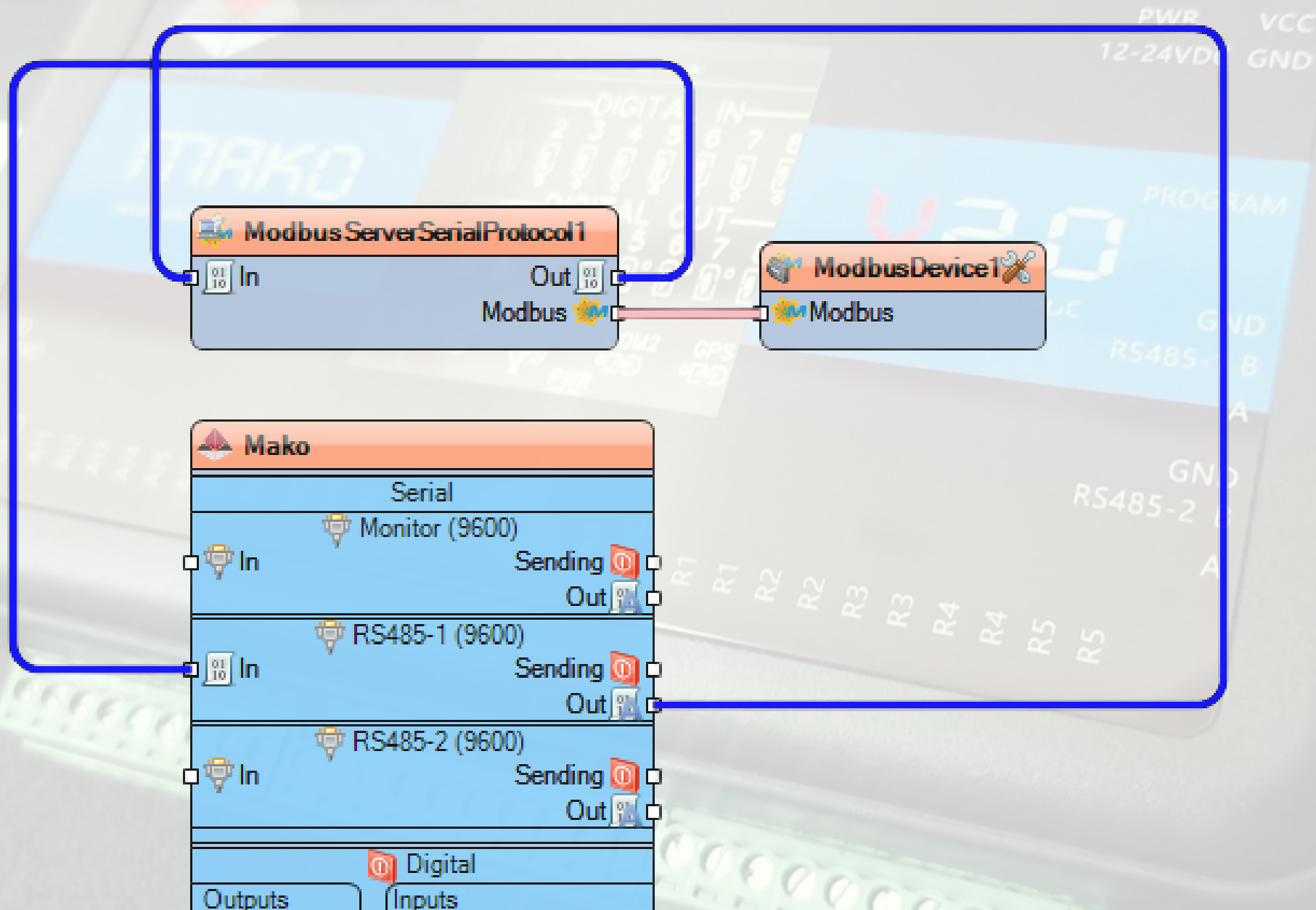


V-NET

Component look-up table



Welcome to the Mako V2 Component Lookup Guide for V-NET PLC software.

This guide provides a comprehensive list of the components, also known as instruction sets available in the Mako V2 PLC. The guide is designed to help you quickly and easily find information on components, allowing you to select and program your Mako V2 PLC using V-NET software with greater efficiency.

There are 23 categories of components, each containing a range of related instructions to choose from. Each component is clearly defined and explained, with an example code provided to illustrate its use. Whether you're a seasoned programmer or new to PLC programming, this guide will help you make the most of your Mako V2 PLC and V-NET software.

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Date/Time Components



- Xor Unsigned Value
- Not (Invert) Unsigned Value
- Add Unsigned Value
- Unsigned Mux (Multi channel Switch)
- And Unsigned Value
- Or Unsigned Value
- Subtract Unsigned From Value
- Date/Time Demux (Multiple Output channel Switch)
- Divide Unsigned Value
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- Min Limit Unsigned
- Subtract Unsigned Value
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- Ignore Unsigned Values
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- Unsigned Array
- Unsigned Snapshot
- Ignore Unsigned Ranges
- Unsigned To Text
- Unsigned To Integer
- Unsigned To Digital
- Compare Unsigned Value
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- Add Unsigned
- Multiply Unsigned
- Digitals To Unsigned (Binary Encoder)
- Sine Unsigned Generator
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- Random Unsigned Generator
- Text Demux (Multiple Output channel Switch)
- Text To Unsigned
- Analog To Unsigned
- Char Demux (Multiple Output channel Switch)
- Integer Demux (Multiple Output channel Switch)
- Integer To Unsigned
- Digital To Unsigned
- Limit Unsigned between Min and Max
- Accumulate Unsigned
- Unsigned Multi Source
- Min Unsigned Value
- Max Unsigned Value
- Unsigned Change Only
- Triangle Unsigned Generator
- Square Unsigned Generator
- Unsigned To Analog
- Unsigned Value

Unsigned Components

Flip-Flops Component

- JK Flip-Flop
- Data (D) Flip-Flop
- Toggle (T) Flip-Flop
- SR Flip-Flop

Modbus Component

- Server
 - Modbus Device
 - Modbus Server (Slave) Raw Protocol
 - Modbus Server (Slave) Serial Protocol (RTU and Ascii)
 - Modbus Server (Slave) TCP/IP Protocol
- Client
 - Modbus Remote Device Access
 - Modbus Client (Master) Serial Protocol (RTU and Ascii)
 - Modbus Client (Master) TCP/IP Protocol
 - Modbus Client (Master) Raw Protocol

Flip-Flops & Modbus Components

Quaternion Component

- Compare Quaternion Value
- Quaternion Demux (Multiple Output channel Switch)
- Quaternion Mux (Multi channel Switch)
- Quaternion Array
- Quaternion Snapshot
- Random Quaternion
- Quaternion On/Off Switch
- Analog to Quaternion
- Quaternion Multi Source
- Quaternion To Analog
- Quaternion Toggle Demux
- Quaternion Toggle Switch
- Quaternion Value

Memory Component

- Memory Storage

Quaternion & Memory Components



- Subtract Integer Value
- Subtract Integer From Value
- Multiply Integer By Value
- Divide Integer Value
- Integer Change Only
- Add Integer Value
- Integer Snapshot
- Min Integer Value
- Max Integer Value
- Inverse Integer (Change Sign)
- Absolute Integer Value
- Compare Integer Value
- Compare Integer Range
- Accumulate Integer
- Unsigned To Integer
- Inverse (Change Sign)
- Integer Array
- Divide Integer By Value
- Limit Integer between Min and Max
- Min Limit Integer
- Max Limit Integer
- Add Integer
- Multiply Integer
- Square Integer Generator
- Triangle Integer Generator
- Integer Multi Source
- Split Integer Digits
- Integer To Unsigned
- Sine Integer Generator
- Integer Value
- Up/Down Counter
- Counter
- Random Integer Generator
- Gauss Integer Generator
- Integer Multi-Source Merger
- Integer Schmitt Trigger (Hysteresis)
- Remember Integer Value
- Ignore Integer Value
- Ignore Integer Ranges
- Integer Toggle Demux
- Integer To Text
- Integer To Analog
- Integer Mux (Multi channel Switch)
- Integer Toggle Switch
- Integer On/Off Switch

Integer Components

Binary Component

- Complex Array To Binary
- Analog Array to Binary
- Binary Mux (Multi channel Switch)
- Binary Toggle Demux
- Binary Demux (Multiple Output channel Switch)
- Step/Iterate Binary Items
- Binary To Text
- Binary Data (Array) Delete Items
- Compare Binary Value
- Binary Insert Items
- Binary Value
- Remember Binary Data (Array)
- Split Binary Bytes
- Binary Multi Source
- Get Binary Item At Index
- Binary Replace Items At Index
- Binary Insert In Items
- Binary Toggle Switch
- Binary On/Off Switch
- Binary Multi-Source Merger
- Binary Replace
- Binary Snapshot

Communication Component

- Detect Packet Header ID
- Packet
- Add Packet Header ID
- HTTP Client
- Split JSON Array
- MQTT Client
- Unpacket
- Split Structure
- Make Structure
- Split JSON Object
- Make JSON Array
- Make JSON Object

Binary & Communication Components

- Delete Left Sub Text
- Trim Text Begin/End Spaces
- Delete Sub Text
- Text To Lower Case
- Extract Right Sub Text
- Text To Upper Case
- Delete Right Sub Text
- Contains Text
- Find Last Text Position
- Find Text Position
- Text Starts With
- Extract Left Sub Text
- Extract Sub Text
- Text Ends With
- Text Snapshot
- Ignore Text Values
- Remember Text Value
- Text Value
- Replace Text
- Binary Array
- Compare Text Value
- Text Array
- Text Change Only
- Char Value
- Text Toggle Switch
- Text Multi-Source Merger
- Text Toggle Demux
- Text On/Off Switch
- Measure Text Length
- Char Mux (Multi channel Switch)
- Char Toggle Switch

- Char Toggle Demux
- Char Change Only
- Char Multi-Source Merger
- Char Multi Source
- Compare Char Range
- Split JSON Array
- Text Mux (Multi channel Switch)
- Char On/Off Switch
- Split JSON Object
- Split Text To Chars
- Make JSON Object
- Encode Base64
- Text Multi Source
- Split/Parse Text
- Compare Char Value
- Char Snapshot
- Formatted Text
- Decode Base64
- Ignore Char Ranges
- Make JSON Array
- Char To Text
- Ignore Char Values
- Text To Char
- Text To Analog
- Text To Unsigned
- Text To Integer

Text Components



- Cosine of angle (Radians)
- Multiply Analog By Value
- Radians to Degrees
- Raise To Power
- Degrees to Radians
- Divide Analog Value
- Binary (Base-2) Logarithm
- Add Analog Value
- Subtract From Analog Value
- Sine of angle (Radians)
- Subtract Analog Value
- Natural Logarithm
- Kalman Angle Filter
- Kalman Analog Filter
- Limit Analog between Min and Max
- Madgwick Filter
- Absolute Analog Value
- Inverse Analog (Change Sign)
- Frequency Meter
- Min Analog Value
- Square Analog
- Analog Change Only
- Accumulate Analog
- Sine Analog Generator
- Square Root
- Ramp To Analog Value
- Accumulate Angle
- Square Analog Generator
- Max Analog Value
- Speed Change Meter
- Amplitude Meter
- Thermistor Steinhart Hart - 3 Points
- Thermistor Steinhart Hart
- Min Limit Analog
- Analog Array
- 2D Distance
- Max Limit Analog
- 2D Change Distance
- Analog Apply Window
- Add Analog
- Average Analog Period
- Dead Zone Analog
- PID Controller
- Multiply Analog
- Compare Analog Value
- Dead Zone Scaled Analog (Map)
- Acceleration To 3D Angle and Force
- Map Range Analog
- Compare Analog Range
- Divide Analog By Value
- Sliding Window Analog Array
- Interpolate Analog
- Analog Array Snapshot
- Analog Array Delete Items

- Step/Iterate Analog Array Items
- Remember Analog Array
- Analog Toggle Demux
- Analog Array Insert Items
- Get Analog Array Item At Index
- Analog Snapshot
- Analog To Analog Array
- Analog Integrator (Integral)
- Analog Array Replace
- Analog On/Off Switch
- Analog Mux (Multi channel Switch)
- Analog Differentiator (Delta Change)
- Analog Array Replace Items At Index
- Analog Toggle Switch
- Analog Demux (Multiple Output channel Switch)
- Remember Analog Value
- Analog Schmitt Trigger (Hysteresis)
- Calculate Dew Point
- Ignore Analog Values
- Analog Array To Binary
- Speed To Clock/Direction (Stepper Driver)
- Random Analog Generator
- Ignore Analog Ranges
- Speed and Direction To Speed
- Speed To Speed and Direction
- Compass Heading
- Analog Multi Source
- Calculate Heat Index
- Triangle Analog Generator
- Analog Array Value
- Analog Multi-Source Merger
- Calculate Absolute Humidity
- Gauss Analog Generator
- Analog Value
- Analog Array To Analog
- Complementary Angle Filter
- Analog To Unsigned
- Second Order Complementary Angle Filter
- Second Order Complementary Analog Filter
- Celsius To Fahrenheit
- Analog To Text
- Metres To Feet
- Celsius To Kelvin
- Analog To Integer
- Pressure To Altitude
- Complementary Analog Filter
- Altitude Pressure to Sea Level Pressure

Analog Components

Data Sinks Component

- Text
 - Split JSON Object
 - Split JSON Array

Complex Component

- Complex Array Value
- Square Complex Generator
- Complex Array To Complex
- Step/Iterate Complex Array Items
- Complex Value
- Complex Snapshot
- Inverse Complex Fast Fourier (IFFT)
- Remember Complex Array
- Triangle Complex Generator
- Complex Change Only
- Sine Complex Generator
- Complex Array Delete Items
- Complex To Analog
- Complex Array Insert Items
- Inverse Analog Fast Fourier (IFFT)
- Random Complex
- Compare Complex Value
- Forward Fast Fourier (FFT)
- Complex Array Snapshot

- Analog To Complex
- Complex Array Replace Items At Index
- Complex Array
- Complex Array Replace
- Complex Mux (Multi channel Switch)
- Complex Multi Source
- Get Complex Array Item At Index
- Complex Toggle Demux
- Complex Demux (Multiple Output channel Switch)
- Complex Toggle Switch
- Complex On/Off Switch
- Complex Array To Binary

Data Sinks & Complex Components

- Random Clock Generator
- Timeout Timer
- Clock Multi Source
- Start
- Clock Generator
- On/Off Delay
- Clock Mux (Multi channel Switch)
- Detect Edge
- Delay
- Timer (Single Pulse/Clock to Digital)
- Complex Multi Source
- Repeat
- Clock Toggle Demux
- Unsigned Multi Source
- Clock On/Off Switch
- Clock Demux (Multiple Output channel Switch)
- Clock Modified
- Repeat Clock
- Clock Toggle Switch
- Repeat Unsigned
- Repeat Char
- Date/Time Multi Source
- Repeat Complex
- Char Multi Source
- Analog Multi Source
- Repeat Analog
- Binary Multi Source
- Repeat Binary
- Repeat Date/Time
- Digital Multi Source
- Sequence
- Integer Multi Source
- Repeat Text
- Repeat Quaternion
- Repeat Digital
- Text Multi Source
- Repeat Integer
- Quaternion Multi Source

Synchronization Components

Digital Snap Shot

Properties

- Enabled - enables or disables the component.

