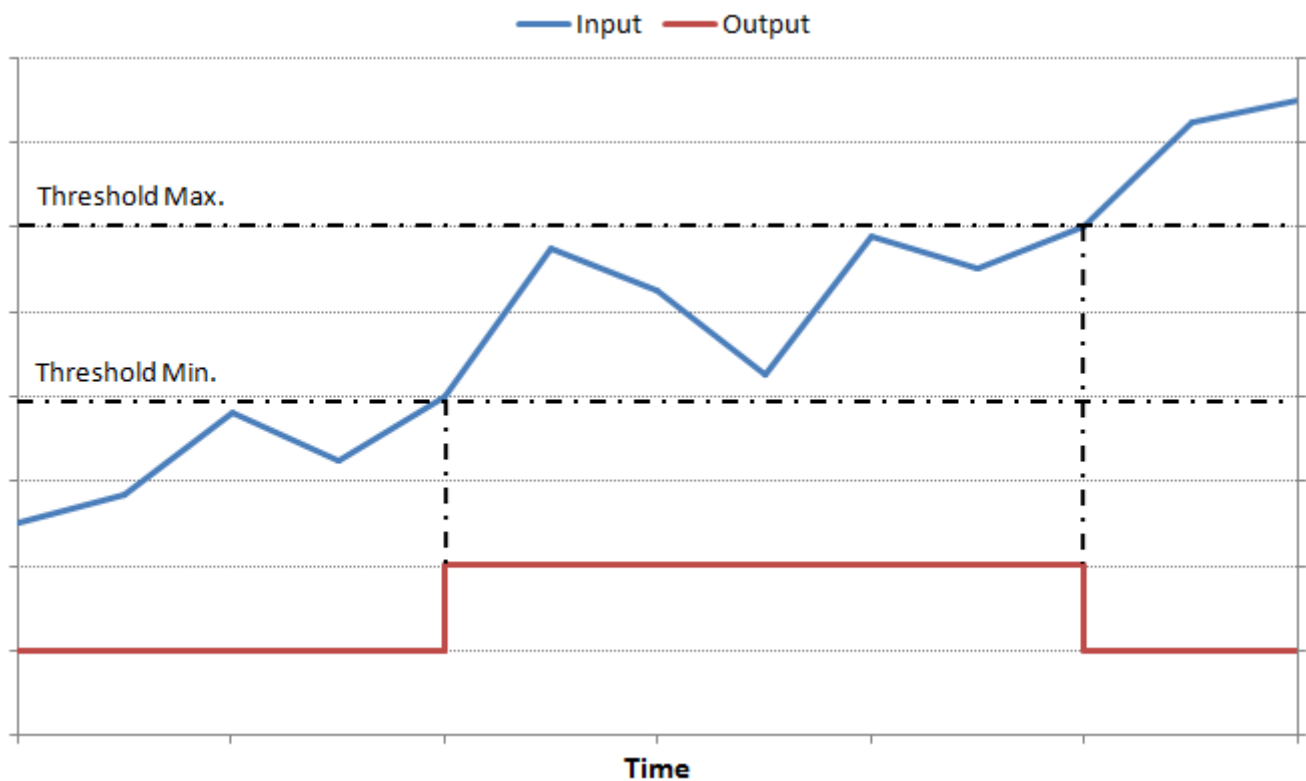


Range Verifier



The **Range Verifier** node checks whether the analog value of the **Input** connector is included between two threshold values defined by the **Threshold Min.** and **Threshold Max.** properties. If the input value is within the configured range, the node sends **1** to the **Output** connector; otherwise it sends **0**.



Behaviour of Range Verifier

Connectors

Connector	Type	Description
Input	Input	Analog value checked against the configured minimum and maximum thresholds.
Output	Output	Digital result of the comparison. The output is 1 when the input value is inside the configured range, otherwise it is 0 .

Main properties

Property	Description
Threshold Min.	Defines the minimum threshold of the accepted range.
Threshold Max.	Defines the maximum threshold of the accepted range.

Operation

The Range Verifier compares the current value of the **Input** connector with the configured threshold limits.

The condition can be represented conceptually as:

Threshold Min. $\leq$ Input $\leq$ Threshold Max.

When this condition is true:

Output = 1

When the input value is outside the configured range:

Output = 0

The output therefore provides a simple digital indication of whether the analog input is inside or outside the specified range.

Example

Consider the following configuration:

Property	Value
Threshold Min.	20
Threshold Max.	30

The node behaves as follows:

Input	Output	Result
15	0	Below the configured range
20	1	Inside the configured range
25	1	Inside the configured range
30	1	Inside the configured range
35	0	Above the configured range



The minimum and maximum threshold values are included in the valid range.

Typical applications

The Range Verifier is useful whenever it is necessary to check whether an analog value remains within an acceptable interval.

Typical applications include:

- verifying whether a temperature is within a comfort range;
- checking whether a sensor value is within acceptable operating limits;
- generating an alarm condition when a value leaves a predefined range;
- enabling or disabling logic functions according to an analog value;
- validating setpoints or process values.

Verification through simulation

The Range Verifier can be tested using the Logic Module simulation tools.

A typical test procedure is the following:

- connect a variable analog value to the **Input** connector;
- configure **Threshold Min.** and **Threshold Max.**;
- start the simulation;
- set the input below the minimum threshold and verify that **Output = 0**;
- move the input inside the configured range and verify that **Output = 1**;
- set the input above the maximum threshold and verify that **Output = 0**;
- test the exact minimum and maximum threshold values.

Configuration notes

- **Threshold Min.** should normally be lower than **Threshold Max.**.
- Make sure that the input value and threshold values use the same scale and unit.
- The node generates a digital result even though the input is analog.
- Use the Range Verifier when the logic only needs to know whether a value is inside or outside a defined interval.
- If different actions are required below and above the range, additional comparison logic may be necessary.

Related pages

- [Logic Module](#)
- [Logic Module - Simulation management](#)
- [Comparator / 2 Points Regulator](#)

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