Pins

- Snapshot - the Snapshot clock input pin of the component or element
- In - the Digital Input pin of the component or element
- Out - the Digital Output pin of the component or element

Digital Boolean

Properties

- Value - specifies the value of the component
- Elements - set digital value or set digital state

Pins

- Clock - the clock input pin of the component or element
- Out - the Digital Output pin of the component or element

SR Flip-Flop

Properties

- Initial Value - set to true or false

Pins

- Set - set input pin of the component
- Reset - reset input pin of the component
- Inverted - the Inverted Digital Output pin of the Flip-Flop
- Out - the Digital Output pin of the component or element

Toggle (T) Flip-Flop

Properties

- Initial Value - set to True or False

Pins

- Toggle - the Toggle input pin of the component
- Clock - the clock input pin of the component or element
- Set - set input pin of the component
- Reset - reset input pin of the component
- Inverted - the Inverted Digital Output pin of the Flip-Flop
- Out - the Digital Output pin of the component or element

Digital Mux (Multi channel switch)

Properties

- InitialChannel - Digital Mux(Multi channel Switch).InitialChannel

Pins

- Select - the Unsigned Integer "Select Input Muxer Channel" Input Pin of the component or element
- In - the Digital Input pins of the component or element
- Out - the Digital Output pin of the component

Digital Demux (Multi channel output switch)

Properties

- InitialChannel - initial channel when the execution starts.

Pins

- In - Input pin of the demuxer. The data from this pin will be sent to the selected out pin
- Out - Output pins. The data from the input pin will be sent to the one of the output pins indicated by the value received in the Select pin
- Select - selects the output pin where the data will be sent

Digital Multi-Source Merger

Pins

- In - Input pins. Data received in any of the pins will be sent to the Output pin.
- Out - output pin where the data from the In pins is sent.

Remember Digital Value

Properties

- Enabled - enables or disable the component.

Pins

- Remember - Remember Digital Value.RememberInputPin
- Recall - Remember Digital Value.RecallInputPin
- In - The Digital Input pin of the component or element
- Out - The Digital Output pin of the component or element

Data (D) Flip-Flop

Properties

- InitialValue - Set to True or False

Pins

- Data - The Data Digital input pin of the D Flip-Flop
- Clock - The clock input pin of the component or element
- Set - Set input pin of the component
- Reset - Reset input pin of the component
- Inverted - The Inverted Digital Output pin of the Flip-Flop
- Out - The Digital Output pin of the component or element

Digital Components

Digitals to Unsigned (Binary Encoder)

Properties

- Enabled – Enables or Disables the component.

Pins

- In - Digitals To Unsigned.InputPins
- Out - the Unsigned Integer Output pin of the component or element

Pulse Meter

Properties

- Enabled - enables or disable the component.

Pins

- Out - the Integer Output pin of the component or element
- In - the Digital Input pin of the component or element

Priority Binary Decoder

Properties

- InitialValue - specifies the initial value of the component
- ValueBar - Binary Decoder Value

Pins

- Out - the Digital output pins of the Binary Decoder
- In - the Unsigned Integer Input pin of the component or element

Digital Array

Properties

- Elements - Digital Array.Elements
- InitialIndex - Array index number

Pins

- Index - Digital Array.IndexInputPin
- Clock - The clock input
- Out - the Digital Output pin of the component or element

JK Flip-Flop

Properties

- InitialValue - set to True or false

Pins

- J - the J(Set) Digital Input pin of the J-K Flip-Flop
- K - the J(Reset) Digital Input pin of the J-K Flip-Flop
- Clock - the clock input pin of the component or element
- Inverted - the Inverted Digital Output pin of the Flip-Flop
- Out - the Digital Output pin of the component or element

Random Digital Generator

Properties

- Seed - Sets the seed value
- Enabled - enables or disables the component

Pins

- Clock - CommonClockedBooleanSource.ClockInputPin
- Out - the Digital Output pin of the component or element

Pulse Generator

Properties

- Frequency - specifies the Frequency of the generator
- InitialValue - specifies the initial value of the generator
- Enabled - enables or disable the component.

Pins

- Out - the Digital Output pin of the component or element

Priority Binary Encoder

Pins

- In - the Digital input pins of the Priority Encoder
- Out - the Unsigned Integer Output pin of the component or element

Digital (Boolean) And

Pins

- In - Input pins. The Output pin will equal the result of Boolean And operation between the input pins.
- Out - output pin where the result is sent.

Digital Components



Digital To Char

Properties

- TrueValue - specifies the output value when the input is True
- FalseValue - specifies the output value when the input is False

Pins

- In - the Input Pin of the component.
- Out - the Output Pin of the component.

Digital To Binary

Properties

- TrueValue - specifies the output value when the input is True
- FalseValue - specifies the output value when the input is False

Pins

- In - the Input Pin of the component.
- Out - the Output Pin of the component.

Digital To Text

Properties

- TrueValue - specifies the output value when the input is True
- FalseValue - specifies the output value when the input is False

Pins

- Out - theText Output pin of the component or element
- In - the Digital Input pin of the component or element

Auto Repeat Button

Properties

- Enabled - enables or Disables the component.
- InitialDelay(mS) - specifies the initial delay before the repeat starts.
- RepeatFrequency(Hz) - specifies the Repeat frequency for the button

Pins

- In - the Input Pin of the component.
- Out - the Output Pin of the component.

Digital To Date/Time

Properties

- TrueValue - Digital To Date/Time.TrueValue
- FalseValue - Digital To Date/Time.FalseValue

Pins

- Out - Digital To Date/Time.OutputPin
- In - the Digital Input pin of the component or element

Digital To Analog

Properties

- TrueValue - specifies the output value when the input is True
- FalseValue - specifies the output value when the input is False

Pins

- Out - the Analog Output pin of the component or element
- In - the Digital Input pin of the component or element

Digital To Unsigned

Properties

- TrueValue - specifies the output value when the input is True
- FalseValue - specifies the output value when the input is False

Pins

- Out - the Unsigned Integer Output pin of the component or element
- In - the Digital Input pin of the component or element

Digital To Integer

Properties

- TrueValue - specifies the output value when the input is True
- FalseValue - specifies the output value when the input is False

Pins

- Out - the Integer Output pin of the component or element
- In - the Digital Input pin of the component or element

Digital (Boolean) Change Only

Properties

- Enabled - enables or disables the component. If the component is enabled, only if the newly arriving data differs than the last previously arrived data, the value will be sent to the Output Pin. If the component is Disabled, any data arriving to the input pin will be sent to the Output Pin.

Pins

- In - the Input Pin of the component.
- Out - the Output Pin of the component.

Digital Components



Digital Toggle Demux

Properties

- Initial Select Value - initial channel when the execution starts.

Pins

- In - input pin of the demuxer. The data from this pin will be sent to the selected True or False out pin
- Select - selects the True or False output pin where the data will be sent
- True - the True Output pin. If Select receives True the data from the In Pin will be sent through this pin.
- False - the False Output pin. If Select receives False the data from the In Pin will be sent through this pin.

Digital Multi Source

Pins

- In - input pin where the data arrives to be sent through the Out pins. Any data that arrives on this pin will be sent to every output pin in order from the first to the last output pin.
- Out - output pins where the data received in the In pin is sent. The data is sent in order from the first to the last pin.

Digital (Boolean) Xor

Pins

- In - Input pins. The Output pin will equal the result of Boolean Xor (Exclusive Or) operation between the input pins.
- Out - Output pin where the result is sent.

Boolean (Digital) Or

Pins

- In - Input pins. The Output pin will equal the result of Boolean Xor (Exclusive Or) operation between the input pins.
- Out - Output pin where the result is sent.

Digital (Boolean) Inverter (Not)

Properties

- Enabled - enables or disable the component.

Pins

- In - the Digital Input pin of the component or element
- Out - the Digital Output pin of the component or element

Debounce Button

Properties

- Debounce Interval - specifies the debouncing time in ms

Pins

- In - Input pin
- Out - Output pin

Digital On/Off Switch

Properties

- Enabled - Enables or disables the component

Pins

- In - Digital On/Off Switch.InputPin
- Enable - Digital On/Off Switch enable
- Out - the Digital Output pin of the component or element

Digital Toggle Switch

Properties

- Initial Select Value - Digital Toggle Switch select value

Pins

- True - the Digital Input pin to be used when Select input pin is True
- False - the Digital Input pin to be used when Select input pin is False
- Select - selects one of the inputs as source for the output of the component
- Out - the Digital Output pin of the component or element

Digital Components



Ignore Date/Time Ranges

Properties

- Elements - list of ranges to be excluded
- Enabled - enables or Disables the component.

Pins

- In - the Input Pin of the component.
- Out - the Output Pin of the component.
- Ignored - Output pin indicating whether the input value was ignored.

Date/Time Snapshot

Properties

- Enabled - enables or disable the component.

Pins

- Snapshot - Date/Time Snapshot.SnapshotInputPin
- In - the Date/Time Input pin of the component or element
- Out - the Date/Time Output pin of the component or element

Digital To Analog

Properties

- TrueValue - specifies the output value when the input is True
- FalseValue - specifies the output value when the input is False

Pins

- Out - the Analog Output pin of the component or element
- In - the Digital Input pin of the component or element

Date/Time to Unix Epoch

Properties

- Milliseconds - indicates whether the Milliseconds should be included in the time output

Pins

- In - the Input Pin of the component.
- Out - the Output Pin of the component.

Date/Time Multi-Source Merger

Pins

- In - DateTimeMultiInputSource.InputPins
- Out - the Date/Time Output pin of the component or element

Remember Date/Time Value

Properties

- Enabled - enables or disable the component.

Pins

- Remember - Remember Date/Time Value.RememberInputPin
- Recall - Remember Date/Time Value.RecallInputPin
- In - the Date/Time Input pin of the component or element
- Out - the Date/Time Output pin of the component or element

Ignore Date/Time Values

Properties

- Enabled - enables or Disables the component.
- PassEqualValues - if True the values equal to the Value property will pass through the filter.
- PassValuesBellow - if True the values bellow to the Value property will pass through the filter. If False the values Above will pass.
- Value - value specifying the limit

Pins

- In - the Input Pin of the component.
- Out - the Output Pin of the component.

Unix Epoch to Date/Time

Properties

- Milliseconds - indicates whether the Milliseconds should be included in the time output

Pins

- In - the Input Pin of the component.
- Out - the Output Pin of the component.

Min Date/Time Value

Properties

- Enabled - enables or Disables the component.

Pins

- In - the Input Pin of the component.
- Out - the Output Pin of the component.
- Reset - resets the component

Date/Time Components



Internet Time Protocol

Properties

- BaseDate – specifies the Base Date (01/01/1900)
- DaylightOffset –specifies the Daylight Saving Time Offset
- Enabled – enables or disables the component.
- SetPort – if True the Socket Port Number will be set automatically by the component.
- TimeZoneOffset(H) – specifies the Time Zone Offset

Pins

- Clock - The clock input pin of the component
- Out - The Output Pin of the component.
- Socket – The Socket Pin of the component. Connect this pin to a TCP/IP Client Socket.

Network Time Protocol

Properties

- BaseDate – specifies the Base Date (01/01/1900)
- DaylightOffset –specifies the Daylight Saving Time Offset
- Enabled – enables or disables the component.
- SetPort – if True the Socket Port Number will be set automatically by the component.
- TimeZoneOffset(H) – specifies the Time Zone Offset

Pins

- Clock - The clock input pin of the component
- Out - The Output Pin of the component.
- Socket – The Socket Pin of the component. Connect this pin to a TCP/IP Client Socket.

Compare Date/Time Value

Properties

- Compare Type - specifies the compare type
- Enabled - enables or disables the component.
- Only Changed – send to the output only if the compare result has changed.
- Value - specifies the Value to be used for the comparison

Pins

- In – the Input Pin of the component.
- Out - the Output Pin of the component indicating the result of the comparison

Date/Time Array

Properties

- Elements - Date/Time Array.Elements
- InitialIndex - Date/Time Array.InitialIndex

Pins

- Index - y Date/Time Array.IndexInputPin
- Clock - CommonClockedDateTimeSource.ClockInputPin
- Out - the Date/Time Output pin of the component or element

Random Date/Time Generator

Properties

- Min - specifies the minimum range for the generated values
- Max - specifies the maximum range for the generated values
- Seed - specifies the seed for the random generator
- Enabled - enables or disable the component.

Pins

- Clock - the clock input pin of the component or element
- Out - the Date/Time Output pin of the component or element

Max Date/Time Value

Properties

- Enabled - enables or Disables the component.

Pins

- In - the Input Pin of the component.
- Out - the Output Pin of the component.
- Reset - resets the component

Date/Time Change Only

Properties

- Enabled - enables or disables the component. If the component is enabled, only if the newly arriving data differs than the last previously arrived data, the value will be sent to the Output Pin. If the component is Disabled, any data arriving to the input pin will be sent to the Output Pin.

Pins

- In - the Input Pin of the component.
- Out - the Output Pin of the component.

Date/Time Mux (Multi channel Switch)

Properties

- InitialChannel - Date/Time Mux(Multi channel Switch).InitialChannel

Pins

- Select - Date/Time Mux(Multi channel Switch).SelectInputPin
- In - DateTimeMultiInputSource.InputPins
- Out - the Date/Time Output pin of the component or element

Compare Date/Time Range

Properties

- Enabled – enables or disables the component.
- Include Limits – if True the Min/Max limits will be included.
- Is Outside Range – if True, the component will try to match the outside of the range.
- Only Changed – send to the output only if the compare result has changed.
- Range – specifies the Min/Max range

Pins

- In – the Input Pin of the component.
- Out - the Output Pin of the component indicating the result of the check

Date/Time Components



CPU Time

Properties

- Elements - list of optional time clocks
- Enabled - enables or Disables the component.

Pins

- Clock - the clock input pin of the component
- MicroSeconds - micro Seconds since the execution had started
- MilliSeconds - milli Seconds since the execution had started

Compile Date/Time

Properties

- Enabled - enables or disable the component.

Pins

- Clock - the clock input pin of the component or element
- Out - the Date/Time Output pin of the component or element

Add Date/Time

Properties

- Days - days to add
- Enabled - enables or Disables the component.
- Hours - hours to add
- MilliSeconds - milliSeconds to add
- Minutes - minutes to add
- Months - months to add
- Seconds - seconds to add
- Years - years to add

Pins

- In - the Input Pin of the component
- Out - the Output Pin of the component

Date/Time Demux (Multiple Output channel Switch)

Properties

- InitialChannel - initial channel when the execution starts.

Pins

- In - Input pin of the demuxer. The data from this pin will be sent to the selected out pin
- Out - Output pins. The data from the input pin will be sent to the one of the output pins indicated by the value received in the Select pin
- Select - Selects the output pin where the data will be sent

Date/Time Toggle Switch

Properties

- InitialSelectValue - Date/Time Toggle Switch.InitialSelectValue

Pins

- True - Date/Time Toggle Switch.TrueInputPin
- False - Date/Time Toggle Switch.FalseInputPin
- Select - Date/Time Toggle Switch.SelectInputPin
- Out - the Date/Time Output pin of the component or element

Date/Time Toggle Demux

Properties

- InitialSelectValue - initial channel when the execution starts

Pins

- In - input pin of the demuxer. The data from this pin will be sent to the selected True or False out pin
- Select - selects the True or False output pin where the data will be sent
- True - the True Output pin. If Select receives True the data from the In Pin will be sent through this pin.
- False - the False Output pin. If Select receives False the data from the In Pin will be sent trough this pin.

Date/Time Multi Source

Pins

- In - input pin where the data arrives to be sent trough the Out pins. Any data that arrives on this pin will be sent to every output pin in order from the first to the last output pin.
- Out - output pins where the data received in the In pin is sent. The data is sent in order from the first to the last pin.

Decode (Split) Date/Time

Pins

- Out - the Integer Output pins of the component or element
- In - the Date/Time Input pin of the component or element

Encode (Make) Date/Time

Properties

- InitialValue - Specifies the initial Date/Time value
- Enabled - Enables or disable the component.

Pins

- In - the Integer Input pins of the component or element
- Clock - the clock input pin of the component or element
- Out - the Date/Time Output pin of the component or element

Date/Time Components



Date/Time On/Off Switch

Properties

- InitialEnabled - Date/Time On/Off Switch.InitialEnabled

Pins

- In - Date/Time On/Off Switch.InputPin
- Enable - Date/Time On/Off Switch.EnableInputPin
- Out - the Date/Time Output pin of the component or element

Xor Unsigned Value

Properties

- Value - specifies the Value for the operation
- Enabled - enables or disable the component.

Pins

- In - the Unsigned Integer Input pin of the component or element
- Out - the Unsigned Integer Output pin of the component or element

Not (Invert) Unsigned Value

Properties

- Enabled - enables or disable the component.

Pins

- In - the Unsigned Integer Input pin of the component or element
- Out - the Unsigned Integer Output pin of the component or element

Add Unsigned Value

Properties

- Value - CommonValueOneMathUnsignedFilter.Value
- Enabled - enables or disable the component.

Pins

- In - the Unsigned Integer Input pin of the component or element
- Out - the Unsigned Integer Output pin of the component or element

Unsigned Mux (Multi channel Switch)

Properties

- InitialChannel - Unsigned Mux(Multi channel Switch).InitialChannel

Pins

- Select - the Unsigned Integer "Select Input Muxer Channel" Input Pin of the component or element
- In - the Unsigned Integer Input pins of the component or element
- Out - the Unsigned Integer Output pin of the component or element

And Unsigned Value

Properties

- Value - specifies the Value for the operation
- Enabled - enables or disable the component.

Pins

- In - the Unsigned Integer Input pin of the component or element
- Out - the Unsigned Integer Output pin of the component or element

Or Unsigned Value

Properties

- Value - specifies the Value for the operation
- Enabled - enables or disable the component.

Pins

- In - the Unsigned Integer Input pin of the component or element
- Out - the Unsigned Integer Output pin of the component or element

Subtract Unsigned From Value

Properties

- Value - CommonValueOneMathUnsignedFilter.Value
- Enabled - enables or disable the component.

Pins

- In - the Unsigned Integer Input pin of the component or element
- Out - the Unsigned Integer Output pin of the component or element

Date/Time Demux (Multiple Output channel Switch)

Properties

- InitialChannel - initial channel when the execution starts.

Pins

- In - Input pin of the demuxer. The data from this pin will be sent to the selected out pin
- Out - Output pins. The data from the input pin will be sent to the one of the output pins indicated by the value received in the Select pin
- Select - Selects the output pin where the data will be sent

Divide Unsigned Value

Properties

- Value - CommonValueOneMathUnsignedFilter.Value
- Enabled - enables or disable the component.

Pins

- In - the Unsigned Integer Input pin of the component or element
- Out - the Unsigned Integer Output pin of the component or element

Unsigned Components



Max Limit Unsigned

Properties

- Enabled – enables or disables the component.
- Value – value specifying the limit

Pins

- In – the Input Pin of the component.
- Out – the Output Pin of the component.

Divide Unsigned By Value

Properties

- Value - `CommonValueOneMathUnsignedFilter.Value`
- Enabled - enables or disable the component.

Pins

- In - the Unsigned Integer Input pin of the component or element
- Out - the Unsigned Integer Output pin of the component or element

Min Limit Unsigned

Properties

- Enabled – enables or disables the component.
- Value – value specifying the limit

Pins

- In – the Input Pin of the component.
- Out – the Output Pin of the component.

Subtract Unsigned Value

Properties

- Value - `CommonValueOneMathUnsignedFilter.Value`
- Enabled - enables or disable the component.

Pins

- In - the Unsigned Integer Input pin of the component or element
- Out - the Unsigned Integer Output pin of the component or element

Multiply Unsigned by Value

Properties

- Value - `CommonValueOneMathUnsignedFilter.Value`
- Enabled - enables or disable the component.

Pins

- In - the Unsigned Integer Input pin of the component or element
- Out - the Unsigned Integer Output pin of the component or element

Ignore Unsigned Values

Properties

- Enabled – enables or disables the component.
- Pass Equal Values – If True the values equal to the Value property will pass through the filter.
- Pass Values Below – If True the values below to the Value property will pass through the filter. If False the values Above will pass.
- Value – value specifying the limit

Pins

- In – the Input Pin of the component.
- Out – the Output Pin of the component.

Remember Unsigned Value

Properties

- Enabled - enables or disable the component.

Pins

- Remember - `Remember Unsigned Value.RememberInputPin`
- Recall - `Remember Unsigned Value.RecallInputPin`
- In - the Unsigned Integer Input pin of the component or element
- Out - the Unsigned Integer Output pin of the component or element

Unsigned Schmitt Trigger (Hysteresis)

Properties

- Value - `Unsigned Schmitt Trigger (Hysteresis).Value`
- Threshold - `Unsigned Schmitt Trigger (Hysteresis).Threshold`
- InitialValue - `Unsigned Schmitt Trigger (Hysteresis).InitialValue`
- Inverted - `Unsigned Schmitt Trigger (Hysteresis).Inverted`
- Enabled - `CommonUnsignedEnableSink.Enabled`

Pins

- Out - `Unsigned Schmitt Trigger (Hysteresis).OutputPin`
- In - the Unsigned Integer Input pin of the component or element

Unsigned Array

Properties

- Elements - `Unsigned Array.Elements`
- InitialIndex - `Unsigned Array.InitialIndex`

Pins

- Index - `Unsigned Array.IndexInputPin`
- Clock - The clock input pin of the component or element
- Out - The Unsigned Integer Output pin of the component or element

Unsigned Components



Unsigned Snapshot

Properties

- Enabled - enables or disable the component.

Pins

- Snapshot - the Snapshot clock input pin of the component or element
- In - the Unsigned Integer Input pin of the component or element
- Out - the Unsigned Integer Output pin of the component or element

Ignore Unsigned Ranges

Properties

- Elements – list of ranges to be excluded
- Enabled – enables or Disables the component.

Pins

- In – the Input Pin of the component.
- Out – the Output Pin of the component.
- Ignored – output pin indicating whether the input value was ignored.

Unsigned To Text

Properties

- Base - specifies the Base for the conversion

Pins

- Out - the Text Output pin of the component or element
- In - the Unsigned Integer Input pin of the component or element

Unsigned To Integer

Properties

- Constrain - specifies if the sign bit will be included or excluded (Constrained)

Pins

- Out - the Integer Output pin of the component or element
- In - the Unsigned Integer Input pin of the component or element

Unsigned To Digital

Properties

- InitialValue - specifies the initial value of the component

Pins

- Out - the Digital output pins for the bits of the Unsigned Integer
- In - the Unsigned Integer Input pin of the component or element

Compare Unsigned Value

Properties

- Value - specifies the Value to be used for the comparison
- CompareType - specifies the compare type
- OnlyChanged - Compare Unsigned Value.OnlyChanged
- Enabled - CommonUnsignedEnableSink.Enabled

Pins

- Out - the Digital Output pin of the component or element
- In - the Unsigned Integer Input pin of the component or element

Unsigned Multi-Source Merger

Pins

- In - the Unsigned Integer Input pins of the component or element
- Out - the Unsigned Integer Output pin of the component or element

Unsigned Toggle Demux

Properties

- InitialSelectValue - initial channel when the execution starts.

Pins

- In – input pin of the demuxer. The data from this pin will be sent to the selected True or False out pin
- Select – selects the True or False output pin where the data will be sent
- True – the True Output pin. If Select receives True the data from the In Pin will be sent through this pin.
- False – the False Output pin. If Select receives False the data from the In Pin will be sent through this pin.

Add Unsigned

Pins

- In - MathUnsignedMultiInput.InputPins
- Clock - the clock input pin of the component or element
- Out - the Unsigned Integer Output pin of the component or element

Unsigned Components



Multiply Unsigned

Pins

- In - MathUnsignedMultiInput.InputPins
- Clock - the clock input pin of the component or element
- Out - the Unsigned Integer Output pin of the component or element

Digitals To Unsigned (Binary Encoder)

Pins

- In - Digitals To Unsigned.InputPins
- Out - the Unsigned Integer Output pin of the component or element

Sine Unsigned Generator

Properties

- Amplitude - specifies the Amplitude of the generator
- Offset - specifies the Offset of the generator
- Frequency - specifies the Frequency of the generator
- Phase - specifies the Phase of the generator
- Enabled - enables or disable the component.

Pins

- Clock - the clock input pin of the component or element
- Out - the Unsigned Integer Output pin of the component or element

Gauss Unsigned Generator

Properties

- Mean - Gauss Unsigned Generator.Mean
- StandardDeviation - Gauss Unsigned Generator.StandardDeviation
- Seed - Gauss Unsigned Generator.Seed
- Enabled - enables or disable the component.

Pins

- Clock - the clock input pin of the component or element
- Out - the Unsigned Integer Output pin of the component or element

Random Unsigned Generator

Properties

- Min - specifies the minimum range for the generated values
- Max - specifies the maximum range for the generated values
- Seed - specifies the seed for the random generator
- Enabled - enables or disable the component.

Pins

- Clock - the clock input pin of the component or element
- Out - the Unsigned Integer Output pin of the component or element

Text Demux (Multiple Output channel Switch)

Properties

- InitialChannel – initial channel when the execution starts.

Pins

- In – input pin of the demuxer. The data from this pin will be sent to the selected out pin
- Out – output pins. The data from the input pin will be sent to the one of the output pins indicated by the value received in the Select pin
- Select – selects the output pin where the data will be sent

Text To Unsigned

Properties

- Base - Text To Unsigned.Base

Pins

- Out - the Unsigned Integer Output pin of the component or element
- In - the Text Input pin of the component or element

Analog To Unsigned

Properties

- Round - specifies if the Analog value will be rounded or truncated when converting
- Constrain - specifies if the sign bit will be included or excluded (Constrained)
- Scale - specifies the scale factor for the conversion

Pins

- Out - the Unsigned Integer Output pin of the component or element
- In - the Analog Input pin of the component or element

Char Demux (Multiple Output channel Switch)

Properties

- InitialChannel – initial channel when the execution starts.

Pins

- In – input pin of the demuxer. The data from this pin will be sent to the selected out pin
- Out – output pins. The data from the input pin will be sent to the one of the output pins indicated by the value received in the Select pin
- Select – selects the output pin where the data will be sent

Unsigned Components

Integer Demux(Multiple Output channel Switch)

Properties

- InitialChannel – initial channel when the execution starts.

Pins

- In – input pin of the demuxer. The data from this pin will be sent to the selected out pin
- Out – output pins. The data from the input pin will be sent to the one of the output pins indicated by the value received in the Select pin
- Select – selects the output pin where the data will be sent

Integer To Unsigned

Properties

- Constrain - specifies if the sign bit will be included or excluded (Constrained)

Pins

- Out - the Unsigned Integer Output pin of the component or element
- In - the Integer Input pin of the component or element

Digital To Unsigned

Properties

- TrueValue - specifies the output value when the input is True
- FalseValue - specifies the output value when the input is False

Pins

- Out - the Unsigned Integer Output pin of the component or element
- In - the Digital Input pin of the component or element

Limit Unsigned between Min and Max

Properties

- Enabled – enables or disables the component.
- Max - value specifying the Max limit
- Min - value specifying the Min limit

Pins

- In – the Input Pin of the component.
- Out – the Output Pin of the component.

Accumulate (Integral) Unsigned

Properties

- Enabled – enables or disables the component.
- InitialValue - the initial value of the component.

Pins

- In – the Input Pin of the component.
- Out – the Output Pin of the component.
- Reset – clocking this pin resets the component to Initial Value.

Unsigned Multi Source

Pins

- In - Input pin where the data arrives to be sent through the Out pins. Any data that arrives on this pin will be sent to every output pin in order from the first to the last output pin.
- Out - Output pins where the data received in the In pin is sent. The data is sent in order from the first to the last pin.

Min Unsigned Value

Properties

- Enabled – enables or disables the component.

Pins

- In – the Input Pin of the component.
- Out – the Output Pin of the component.
- Reset – resets the component

Max Unsigned Value

Properties

- Enabled – enables or disables the component.

Pins

- In – the Input Pin of the component.
- Out – the Output Pin of the component.
- Reset – resets the component

Unsigned Change Only

Properties

- Enabled – enables or disables the component. If the component is enabled, only if the newly arriving data differs than the last previously arrived data, the value will be sent to the Output Pin. If the component is Disabled, any data arriving to the input pin will be sent to the Output Pin.
- Threshold – specifies the minimal Threshold (Difference) between the samples above which the data is considered changed.

Pins

- In – the Input Pin of the component.
- Out – the Output Pin of the component.
- Difference – This pin will output the value difference between the two samples.

Unsigned Components

Triangle Unsigned Generator

Properties

- Asymmetry - specifies the Asymmetry of the generated wave
- Amplitude - specifies the Amplitude of the generator
- Offset - specifies the Offset of the generator
- Frequency - specifies the Frequency of the generator
- Phase - specifies the Phase of the generator
- Enabled - enables or disable the component.

Pins

- Clock - the clock input pin of the component or element
- Out - the Unsigned Integer Output pin of the component or element

Square Unsigned Generator

Properties

- Asymmetry - specifies the Asymmetry of the generated wave
- Amplitude - specifies the Amplitude of the generator
- Offset - specifies the Offset of the generator
- Frequency - specifies the Frequency of the generator
- Phase - specifies the Phase of the generator
- Enabled - enables or disable the component.

Pins

- Clock - the clock input pin of the component or element
- Out - the Unsigned Integer Output pin of the component or element

Unsigned To Analog

Properties

- Scale - specifies the scale factor for the conversion

Pins

- Out - the Analog Output pin of the component or element
- In - the Unsigned Integer Input pin of the component or element

Unsigned Value

Properties

- Value - specifies the value of the component
- Elements - Unsigned Value.Elements

Pins

- Clock - the clock input pin of the component or element
- Out - the Unsigned Integer Output pin of the component or element

Unsigned Components

JK Flip-Flop

Properties

- InitialValue - BasicFlipFlop.InitialValue

Pins

- J - the J(Set) Digital Input pin of the J-K Flip-Flop
- K - the J(Reset) Digital Input pin of the J-K Flip-Flop
- Clock - the clock input pin of the component or element
- Inverted - the Inverted Digital Output pin of the Flip-Flop
- Out - the Digital Output pin of the component or element

Data (D) Flip-Flop

Properties

- InitialValue - BasicFlipFlop.InitialValue

Pins

- Data - the Data Digital input pin of the D Flip-Flop
- Clock - the clock input pin of the component or element
- Set - set input pin of the component
- Reset - reset input pin of the component
- Inverted - the Inverted Digital Output pin of the Flip-Flop
- Out - the Digital Output pin of the component or element

Toggle (T) Flip-Flop

Properties

- InitialValue - BasicFlipFlop.InitialValue

Pins

- Toggle - the Toggle input pin of the component
- Clock - the clock input pin of the component or element
- Set - set input pin of the component
- Reset - reset input pin of the component
- Inverted - the Inverted Digital Output pin of the Flip-Flop
- Out - the Digital Output pin of the component or element

SR Flip-Flop

Properties

- InitialValue - BasicFlipFlop.InitialValue

Pins

- Set - set input pin of the component
- Reset - reset input pin of the component
- Inverted - the Inverted Digital Output pin of the Flip-Flop
- Out - the Digital Output pin of the component or element

Flip-Flops Components

SERVER | Modbus Device

Properties

- Modbus – the Modbus Input pin of the component usually used to connect to one or more Modbus Server (Slave) protocol components.

Pins

- ID – specifies the Modbus device ID.
- Tables – collection of Coils, Digital Inputs, Holding Registers, and Inputs Registers tables.

Modbus Server (Slave) Raw Protocol

Pins

- In – the Input Pin for the Modbus protocol data.
- Out – the Output Pin for the Modbus protocol data.
- Modbus – the Modbus Output pin of the component usually used to connect to one or more Modbus Devices components. Can also be connected to a Modbus Client(Master) protocol to implement a Modbus bridge.

Modbus Server (Slave) Serial Protocol (RTU and Ascii)

Properties

- Ascii Format – if set to True Ascii format will be used. Otherwise RTU Format will be used.
- Input Buffer Size Limit – specifies the maximal size of the input buffers. This is useful when using RTU protocol and the end of message gap (Packet Detect Interval) is not detected.
- Packet Detect Interval (mS) – specifies the interval indicating one message has ended and another started when using RTU Protocol.

Pins

- In – the Input Pin for the Modbus protocol data.
- Out – the Output Pin for the Modbus protocol data.
- Modbus – the Modbus Output pin of the component usually used to connect to one or more Modbus Devices components. Can also be connected to a Modbus Client(Master) protocol to implement a Modbus bridge.

Modbus Server (Slave) TCP/IP Protocol

Pins

- In – the Input Pin for the Modbus protocol data.
- Out – the Output Pin for the Modbus protocol data.
- Modbus – the Modbus Output pin of the component usually used to connect to one or more Modbus Devices components. Can also be connected to a Modbus Client(Master) protocol to implement a Modbus bridge.

CLIENT | Modbus Remote Device Access

Properties

- ID – specifies the Modbus device ID.
- Requests – collection of Coils, Digital Inputs, Holding Registers, and Inputs Registers Read/Write requests.

Pins

- Modbus – the Modbus Output pin of the component usually used to connect to one or more Modbus Client (Master) protocol components.
- Error – the Error Output pin indicating different type of errors if there was error performing request to the device.
- Exception – the Exception Output pin indicating different type of Exceptions reported by the Device.

Modbus Client (Master) Serial Protocol (RTU and Ascii)

Properties

- Ascii Format – if set to True Ascii format will be used. Otherwise RTU Format will be used.
- Input Buffer Size Limit – specifies the maximal size of the input buffers. This is useful when using RTU protocol and the end of message gap (Packet Detect Interval) is not detected.
- Max Transactions – specifies the maximum number of transaction requests waiting for response.
- Packet Detect Interval (mS) – specifies the interval indicating one message has ended and another started when using RTU Protocol.
- Response Timeout (mS) – specifies the maximum amount of time to wait for a response before it is determined that the server has failed to respond.

Pins

- In – the Input Pin for the Modbus protocol data.
- Out – the Output Pin for the Modbus protocol data.
- Modbus – the Modbus Input pin of the component usually used to connect to one or more Modbus Remote Device Access components. Can also be connected to a Modbus Server(Slave) protocol to implement a Modbus bridge.

Modbus Client (Master) TCP/IP Protocol

Properties

- Max Transactions – specifies the maximum number of transaction requests waiting for response.
- Response Timeout(mS) – specifies the maximum amount of time to wait for a response before it is determined that the server has failed to respond.

Pins

- In – the Input Pin for the Modbus protocol data.
- Out – the Output Pin for the Modbus protocol data.
- Modbus – the Modbus Input pin of the component usually used to connect to one or more Modbus Remote Device Access components. Can also be connected to a Modbus Server(Slave) protocol to implement a Modbus bridge.

Modbus Client (Master) Raw Protocol

Pins

- In – the Input Pin for the Modbus protocol data.
- Out – the Output Pin for the Modbus protocol data.
- Modbus – the Modbus Input pin of the component usually used to connect to one or more Modbus Remote Device Access components. Can also be connected to a Modbus Server(Slave) protocol to implement a Modbus bridge.

Modbus Components



Compare Quaternion Value

Properties

- Compare Type - specifies the compare type
- Enabled - enables or disables the component.
- Only Changed - send to the output only if the compare result has changed.
- Value - specifies the Value to be used for the comparison

Pins

- In - the Input Pin of the component.
- Out - the Output Pin of the component indicating the result of the comparison

Quaternion Demux (Multiple Output channel Switch)

Properties

- InitialChannel - initial channel when the execution starts.

Pins

- In - input pin of the demuxer. The data from this pin will be sent to the selected out pin
- Out - output pins. The data from the input pin will be sent to the one of the output pins indicated by the value received in the Select pin
- Select - selects the output pin where the data will be sent

Quaternion Mux (Multi channel Switch)

Properties

- InitialChannel - initial channel when the execution starts.

Pins

- In - input pins of the Mux. The data from the input pin index specified by the value of the Select pin will be sent to the one of the output pin.
- Out - output pin. The data from the selected Input Pin will be sent to this pin.
- Select - selects the input pin from where the data will be sent

Quaternion Array

Properties

- Elements - elements containing the values of the array.
- Initial Index - specifying the initially selected Index of the array.

Pins

- Clock - The clock input pin of the component.
- Out - The Output Pin of the component.
- Index - The Index Input Pin specifying which element of the array will be sent to the output pin.

Quaternion Snapshot

Properties

- Enabled - enables or disables the component.

Pins

- In - the Input Pin of the component.
- Out - the Output Pin of the component.
- Snapshot - the Snapshot clock input pin of the component or element. When this pin is clocked the latest data that had arrived on the Input will be sent to the Output Pin

Random Quaternion

Properties

- Enabled - enables or Disables the component.
- Max - specifies the maximum range for the generated values
- Min - specifies the minimum range for the generated values
- Seed - specifies the seed for the random generator

Pins

- Clock - the clock input pin of the component. When connected the component will generate new value only when clock signal is sent to the pin. Otherwise the component will constantly generate new values one after another.
- Out - the Output pin of the component

Quaternion On/Off Switch

Properties

- Ignore Same - if set to True only changing from sample to sample values will be sent to the output.
- Initial Enabled - the initial Enabled Value.
- Send on Enable - if set to True the latest preciously received value will be sent out when the component switches from Disable to Enabled

Pins

- Enable - the Enable Input Pin of the component.
- In - the Input Pin of the component.
- Out - the Output Pin of the component.

Analog to Quaternion

Properties

- Enabled - enables or disables the component.

Pins

- Imaginary - the X, Y, and Z Input Pins for the Imaginary part of the Quaternion
- Real - the Input Pin for the Real part of the Quaternion
- Out - the Output Pin of the component.

Quaternion Multi Source

Pins

- In - Input pin where the data arrives to be sent trough the Out pins. Any data that arrives on this pin will be sent to every output pin in order from the first to the last output pin.
- Out - Output pins where the data received in the In pin is sent. The data is sent in order from the first to the last pin.

Quaternion Components



Quaternion To Analog

Properties

- Enabled – enables or disables the component.

Pins

- In – the Input Pin of the component.
- Imaginary – the X, Y, and Z Output Pins for the Imaginary part of the Quaternion
- Real - the Output Pin for the Real part of the Quaternion

Quaternion Toggle Demux

Properties

- InitialSelectValue - initial channel when the execution starts

Pins

- In - input pin of the demuxer. The data from this pin will be sent to the selected True or False out pin
- Select - selects the True or False output pin where the data will be sent
- True - the True Output pin. If Select receives True the data from the In Pin will be sent through this pin.
- False - the False Output pin. If Select receives False the data from the In Pin will be sent through this pin.

Quaternion Toggle Switch

Properties

- InitialSelectValue - initial channel when the execution starts.

Pins

- Select – selects the input pin from where the data will be sent
- Out – output pins. The data from the input pin will be sent to the one of the output pins indicated by the value received in the Select pin
- True - the True Input pins of the Switch. The data from this pin will be sent to the output if True is sent to the Select Pin.
- False - the False Input pins of the Switch. The data from this pin will be sent to the output if True is sent to the Select Pin.

Quaternion Value

Properties

- Elements – optional elements that can change the output value in different ways.
- Value - specifies the Quaternion value.

Pins

- Clock - the clock input pin of the component
- Out – the Output Pin of the component.

MEMORY | Memory Storage

Properties

- Elements – elements implementing variety of Read, Write and Seek operations.
- Loop – if set to true the Read and Write will start from the beginning when reaching the end. Otherwise Read and Write will stop once the end is reached.
- Size – specifies the size in bytes reserved in memory to store the data.

Pins

- In – binary Input Pin where external components can send data to be saved.
- Read Position – output Pin indicating the current Read position.
- Write Position – output Pin indicating the current Write position.

Quaternion & Memory Components



Subtract Integer Value

Properties

- Enabled – enables or disables the component.
- Value – value to be subtracted from the input pin value.

Pins

- In – the Input Pin of the component.
- Out – the Output Pin of the component.

Subtract Integer From Value

Properties

- Value - `CommonValueOneMathIntegerFilter.Value`
- Enabled - enables or disable the component.

Pins

- In - the Integer Input pin of the component or element
- Out - the Integer Output pin of the component or element

Multiply Integer By Value

Properties

- Value - `CommonValueOneMathIntegerFilter.Value`
- Enabled - enables or disable the component.

Pins

- In - the Integer Input pin of the component or element
- Out - the Integer Output pin of the component or element

Divide Integer Value

Properties

- Value - `CommonValueOneMathIntegerFilter.Value`
- Enabled - enables or disable the component.

Pins

- In - the Integer Input pin of the component or element
- Out - the Integer Output pin of the component or element

Integer Change Only

Properties

- Enabled – enables or disables the component. If the component is enabled, only if the newly arriving data differs than the last previously arrived data, the value will be sent to the Output Pin. If the component is Disabled, any data arriving to the input pin will be sent to the Output Pin.
- Threshold – specifies the minimal `Threshold(Difference)` between the samples above which the data is considered changed.

Pins

- In – the Input Pin of the component.
- Out – the Output Pin of the component.
- Difference – this pin will output the value difference between the two samples.

Add Integer Value

Properties

- Value - `CommonValueOneMathIntegerFilter.Value`
- Enabled - enables or disable the component.

Pins

- In - the Integer Input pin of the component or element
- Out - the Integer Output pin of the component or element

Integer Snapshot

Properties

- Enabled - enables or disable the component.

Pins

- Snapshot - the Snapshot clock input pin of the component or element
- In - the Integer Input pin of the component or element
- Out - the Integer Output pin of the component or element

Min Integer Value

Properties

- Enabled – enables or disables the component.

Pins

- In – the Input Pin of the component.
- Out – the Output Pin of the component.
- Reset – resets the component

Max Integer Value

Properties

- Enabled - enables or disable the component.

Pins

- In - `MaxIntegerValue.InputPin`
- Reset - `MaxIntegerValue.ResetInputPin`
- Out - the Integer Output pin of the component or element

Integer Components

Inverse Integer (Change Sign)

Properties

- Enabled - enables or disable the component.

Pins

- In - the Integer Input pin of the component or element
- Out - the Integer Output pin of the component or element

Absolute Integer Value

Properties

- Enabled - enables or disable the component.

Pins

- In - the Integer Input pin of the component or element
- Out - the Integer Output pin of the component or element

Compare Integer Value

Properties

- Value - specifies the Value to be used for the comparison
- CompareType - specifies the compare type
- OnlyChanged - Compare Integer Value.OnlyChanged
- Enabled - CommonIntegerEnableSink.Enabled

Pins

- Out - the Digital Output pin of the component or element
- In - the Integer Input pin of the component or element

Compare Integer Range

Properties

- Enabled - enables or disables the component.
- Include Limits - if True the Min/Max limits will be included.
- Is Outside Range - if True, the component will try to match the outside of the range.
- Only Changed - send to the output only if the compare result has changed.
- Range - specifies the Min/Max range

Pins

- In - The Input Pin of the component.
- Out - The Output Pin of the component indicating the result of the check

Accumulate Integer

Properties

- Enabled - enables or disables the component.
- InitialValue - the initial value of the component.

Pins

- In - the Input Pin of the component.
- Out - the Output Pin of the component.
- Reset - clocking this pin resets the component to Initial Value.

Unsigned To Integer

Properties

- Constrain - specifies if the sign bit will be included or excluded (Constrained)

Pins

- Out - the Integer Output pin of the component or element
- In - the Unsigned Integer Input pin of the component or element

Inverse (Change Sign)

Properties

- Enabled - enables or disable the component.

Pins

- In - the Analog Input pin of the component or element
- Out - the Analog Output pin of the component or element

Integer Array

Properties

- Elements - Integer Array.Elements
- InitialIndex - Integer Array.InitialIndex

Pins

- Index - Integer Array.IndexInputPin
- Clock - the clock input pin of the component or element
- Out - the Integer Output pin of the component or element

Divide Integer By Value

Properties

- Value - CommonValueOneMathIntegerFilter.Value
- Enabled - enables or disable the component.

Pins

- In - the Integer Input pin of the component or element
- Out - the Integer Output pin of the component or element

Integer Components



Limit Integer between Min and Max

Properties

- Enabled – enables or disables the component.
- Max - value specifying the Max limit
- Min - value specifying the Min limit

Pins

- In – the Input Pin of the component.
- Out – the Output Pin of the component.

Min Limit Integer

Properties

- Enabled – enables or disables the component.
- Value – value specifying the limit

Pins

- In – the Input Pin of the component.
- Out – the Output Pin of the component.

Max Limit Integer

Properties

- Enabled – enables or disables the component.
- Value – value specifying the limit

Pins

- In – the Input Pin of the component.
- Out – the Output Pin of the component.

Add Integer

Pins

- In - MathIntegerMultiInput.InputPins
- Clock - the clock input pin of the component or element
- Out - the Integer Output pin of the component or element

Multiply Integer

Pins

- In - MathIntegerMultiInput.InputPins
- Clock - the clock input pin of the component or element
- Out - the Integer Output pin of the component or element

Square Integer Generator

Properties

- Asymmetry - specifies the Asymmetry of the generated wave
- Amplitude - specifies the Amplitude of the generator
- Offset - specifies the Offset of the generator
- Frequency - specifies the Frequency of the generator
- Phase - specifies the Phase of the generator
- Enabled - enables or disable the component.

Pins

- Clock - the clock input pin of the component or element
- Out - the Integer Output pin of the component or element

Triangle Integer Generator

Properties

- Asymmetry - specifies the Asymmetry of the generated wave
- Amplitude - specifies the Amplitude of the generator
- Offset - specifies the Offset of the generator
- Frequency - specifies the Frequency of the generator
- Phase - specifies the Phase of the generator
- Enabled - enables or disable the component.

Pins

- Clock - the clock input pin of the component or element
- Out - the Integer Output pin of the component or element

Integer Multi Source

Pins

- In - input pin where the data arrives to be sent through the Out pins. Any data that arrives on this pin will be sent to every output pin in order from the first to the last output pin.
- Output pins where the data received in the In pin is sent. The data is sent in order from the first to the last pin.

Split Integer Digits

Properties

- Enabled – enables or disables the component.
- Base – specifies the base (Octal, Decimal, Hexadecimal etc.) for the conversion
- Fill Value – specifies the value heading fill digit at front of the decoded digits in case the value results in less digits than the number of output pins

Pins

- In – the Input Pin of the component.
- Out – output Pins for the resulting digits.

Integer Components



Integer To Unsigned

Properties

- Constrain - specifies if the sign bit will be included or excluded (Constrained)

Pins

- Out - the Unsigned Integer Output pin of the component or element
- In - the Integer Input pin of the component or element

Sine Integer Generator

Properties

- Amplitude - specifies the Amplitude of the generator
- Offset - specifies the Offset of the generator
- Frequency - specifies the Frequency of the generator
- Phase - specifies the Phase of the generator
- Enabled - enables or disable the component.

Pins

- Clock - the clock input pin of the component or element
- Out - the Integer Output pin of the component or element

Integer Value

Properties

- Value - specifies the value of the component
- Elements - Integer Value.Elements

Pins

- Clock - the clock input pin of the component or element
- Out - the Integer Output pin of the component or element

Up/Down Counter

Properties

- InitialValue - specifies the initial value of the component
- Min - specifies the minimal value for the counter
- Max - specifies the maximal value for the counter
- Elements - BasicCounter.Elements
- Enabled - enables or disable the component.

Pins

- Up - Count Up clock input pin
- Down - Count Down clock input pin
- Reset - the Reset input pin of the counter
- Out - the Integer Output pin of the component or element

Counter

Properties

- Reversed - specifies the direction Up/Down of the counter
- InitialValue - specifies the initial value of the component
- Min - specifies the minimal value for the counter
- Max - specifies the maximal value for the counter
- Elements - BasicCounter.Elements
- Enabled - enables or disable the component.

Pins

- In - Count clock input pin
- Reset - the Reset input pin of the counter
- Out - the Integer Output pin of the component or element

Random Integer Generator

Properties

- Min - specifies the minimum range for the generated values
- Max - specifies the maximum range for the generated values
- Seed - specifies the seed for the random generator
- Enabled - enables or disable the component.

Pins

- Clock - the clock input pin of the component or element
- Out - the Integer Output pin of the component or element

Gauss Integer Generator

Properties

- Mean - Gauss Integer Generator.Mean
- StandardDeviation - Gauss Integer Generator.StandardDeviation
- Seed - Gauss Integer Generator.Seed
- Enabled - enables or disable the component.

Pins

- Clock - the clock input pin of the component or element
- Out - the Integer Output pin of the component or element

Integer Multi-Source Merger

Pins

- In - the Integer Input pins of the component or element
- Out - the Integer Output pin of the component or element

Integer Schmitt Trigger (Hysteresis)

Properties

- Value - Integer Schmitt Trigger (Hysteresis).Value
- Threshold - Integer Schmitt Trigger (Hysteresis).Threshold
- InitialValue - Integer Schmitt Trigger (Hysteresis).InitialValue
- Inverted - Integer Schmitt Trigger (Hysteresis).Inverted
- Enabled - CommonIntegerEnableSink.Enabled

Pins

- Out - Integer Schmitt Trigger (Hysteresis).OutputPin
- In - the Integer Input pin of the component or element

Integer Components



Remember Integer Value

Properties

- Enabled - enables or disable the component.

Pins

- Remember - Remember Integer Value.RememberInputPin
- Recall - Remember Integer Value.RecallInputPin
- In - the Integer Input pin of the component or element
- Out - the Integer Output pin of the component or element

Ignore Integer Values

Properties

- Enabled - enables or disables the component.
- Pass Equal Values - If True the values equal to the Value property will pass through the filter.
- Pass Values Below - If True the values below to the Value property will pass through the filter. If False the values Above will pass.
- Value - value specifying the limit

Pins

- In - the Input Pin of the component.
- Out - the Output Pin of the component.

Ignore Integer Ranges

Properties

- Elements - list of ranges to be excluded
- Enabled - enables or Disables the component.

Pins

- In - the Input Pin of the component.
- Out - the Output Pin of the component.
- Ignored - output pin indicating whether the input value was ignored.

Integer Toggle Demux

Properties

- InitialSelectValue - initial channel when the execution starts.

Pins

- In - input pin of the demuxer. The data from this pin will be sent to the selected True or False out pin
- Select - selects the True or False output pin where the data will be sent
- True - the True Output pin. If Select receives True the data from the In Pin will be sent through this pin.
- False - the False Output pin. If Select receives False the data from the In Pin will be sent through this pin.

Integer To Text

Properties

- Base - specifies the Base for the conversion

Pins

- Out - the Text Output pin of the component or element
- In - the Integer Input pin of the component or element

Integer To Analog

Properties

- Scale - specifies the scale factor for the conversion

Pins

- Out - the Analog Output pin of the component or element
- In - the Integer Input pin of the component or element

Integer Mux (Multi channel Switch)

Properties

- InitialChannel - Integer Mux(Multi channel Switch).InitialChannel

Pins

- Select - the Unsigned Integer "Select Input Muxer Channel" Input Pin of the component or element
- In - the Integer Input pins of the component or element
- Out - the Integer Output pin of the component or element

Integer Toggle Switch

Properties

- InitialSelectValue - Integer Toggle Switch.InitialSelectValue

Pins

- True - the Integer Input pin to be used when Select input pin is True
- False - the Integer Input pin to be used when Select input pin is False
- Select - selects one of the inputs as source for the output of the component
- Out - the Integer Output pin of the component or element

Integer On/Off Switch

Properties

- InitialEnabled - Integer On/Off Switch.InitialEnabled

Pins

- In - Integer On/Off Switch.InputPin
- Enable - Integer On/Off Switch.EnableInputPin
- Out - the Integer Output pin of the component or element

Integer Components



Complex Array To Binary

Properties

- Enabled – enables or disables the component.

Pins

- In – the Input Pin of the component.
- Out – the Output Pin of the component.

Analog Array To Binary

Properties

- Enabled – enables or disables the component.

Pins

- In – the Input Pin of the component.
- Out – the Output Pin of the component.

Binary Mux (Multi channel Switch)

Properties

- InitialChannel – initial channel when the execution starts.

Pins

- In – input pins of the Mux. The data from the input pin index specified by the value of the Select pin will be sent to the one of the output pin.
- Out – Output pin. The data from the selected Input Pin will be sent to this pin.
- Select – selects the input pin from where the data will be sent

Binary Toggle Demux

Properties

- InitialSelectValue - Initial channel when the execution starts.

Pins

- In – input pin of the demuxer. The data from this pin will be sent to the selected True or False out pin
- Select – selects the True or False output pin where the data will be sent
- True – the True Output pin. If Select receives True the data from the In Pin will be sent through this pin.
- False – the False Output pin. If Select receives False the data from the In Pin will be sent through this pin.

Binary Demux (Multiple Output channel Switch)

Properties

- InitialChannel – initial channel when the execution starts.

Pins

- In – Input pin of the demuxer. The data from this pin will be sent to the selected out pin
- Out – Output pins. The data from the input pin will be sent to the one of the output pins indicated by the value received in the Select pin
- Select – Selects the output pin where the data will be sent

Step/Iterate Binary Items

Properties

- Enabled – enables or disables the component.

Pins

- In – the Input Pin of the component.
- Out – the Output Pins for the individual Binary blocks.
- Empty – this pin will send clock signal if the input data is empty (Has zero items).
- Count – Output Pin outputting the count of items in the Binary data.
- Index – Output Pin outputting the current index being sent out.

Binary To Text

Properties

- Base – specifies the base (Binary, Octal, Decimal, Hexadecimal etc.) to be used to convert the binary to text.
- Begin Text – specifies text to be added at the beginning.
- Direct Cast – if Set to True the binary will be converted directly as corresponding ASCII characters in the output text.
- Element Prefix – specifies text to be added at front of each element.
- End Text – specifies text to be added at the end.
- Max Size – the maximum number of items to be added to the text. If more the "..." will be added at the end indicating more items.
- Min Digits – specifies the minimum length in digits for each number padding with leading '0' if needed.
- Separator Text - specifies text to be used as separator between the items.

Pins

- In – the Input Pin of the component.
- Out – the Output Pin of the component.

Binary Data (Array) Delete Items

Properties

- Count – specifies the number of bytes to be deleted.
- Enabled – enables or Disables the component.
- Index – specifies the starting index from where the Bytes will be deleted.

Pins

- In – the Input Pin of the component.
- Out – the Output Pin of the component.

Compare Binary Value

Properties

- Compare Type - specifies the compare type
- Enabled - enables or Disables the component.
- Only Changed – send to the output only if the compare result has changed.
- Value - specifies the Value to be used for the comparison

Pins

- In – the Input Pin of the component.
- Out - the Output Pin of the component indicating the result of the comparison

Binary Components



Binary Insert Items

Properties

- Enabled – enables or disables the component.
- Index – index where to insert the items.
- Value – items to be inserted.

Pins

- In – the Input Pin of the component.
- Out – the Output Pin of the component.

Binary Value

Properties

- Elements – optional elements that can change the output value in different ways.
- Value - specifies the Binary value.

Pins

- Clock - the clock input pin of the component
- Out – the Output Pin of the component.

Remember Binary Data (Array)

Properties

- Enabled – enables or disables the component.
- InitialValue – initial stored value.

Pins

- In – the Input Pin of the component.
- Out – the Output Pin of the component.
- Remember (Write) – when this pin is clocked the stored value will be sent to the Output Pin.
- Recall (Read) - when this pin is clocked the latest value on the Input Pin value will be stored.

Split Binary Bytes

Properties

- Enabled – enables or disables the component.

Pins

- In – the Input Pin of the component.
- Out – the Output Pins for the individual Binary blocks.

Binary Multi Source

Pins

- In - Input pin where the data arrives to be sent through the Out pins. Any data that arrives on this pin will be sent to every output pin in order from the first to the last output pin.
- Out - Output pins where the data received in the In pin is sent. The data is sent in order from the first to the last pin.

Get Binary Item At Index

Properties

- Enabled – enables or disables the component.
- Ignore Out of Range – if set to True when the Index is bigger than the size of the data, the last item will be sent to the Output Pin. Otherwise no data will be sent to the Output Pin.
- Index – specifies the Index where the item to be sent to the output is located.

Pins

- In – the Input Pin of the component.
- Out - the Output Pin of the component.
- Empty – this pin will send clock signal if the input data is empty (Has zero items).
- Out of Range - this pin will send clock signal if the Index is outside of the Size of the data.

Binary Replace Items At Index

Properties

- Enabled – enables or disables the component.
- Index – specifies the Index where the items that need to be replaced start.
- Value- specifies the New items to replace the old one.

Pins

- In – the Input Pin of the component.
- Out – the Output Pin of the component.

Binary Insert In Items

Properties

- Enabled – enables or disables the component.
- Index – index where to insert the items.
- Value – items where the incoming data will be inserted.

Pins

- In – the Input Pin of the component.
- Out – the Output Pin of the component.

Binary Toggle Switch

Properties

- InitialSelectValue - initial channel when the execution starts.

Pins

- Select – selects the input pin from where the data will be sent
- Out – Output pins. The data from the input pin will be sent to the one of the output pins indicated by the value received in the Select pin
- True - the True Input pins of the Switch. The data from this pin will be sent to the output if True is sent to the Select Pin.
- False - the False Input pins of the Switch. The data from this pin will be sent to the output if True is sent to the Select Pin.

Binary Components



Binary On/Off Switch

Properties

- Ignore Same – if set to True only changing from sample to sample values will be sent to the output.
- Initial Enabled – the initial Enabled Value.
- Send on Enable – if set to True the latest previously received value will be sent out when the component switches from Disable to Enabled

Pins

- Enabled – the Enable Input Pin of the component.
- In – the Input Pin of the component.
- Out – the Output Pin of the component.

Binary Multi-Source Merger

Pins

- In - Input pins. Data received in any of the pins will be sent to the Output pin.
- Out - Output pin where the data from the In pins is sent.

Binary Replace

Properties

- Enabled – the Enable Input Pin of the component.
- From Value – the Binary sequence in the Binary to be replaced.
- To Value – the new Binary sequence to be placed in the Binary in the place of the old one.

Pins

- In – the Input Pin of the component.
- Out – the Output Pin of the component.

Binary Snapshot

Properties

- Enabled – enables or disables the component.

Pins

- In – the Input Pin of the component.
- Out – the Output Pin of the component.
- Snapshot - the Snapshot clock input pin of the component or element. When this pin is clocked the latest data that had arrived on the Input will be sent to the Output Pin

Binary Components



Detect Packet Header ID

Properties

- ID - BasicHeaderID.ID
- Enabled - CommonEnabledComponent.Enabled

Pins

- In - Detect Packet Header ID.InputPin
- Out - Detect Packet Header ID.OutputPin

Packet

Properties

- Elements - specifies the elements of the packet
- HeadMarker - specifies the Head Marker bytes
- Checksum - specifies the Packet Checksum settings
- SizeReserve - Packet.SizeReserve
- OnlyModified - specifies if a new packet will be generated as soon as possible or only when there is change of the channels data

Pins

- Out - the Byte(Binary) Output pin of the component or element
- Clock - the clock input pin of the component or element

Add Packet Header ID

Properties

- ID - BasicHeaderID.ID
- Enabled - CommonEnabledComponent.Enabled

Pins

- In - Add Packet Header ID.InputPin
- Out - Add Packet Header ID.OutputPin

HTTP Client

Properties

- Configure Socket - if True the Socket Host and Port Number will be set automatically by the component.
- Host - specifies the name of the Host Server
- Requests - collection of different requests (GET, POST, PUT, etc.) to be performed to the Server.
- User-Agent - specifies the User Agent name to be reported to the Server as part of the requests.
- Version - specifies the HTTP Version of the protocol to be used.

Pins

- Out - the Socket Pin of the component. Connect this pin to a TCP/IP Client Socket.

Split JSON Array

Properties

- Elements - specifies the elements to be extracted from the JSON Array
- Enabled - the Enable Input Pin of the component.

Pins

- In - the Input Pin of the component.
- Unprocessed Index - sends out the Index of any extra value that is in the JSON Array but is not in the Elements.
- Value - sends out any extra value that is in the JSON Array but is not in the Elements.
- Error - this Output Pin will send clock signal if there is error during the parsing.

MQTT Client

Properties

- Version - MQTT Client.Version
- ClientID - MQTT Client.ClientID
- UserName - MQTT Client.UserName
- Password - MQTT Client.Password
- Will - MQTT Client.Will
- CleanSession - MQTT Client.CleanSession
- KeepAliveInterval - MQTT Client.KeepAliveInterval
- Topics - MQTT Client.Topics
- Enabled - enables or disable the component.

Pins

- In - MQTT Client.InputPin
- Out - MQTT Client.OutputPin
- Connected - MQTT Client.ConnectedInputPin
- Disconnect - MQTT Client.DisconnectOutputPin
- SessionPresent - MQTT Client.SessionPresentOutputPin

Unpacket

Properties

- Elements - specifies the elements of the packet
- HeadMarker - specifies the Head Marker bytes
- Checksum - specifies the Packet Checksum settings

Pins

- In - the Byte(Binary) Input pin of the component or element

Split Structure

Properties

- Elements - specifies the elements of the structure

Pins

- In - the Byte(Binary) Input pin of the component or element

Make Structure

Properties

- Elements - specifies the elements of the structure
- OnlyModified - specifies if a new packet will be generated as soon as possible or only when there is change of the channels data

Pins

- Out - the Byte(Binary) Output pin of the component or element
- Clock - the clock input pin of the component or element

Communication Components



Split JSON Object

Properties

- Elements – specifies the elements to be extracted from the JSON Object
- Enabled – the Enable Input Pin of the component.

Pins

- In – the Input Pin of the component.
- Unprocessed Name – sends out the name of any extra value that is in the JSON Object but is not in the Elements.
- Value – sends out any extra value that is in the JSON Object but is not in the Elements.
- Error – this Output Pin will send clock signal if there is error during the parsing.

Make JSON Array

Properties

- Elements– specifies the elements to be included in the JSON Array
- Enable – the Enable Input Pin of the component.
- Only Modified – if Set to True only of the newly constructed JSON Array is different than the previous one it will be sent out.

Pins

- Clock - the clock input pin of the component.
- Out – the Output Pin of the component.

Make JSON Object

Properties

- Elements – specifies the elements to be included in the JSON Object
- Enable – the Enable Input Pin of the component.
- Only Modified – if Set to True only of the newly constructed JSON Object is different than the previous one it will be sent out.

Pins

- Clock - the clock input pin of the component.
- Out – the Output Pin of the component.

Communication Components

Delete Left Sub Text

Properties

- Length - CommonTextLengthFilter.Length
- Enabled - enables or disable the component.

Pins

- In - the Text Input pin of the component or element
- Out - the Text Output pin of the component or element

Trim Text Begin/End Spaces

Properties

- Enabled - enables or disable the component.

Pins

- In - the Text Input pin of the component or element
- Out - the Text Output pin of the component or element

Delete Sub Text

Properties

- Position - CommonTextPositionLengthFilter.Position
- Length - CommonTextLengthFilter.Length
- Enabled - enables or disable the component.

Pins

- In - the Text Input pin of the component or element
- Out - the Text Output pin of the component or element

Text To Lower Case

Properties

- Enabled - enables or disable the component.

Pins

- In - the Text Input pin of the component or element
- Out - the Text Output pin of the component or element

Extract Right Sub Text

Properties

- Length - CommonTextLengthFilter.Length
- Enabled - enables or disable the component.

Pins

- In - the Text Input pin of the component or element
- Out - the Text Output pin of the component or element

Text To Upper Case

Properties

- Enabled - enables or disable the component.

Pins

- In - the Text Input pin of the component or element
- Out - the Text Output pin of the component or element

Delete Right Sub Text

Properties

- Length - CommonTextLengthFilter.Length
- Enabled - enables or disable the component.

Pins

- In - the Text Input pin of the component or element
- Out - the Text Output pin of the component or element

Contains Text

Properties

- Text - CommonTextDigitalMeasure.Text
- IgnoreCase - CommonTextDigitalMeasure.IgnoreCase
- Enabled - CommonTextEnableSink.Enabled

Pins

- Out - CommonTextDigitalMeasure.OutputPin
- In - The Text Input pin of the component or element

Find Last Text Position

Properties

- Enabled – enables or Disables the component.
- Ignore Case - if True Ignores the char Upper/Lower case
- Text – specifies the text to be found.

Pins

- In – the Input Pin of the component.
- Out – the Output Pin indicating the last position(Index) of the text found. If the text is not found will send -1.

Text Components



Find Text Position

Properties

- Text - CommonTextCardinalMeasure.Text
- IgnoreCase - CommonTextCardinalMeasure.IgnoreCase
- Enabled - CommonTextEnableSink.Enabled

Pins

- Out - CommonTextMeasure.OutputPin
- In - the Text Input pin of the component or element

Text Starts With

Properties

- Text - CommonTextDigitalMeasure.Text
- IgnoreCase - CommonTextDigitalMeasure.IgnoreCase
- Enabled - CommonTextEnableSink.Enabled

Pins

- Out - CommonTextDigitalMeasure.OutputPin
- In - the Text Input pin of the component or element

Extract Left Sub Text

Properties

- Length - CommonTextLengthFilter.Length
- Enabled - enables or disable the component.

Pins

- In - the Text Input pin of the component or element
- Out - the Text Output pin of the component or element

Extract Sub Text

Properties

- Position - CommonTextPositionLengthFilter.Position
- Length - CommonTextLengthFilter.Length
- Enabled - enables or disable the component.

Pins

- In - the Text Input pin of the component or element
- Out - the Text Output pin of the component or element

Text Ends With

Properties

- Text - CommonTextDigitalMeasure.Text
- IgnoreCase - CommonTextDigitalMeasure.IgnoreCase
- Enabled - CommonTextEnableSink.Enabled

Pins

- Out - CommonTextDigitalMeasure.OutputPin
- In - The Text Input pin of the component or element

Text Snapshot

Properties

- Enabled - enables or disable the component.

Pins

- Snapshot - the Snapshot clock input pin of the component or element
- In - the Text Input pin of the component or element
- Out - the Text Output pin of the component or element

Ignore Text Values

Properties

- Enabled - enables or Disables the component.
- Ignore Case - if True Ignores the char Upper/Lower case
- Pass Equal Values - if True the values equal to the Value property will pass through the filter.
- Pass Values Bellow - if True the values bellow to the Value property will pass through the filter. If False the values Above will pass.
- Value - value specifying the limit

Pins

- In - the Input Pin of the component.
- Out - the Output Pin of the component.

Remember Text Value

Properties

- Enabled - enables or disable the component.

Pins

- Remember - Remember Text Value.RememberInputPin
- Recall - Remember Text Value.RecallInputPin
- In - the Text Input pin of the component or element
- Out - the Text Output pin of the component or element

Text Value

Properties

- Value - specifies the value of the component
- Elements - Text Value.Elements

Pins

- Clock - the clock input pin of the component or element
- Out - the Text Output pin of the component or element

Text Components



Replace Text

Properties

- Enabled – the Enable Input Pin of the component.
- From Value – the value in the text to be replaced.
- To Value – the new Value to be placed in the text in the place of the old one.

Pins

- In – the Input Pin of the component.
- Out – the Output Pin of the component.

Binary Array

Properties

- Elements – elements containing the values of the array.
- Initial Index – specifying the initially selected Index of the array.

Pins

- Clock - the clock input pin of the component.
- Out – the Output Pin of the component.
- Index – the Index Input Pin specifying which element of the array will be sent to the output pin.

Compare Text Value

Properties

- Value - specifies the Value to be used for the comparison
- CompareType - specifies the compare type
- OnlyChanged - Compare Text Value.OnlyChanged
- IgnoreCase - Compare Text Value.IgnoreCase

Pins

- Out - the Digital Output pin of the component or element
- In - the Text Input pin of the component or element

Text Array

Properties

- Elements - Text Array.Elements
- InitialIndex - Text Array.InitialIndex

Pins

- Index - Text Array.IndexInputPin
- Clock - CommonClockedTextSource.ClockInputPin
- Out - the Text Output pin of the component or element

Text Change Only

Properties

- Enabled – enables or disables the component. If the component is enabled, only if the newly arriving data differs than the last previously arrived data, the value will be sent to the Output Pin. If the component is Disabled, any data arriving to the input pin will be sent to the Output Pin.

Pins

- In – the Input Pin of the component.
- Out – the Output Pin of the component.

Char Value

Properties

- Elements – optional elements that can change the output value in different ways.
- Value - specifies the Char value.

Pins

- Clock - the clock input pin of the component
- Out – the Output Pin of the component.

Text Toggle Switch

Properties

- InitialSelectValue - Text Toggle Switch.InitialSelectValue

Pins

- True - the Text Input pin to be used when Select input pin is True
- False - the Text Input pin to be used when Select input pin is False
- Select - selects one of the inputs as source for the output of the component
- Out - the Text Output pin of the component or element

Text Multi-Source Merger

Pins

- In - the Text Input pins of the component or element
- Out - the Text Output pin of the component or element

Text Toggle Demux

Properties

- InitialSelectValue - initial channel when the execution starts.

Pins

- Select – selects the input pin from where the data will be sent
- Out – Output pins. The data from the input pin will be sent to the one of the output pins indicated by the value received in the Select pin
- True - the True Input pins of the Switch. The data from this pin will be sent to the output if True is sent to the Select Pin.
- False - the False Input pins of the Switch. The data from this pin will be sent to the output if True is sent to the Select Pin.

Text Components



Text On/Off Switch

Properties

- InitialEnabled - Text On/Off Switch.InitialEnabled

Pins

- In - Text On/Off Switch.InputPin
- Enable - Text On/Off Switch.EnableInputPin
- Out - the Text Output pin of the component or element

Measure Text Length

Properties

- Enabled - CommonTextEnableSink.Enabled

Pins

- Out - CommonTextMeasure.OutputPin
- In - the Text Input pin of the component or element

Char Mux (Multi channel Switch)

Properties

- InitialChannel - Char Mux(Multi channel Switch).InitialChannel

Pins

- Select - Char Mux(Multi channel Switch).SelectInputPin
- In - CharMultiInputSource.InputPins
- Out - CommonCharSource.OutputPin

Char Toggle Switch

Properties

- InitialSelectValue - initial channel when the execution starts.

Pins

- Select - selects the input pin from where the data will be sent
- Out - Output pins. The data from the input pin will be sent to the one of the output pins indicated by the value received in the Select pin
- True - the True Input pins of the Switch. The data from this pin will be sent to the output if True is sent to the Select Pin.
- False - the False Input pins of the Switch. The data from this pin will be sent to the output if True is sent to the Select Pin.

Char Toggle Demux

Properties

- InitialSelectValue - initial channel when the execution starts.

Pins

- In - input pin of the demuxer. The data from this pin will be sent to the selected True or False out pin
- Select - selects the True or False output pin where the data will be sent
- True - the True Output pin. If Select receives True the data from the In Pin will be sent through this pin.
- False - the False Output pin. If Select receives False the data from the In Pin will be sent through this pin.

Char Change Only

Properties

- Enabled - enables or disables the component. If the component is enabled, only if the newly arriving data differs than the last previously arrived data, the value will be sent to the Output Pin. If the component is Disabled, any data arriving to the input pin will be sent to the Output Pin.

Pins

- In - the Input Pin of the component.
- Out - the Output Pin of the component.

Char Multi-Source Merger

Pins

- In - Input pins. Data received in any of the pins will be sent to the Output pin.
- Out - Output pin where the data from the In pins is sent.

Char Multi Source

Pins

- In - input pin where the data arrives to be sent through the Out pins. Any data that arrives on this pin will be sent to every output pin in order from the first to the last output pin.
- Out - output pins where the data received in the In pin is sent. The data is sent in order from the first to the last pin.

Compare Char Range

Properties

- Enabled - enables or Disables the component.
- Ignore Case - if True Ignores the char Upper/Lower case
- Include Limits - if True the Min/Max limits will be included.
- Is Outside Range - if True, the component will try to match the outside of the range.
- Only Changed - send to the output only if the compare result has changed.
- Range - specifies the Min/Max range

Pins

- In - the Input Pin of the component.
- Out - the Output Pin of the component indicating the result of the check

Text Components

Split JSON Array

Properties

- Elements – specifies the elements to be extracted from the JSON Array
- Enabled – the Enable Input Pin of the component.

Pins

- In – the Input Pin of the component.
- Unprocessed Index – sends out the Index of any extra value that is in the JSON Array but is not in the Elements.
- Value – sends out any extra value that is in the JSON Array but is not in the Elements.
- Error – this Output Pin will send clock signal if there is error during the parsing.

Text Mux (Multi channel Switch)

Properties

- InitialChannel - Text Mux(Multi channel Switch).InitialChannel

Pins

- Select - the Unsigned Integer "Select Input Muxer Channel" Input Pin of the component or element
- In - the Text Input pins of the component or element
- Out - the Text Output pin of the component or element

Char On/Off Switch

Properties

- Ignore Same – if set to True only changing from sample to sample values will be sent to the output.
- Initial Enabled – the initial Enabled Value.
- Send on Enable – if set to True the latest preciously received value will be sent out when the component switches from Disable to Enabled

Pins

- Enable – the Enable Input Pin of the component.
- In – the Input Pin of the component.
- Out – the Output Pin of the component.

Split JSON Object

Properties

- Elements – specifies the elements to be extracted from the JSON Object
- Enabled – the Enable Input Pin of the component.

Pins

- In – the Input Pin of the component.
- Unprocessed Name – sends out the name of any extra value that is in the JSON Object but is not in the Elements.
- Value – sends out any extra value that is in the JSON Object but is not in the Elements.
- Error – this Output Pin will send clock signal if there is error during the parsing.

Split Text To Chars

Properties

- Enabled – enables or disables the component.

Pins

- In – the Input Pin of the component.
- Out – the Output Pin of the component.

Make JSON Object

Properties

- Elements – specifies the elements to be included in the JSON Object
- Enable – the Enable Input Pin of the component.
- Only Modified – if Set to True only of the newly constructed JSON Object is different than the previous one it will be sent out.

Pins

- Clock - the clock input pin of the component.
- Out – the Output Pin of the component.

Encode Base64

Properties

- Enabled – enables or disables the component.

Pins

- In – the Input Pin of the component.
- Out – the Output Pin of the component.

Text Multi Source

Pins

- In - input pin where the data arrives to be sent trough the Out pins. Any data that arrives on this pin will be sent to every output pin in order from the first to the last output pin.
- Out - output pins where the data received in the In pin is sent. The data is sent in order from the first to the last pin.

Split/Parse Text

Properties

- Allow Partial – true indicates that even if the text does not present all the elements the present ones will be extracted.
- Elements – specifies the elements to be extract from the text
- Enabled – enables or Disables the component.
- Ignore End – if set to True any remaining text after the matching of the entire pattern will be ignored.
- Text – template specifying where in the text the different elements to be extracted are located.

Pins

- In – the Input Pin of the component.

Text Components



Compare Char Value

Properties

- Value - Compare Char Value.Value
- CompareType - Compare Char Value.CompareType
- OnlyChanged - Compare Char Value.OnlyChanged
- IgnoreCase - Compare Char Value.IgnoreCase

Pins

- Out - Compare Char Value.OutputPin
- In - CommonCharSink.InputPin

Char Snapshot

Properties

- Enabled – enables or disables the component.

Pins

- In – the Input Pin of the component.
- Out – the Output Pin of the component.
- Snapshot - the Snapshot clock input pin of the component or element. When this pin is clocked the latest data that had arrived on the Input will be sent to the Output Pin

Formatted Text

Properties

- Text - specifies how the formatted text will be generated
- Elements - the elements used to construct the formatted text

Pins

- Clock - the clock input pin of the component or element
- Out - the Text Output pin of the component or element

Decode Base64

Properties

- Enabled – enables or disables the component.
- Process Invalids – if True the component will try to partially decode invalid Base64 data.

Pins

- In – the Input Pin of the component.
- Out – the Output Pin of the component.
- Invalid – output pin sending clock signal when the data is invalid.

Ignore Char Ranges

Properties

- Elements – list of ranges to be excluded
- Enabled – enables or Disables the component.

Pins

- In – the Input Pin of the component.
- Out – the Output Pin of the component.
- Ignored – output pin indicating whether the input value was ignored.

Make JSON Array

Properties

- Elements– specifies the elements to be included in the JSON Array
- Enable – the Enable Input Pin of the component.
- Only Modified – if Set to True only of the newly constructed JSON Array is different than the previous one it will be sent out.

Pins

- Clock - the clock input pin of the component.
- Out – the Output Pin of the component.

Char To Text

Properties

- MaxLength - Char To Text.MaxLength
- Truncate - Char To Text.Truncate
- UpdateOnEachChar - Char To Text.UpdateOnEachChar
- Enabled - CommonEnableTextSource.Enabled

Pins

- In - the Char Input pin of the component or element
- Out - the Text Output pin of the component or element

Ignore Char Values

Properties

- Enabled – enables or disables the component.
- Ignore Case - if True Ignores the char Upper/Lower case
- Pass Equal Values – if True the values equal to the Value property will pass through the filter.
- Pass Values Below – if True the values below to the Value property will pass through the filter. If False the values Above will pass.
- Value – value specifying the limit

Pins

- In – the Input Pin of the component.
- Out – the Output Pin of the component.

Text To Char

Properties

- AddReturn - Text To Char.AddReturn
- AddNewLine - Text To Char.AddNewLine
- Enabled - CommonEnableCharSource.Enabled

Pins

- In - the Text Input pin of the component or element
- Out - CommonCharSource.OutputPin

Text Components



Text to Analog

Pins

- Out - the Analog Output pin of the component or element
- In - the Text Input pin of the component or element

Text To Unsigned

Properties

- Base - Text To Unsigned.Base

Pins

- Out - the Unsigned Integer Output pin of the component or element
- In - the Text Input pin of the component or element

Text To Integer

Properties

- Base - Text To Integer.Base

Pins

- Out - the Integer Output pin of the component or element
- In - the Text Input pin of the component or element

Text Components

Cosine of angle (Radians)

Properties

- Enabled - enables or disable the component.

Pins

- In - the Analog Input pin of the component or element
- Out - the Analog Output pin of the component or element

Multiply Analog By Value

Properties

- Value - specifies the Value for the math operations
- Enabled - enables or disable the component.

Pins

- In - the Analog Input pin of the component or element
- Out - the Analog Output pin of the component or element

Radians To Degrees

Properties

- Enabled - enables or disable the component.

Pins

- In - the Analog Input pin of the component or element
- Out - the Analog Output pin of the component or element

Raise To Power

Properties

- Value - specifies the Value for the math operations
- Enabled - enables or disable the component.

Pins

- In - the Analog Input pin of the component or element
- Out - the Analog Output pin of the component or element

Degrees to Radians

Properties

- Enabled - enables or disable the component.

Pins

- In - the Analog Input pin of the component or element
- Out - the Analog Output pin of the component or element

Divide Analog Value

Properties

- Value - specifies the Value for the math operations
- Enabled - enables or disable the component.

Pins

- In - the Analog Input pin of the component or element
- Out - the Analog Output pin of the component or element

Binary (Base-2) Logarithm

Properties

- Enabled – enables or disables the component.

Pins

- In – the Input Pin of the component.
- Out – the Output Pin of the component.

Add Analog Value

Properties

- Value - specifies the Value for the math operations
- Enabled - enables or disable the component.

Pins

- In - the Analog Input pin of the component or element
- Out - the Analog Output pin of the component or element

Subtract From Analog Value

Properties

- Value - specifies the Value for the math operations
- Enabled - enables or disable the component.

Pins

- In - the Analog Input pin of the component or element
- Out - the Analog Output pin of the component or element

Analog Components



Sine of angle (Radians)

Properties

- Enabled - enables or disable the component.

Pins

- In - the Analog Input pin of the component or element
- Out - the Analog Output pin of the component or element

Subtract Analog Value

Properties

- Value - specifies the Value for the math operations
- Enabled - enables or disable the component.

Pins

- In - the Analog Input pin of the component or element
- Out - the Analog Output pin of the component or element

Natural Logarithm

Properties

- Enabled - enables or disables the component.

Pins

- In - the Input Pin of the component.
- Out - the Output Pin of the component.

Kalman Angle Filter

Properties

- Change Rate Process Noise(Q Rate) - specifies the Change Rate Process Noise (Q Rate)
- Enabled - enables or Disables the component.
- Units - specifies the Angle Units (Degree, Radians, Normalized(0.0-1.0))
- Value Observed Noise(R Value) - specifies the Value Observed Noise(R Value)
- Value Process Noise(Q Value) - specifies the Value Process Noise(Q Value)

Pins

- In - the Input Pin of the component.
- Out - the Output Pin of the component.
- Rate of Change - the Rate of Change Output Pin of the component.

Kalman Analog Filter

Properties

- Change Rate Process Noise(Q Rate) - specifies the Change Rate Process Noise (Q Rate)
- Enabled - enables or disables the component.
- Value Observed Noise(R Value) - specifies the Value Observed Noise(R Value)
- Value Process Noise(Q Value) - specifies the Value Process Noise(Q Value)

Pins

- In - the Input Pin of the component.
- Out - the Output Pin of the component.
- Rate of Change - the Rate of Change Output Pin of the component.

Limit Analog between Min and Max

Properties

- Min - specifies the minimal limit value
- Max - specifies the maximal limit value
- Enabled - enables or disable the component.

Pins

- In - the Analog Input pin of the component or element
- Out - the Analog Output pin of the component or element

Madgwick Filter

Properties

- Units - Madgwick Filter.Units
- ProportionalGain - Madgwick Filter.ProportionalGain

Pins

- Accelerometer - Madgwick Filter.AccelerometerInputPins
- Gyroscope - Madgwick Filter.GyroscopeInputPins
- Compass - Madgwick Filter.CompassInputPins
- Out - Madgwick Filter.OutputPins

Absolute Analog Value

Properties

- Enabled - enables or disables the component. If Enabled the Output Pin will be the Absolute (Positive) value of the Input Pin. If Disabled the Output Pin will be the same as the Input Pin.

Pins

- In - the Input Pin of the component.
- Out - the Output Pin of the component.

Inverse Analog (Change Sign)

Properties

- Enabled - enables or disable the component.

Pins

- In - the Analog Input pin of the component or element
- Out - the Analog Output pin of the component or element

Analog Components



Frequency Meter

Properties

- Enabled – enables or disables the component.

Pins

- In - Frequency Meter.InputPin
- Out - the Analog Output pin of the component or element

Min Analog Value

Properties

- Enabled – enables or disables the component.

Pins

- In – the Input Pin of the component.
- Out – the Output Pin of the component.
- Reset – resets the component

Square Analog

Properties

- Enabled – enables or disables the component.

Pins

- In – the Input Pin of the component.
- Out – the Output Pin of the component.

Analog Change Only

Properties

- Enabled – enables or disables the component. If the component is enabled, only if the newly arriving data differs than the last previously arrived data, the value will be sent to the Output Pin. If the component is Disabled, any data arriving to the input pin will be sent to the Output Pin.
- Threshold – specifies the minimal Threshold (Difference) between the samples above which the data is considered changed.

Pins

- In – the Input Pin of the component.
- Out – the Output Pin of the component.
- Difference – this pin will output the value difference between the two samples.

Accumulate Analog

Properties

- Enabled – enables or disables the component.
- InitialValue - the initial value of the component.

Pins

- In – the Input Pin of the component.
- Out – the Output Pin of the component.
- Reset – clocking this pin resets the component to Initial Value.

Sine Analog Generator

Properties

- Amplitude - specifies the Amplitude of the generator
- Offset - specifies the Offset of the generator
- Frequency - specifies the Frequency of the generator
- Phase - specifies the Phase of the generator
- Enabled - enables or disable the component.

Pins

- Clock - the clock input pin of the component or element
- Out - the Analog Output pin of the component or element

Square Root

Properties

- Enabled – enables or disables the component.

Pins

- In – the Input Pin of the component.
- Out – the Output Pin of the component.

Ramp To Analog Value

Properties

- InitialValue - Ramp To Value.InitialValue
- Slope - Ramp To Value.Slope
- Enabled - enables or disable the component.

Pins

- Clock - Ramp To Value.ClockInputPin
- In - the Analog Input pin of the component or element
- Out - the Analog Output pin of the component or element

Accumulate Angle

Properties

- Enabled – enables or disables the component.
- InitialValue - the initial value of the component.
- Units - specifies the Angle Units (Degree, Radians, Normalized (0.0-1.0))

Pins

- In – the Input Pin of the component.
- Out – the Output Pin of the component.
- Reset – clocking this pin resets the component to Initial Value.

Analog Components



Square Analog Generator

Properties

- Asymmetry - specifies the Asymmetry of the generated wave
- Amplitude - specifies the Amplitude of the generator
- Offset - specifies the Offset of the generator
- Frequency - specifies the Frequency of the generator
- Phase - specifies the Phase of the generator
- Enabled - enables or disable the component.

Pins

- Clock - the clock input pin of the component or element
- Out - the Analog Output pin of the component or element

Max Analog Value

Properties

- Enabled - enables or disables the component.

Pins

- In - the Input Pin of the component.
- Out - the Output Pin of the component.
- Reset - resets the component

Speed Change Meter

Properties

- Enabled - enables or disables the component.

Pins

- In - the Input Pin of the component.
- Out - the Output Pin of the component.

Amplitude Meter

Properties

- Period - specifies the period in Milliseconds over which the Amplitude will be calculated
- Enabled - enables or disable the component.

Pins

- Min - the minimum amplitude value over the period
- Max - the maximum amplitude value over the period
- In - the Analog Input pin of the component or element
- Out - the Analog Output pin of the component or element

Thermistor Steinhart Hart - 3 Points

Properties

- Enabled - enables or disables the component.
- Fixed Resistor (Ohms) - specifies the value of the fixed resistor in Ohms
- In Fahrenheit - specifies if the temperature will be measured in Celsius (Centigrade) or Fahrenheit
- Table - specifies the 3 points Table
- Thermistor To Ground - specifies if the Thermistor is connected to the ground.

Pins

- In - the Input Pin of the component.
- Out - the Output Pin of the component.

Thermistor Steinhart Hart

Properties

- A - specifies the A coefficient value for the conversion.
- B - specifies the B coefficient value for the conversion.
- C - specifies the C coefficient value for the conversion.
- Enabled - enables or disables the component.
- Fixed Resistor (Ohms) - specifies the value of the fixed resistor in Ohms
- In Fahrenheit - Specifies if the temperature will be measured in Celsius (Centigrade) or Fahrenheit
- Thermistor To Ground - specifies if the Thermistor is connected to the ground.

Pins

- In - the Input Pin of the component.
- Out - the Output Pin of the component.

Min Limit Analog

Properties

- Value - specifies the Value for the math operations
- Enabled - enables or disable the component.

Pins

- In - the Analog Input pin of the component or element
- Out - the Analog Output pin of the component or element

Analog Array

Properties

- Elements - Analog Array.Elements
- InitialIndex - Analog Array.InitialIndex

Pins

- Index - Analog Array.IndexInputPin
- Clock - the clock input pin of the component or element
- Out - the Analog Output pin of the component or element

2D Distance

Pins

- Start - the Starting 2D X,Y Point Input Pins of the component.
- Out - the Output Pin of the component.
- End - the Ending 2D X,Y Point Input Pins of the component.

Analog Components



Max Limit Analog

Properties

- Value - specifies the Value for the math operations
- Enabled - enables or disable the component.

Pins

- In - the Analog Input pin of the component or element
- Out - the Analog Output pin of the component or element

2D Change Distance

Pins

- In - the 2D X,Y Point Input Pins of the component.
- Out - the Output Pin of the component.

Analog Apply Window

Properties

- Alpha - specifies the Alpha value used for some of the Windowing functions.
- Enabled - enables or Disables the component.
- Type - specifies the Window Type (Hamming, Hann, Bartlett, Blackman, FlatTop, Welch, Kaiser)

Pins

- In - the Input Pin of the component.
- Out - the Output Pin of the component.

Add Analog

Pins

- In - MathAnalogMultiInput.InputPins
- Clock - the clock input pin of the component or element
- Out - the Analog Output pin of the component or element

Average Analog Period

Properties

- Period - averaging period in Microseconds
- Enabled - enables or disable the component.

Pins

- In - the Analog Input pin of the component or element
- Out - the Analog Output pin of the component or element

Dead Zone Analog

Properties

- Value - Dead Zone Analog.Value
- Span - Dead Zone Analog.Span
- Enabled - enables or disable the component.

Pins

- In - the Analog Input pin of the component or element
- Out - the Analog Output pin of the component or element

PID Controller

Properties

- ProportionalGain - specifies the Proportional Gain
- IntegralGain - specifies the Integral Gain
- DerivativeGain - specifies the Derivative Gain
- SetPoint - specifies the Set Point (Target value) for the controlled signal
- InitialValue - specifies the initial value of the component
- Enabled - enables or disable the component.

Pins

- ManualControl - The Manual Control Analog Input pin of the component or element
- Clock - The clock input pin of the component or element
- In - The Analog Input pin of the component or element
- Out - The Analog Output pin of the component or element

Multiply Analog

Pins

- In - MathAnalogMultiInput.InputPins
- Clock - the clock input pin of the component or element
- Out - the Analog Output pin of the component or element

Compare Analog Value

Properties

- Value - specifies the Value to be used for the comparison
- CompareType - specifies the compare type
- OnlyChanged - Compare Analog Value.OnlyChanged
- Enabled - CommonAnalogEnableSink.Enabled

Pins

- Out - the Digital Output pin of the component or element
- In - the Analog Input pin of the component or element

Analog Components



Dead Zone Scaled Analog (Map)

Properties

- Value - Dead Zone Scaled Analog.Value
- Span - Dead Zone Scaled Analog.Span
- InputRange - specifies the input Min/Max range
- OutputRange - specifies the output Min/Max range
- Enabled - enables or disable the component.

Pins

- In - The Analog Input pin of the component or element
- Out - The Analog Output pin of the component or element

Acceleration To 3D Angle and Force

Properties

- Offsets – specifies the Angular Offset for the outputs
- Units – specifies the Output Angle Units (Degree, Radians, Normalized).

Pins

- In – the X, Y, and Z Acceleration Input Pins.
- Out – the 3D Angle Output Pins.
- Force – the Combined Acceleration Force Output Pin.

Map Range Analog

Properties

- InputRange - specifies the input Min/Max range
- OutputRange - specifies the output Min/Max range
- Enabled - enables or disable the component.

Pins

- In - the Analog Input pin of the component or element
- Out - the Analog Output pin of the component or element

Compare Analog Range

Properties

- Enabled – enables or disables the component.
- Include Limits – if True the Min/Max limits will be included.
- Is Outside Range – if True, the component will try to match the outside of the range.
- Only Changed – send to the output only if the compare result has changed.
- Range – specifies the Min/Max range

Pins

- In – the Input Pin of the component.
- Out - the Output Pin of the component indicating the result of the check

Divide Analog By Value

Properties

- Value - specifies the Value for the math operations
- Enabled - enables or disable the component.

Pins

- In - the Analog Input pin of the component or element
- Out - the Analog Output pin of the component or element

Sliding Window Analog Array

Properties

- Count – specifies the number of samples to be extracted from the signal to create the array.
- Normalize – specifies if the samples should be normalized (Subtract the Minimal value, and divide by the maximal range of the array.)
- Step – specifies how often the signal array should be extracted. If set to Zero, the extraction will start as soon as the previous one has finished.

Pins

- Clock - the clock input pin of the component
- In – the Input Pin of the component.
- Out – the Output Pin of the component.

Interpolate Analog

Properties

- Elements – specifies the elements of the Interpolation curve
- Enabled – enables or disables the component.

Pins

- In – the Input Pin of the component.
- Out – the Output Pin of the component.

Analog Array Snapshot

Properties

- Enabled – enables or disables the component.

Pins

- In – the Input Pin of the component.
- Out – the Output Pin of the component.
- Snapshot - the Snapshot clock input pin of the component or element. When this pin is clocked the latest data that had arrived on the Input will be sent to the Output Pin

Analog Array Delete Items

Properties

- Count – specifies the number of bytes to be deleted.
- Enabled – enables or disables the component.
- Index – specifies the starting index from where the Complex Items will be deleted.

Pins

- In – the Input Pin of the component.
- Out – the Output Pin of the component.

Analog Components



Step/Iterate Analog Array Items

Properties

- Enabled – enables or disables the component.

Pins

- In – the Input Pin of the component.
- Out – the Output Pins for the individual Binary blocks.
- Empty – this pin will send clock signal if the input data is empty (Has zero items).
- Count – output Pin outputting the count of items in the Binary data.
- Index – output Pin outputting the current index being sent out.

Remember Analog Array

Properties

- Enabled – enables or disables the component.
- InitialValue – Initial stored value.

Pins

- In – the Input Pin of the component.
- Out – the Output Pin of the component.
- Remember (Write) – when this pin is clocked the stored value will be sent to the Output Pin.
- Recall (Read) – when this pin is clocked the latest value on the Input Pin value will be stored

Analog Toggle Demux

Properties

- InitialSelectValue - initial channel when the execution starts.

Pins

- In – input pin of the demuxer. The data from this pin will be sent to the selected True or False out pin
- Select – selects the True or False output pin where the data will be sent
- True – the True Output pin. If Select receives True the data from the In Pin will be sent through this pin.
- False – the False Output pin. If Select receives False the data from the In Pin will be sent through this pin.

Analog Array Insert Items

Properties

- Enabled – enables or disables the component.
- Index – index where to insert the items.
- Value Elements – items to be inserted.

Pins

- In – The Input Pin of the component.
- Out – The Output Pin of the component.

Get Analog Array Item At Index

Properties

- Enabled – enables or disables the component.
- Ignore Out of Range – if set to True when the Index is bigger than the size of the data, the last item will be sent to the Output Pin. Otherwise no data will be sent to the Output Pin.
- Index – specifies the Index where the item to be sent to the output is located.

Pins

- In – the Input Pin of the component.
- Out - the Output Pin of the component.
- Empty – this pin will send clock signal if the input data is empty (Has zero items).
- Out of Range - this pin will send clock signal if the Index is outside of the Size of the data.

Analog Snapshot

Properties

- Enabled - enables or disable the component.

Pins

- Snapshot - the Snapshot clock input pin of the component or element
- In - the Analog Input pin of the component or element
- Out - the Analog Output pin of the component or element

Analog To Analog Array

Pins

- In – the Analog values Input Pins of the component, used to create the array.
- Out - the Output Pin of the component.
- Clock - the clock input pin of the component

Analog Integrator (Integral)

Properties

- Elements - optional elements that can change the output value in different ways.
- Enabled – enables or disables the component.
- InitialValue – specifies the initial value of the component.
- Max – specifies the maximal value to be reached during the interrogation.
- Min – specifies the minimal value to be reached during the interrogation.

Pins

- In – the Input Pin of the component.
- Out – the Output Pin of the component.
- Clock - the clock input pin of the component
- Reset – resets the Integrator to the Initial Value

Analog Array Replace

Properties

- Enabled – the Enable Input Pin of the component.
- From Value Elements – the Analog Array sequence in the Analog Array data to be replaced.
- To Value Elements – the new Analog Array sequence to be placed in the Analog Array data in the place of the old one.

Pins

- In – the Input Pin of the component.
- Out – the Output Pin of the component.

Analog Components

Analog On/Off Switch

Properties

- InitialEnabled - Analog On/Off Switch.InitialEnabled

Pins

- In - Analog On/Off Switch.InputPin
- Enable - Analog On/Off Switch.EnableInputPin
- Out - the Analog Output pin of the component or element

Analog Mux (Multi channel Switch)

Properties

- .InitialChannel - Analog Mux(Multi channel Switch).InitialChannel

Pins

- Select - the Unsigned Integer "Select Input Muxer Channel" Input Pin of the component or element
- In - the Analog Input pins of the component or element
- Out - the Analog Output pin of the component or element

Analog Differentiator (Delta Change)

Properties

- Enabled – enables or disables the component.

Pins

- In – the Input Pin of the component.
- Out – the Output Pin of the component.
- Clock - the clock input pin of the component

Analog Array Replace Items At Index

Properties

- Enabled – enables or disables the component.
- Index – specifies the Index where the items that need to be replaced start.
- Value Elements - specifies the New items to replace the old one.

Pins

- In – the Input Pin of the component.
- Out – the Output Pin of the component.

Analog Toggle Switch

Properties

- InitialSelectValue - Analog Toggle Switch.InitialSelectValue

Pins

- True - the Analog Input pin to be used when Select input pin is True
- False - the Analog Input pin to be used when Select input pin is False
- Select - selects one of the inputs as source for the output of the component
- Out - the Analog Output pin of the component or element

Analog Demux (Multiple Output channel Switch)

Properties

- InitialChannel – initial channel when the execution starts.

Pins

- In – input pin of the demuxer. The data from this pin will be sent to the selected out pin
- Out – Output pins. The data from the input pin will be sent to the one of the output pins indicated by the value received in the Select pin
- Select – selects the output pin where the data will be sent

Remember Analog Value

Properties

- Enabled - enables or disable the component.

Pins

- Remember - Remember Analog Value.RememberInputPin
- Recall - Remember Analog Value.RecallInputPin
- In - the Analog Input pin of the component or element
- Out - the Analog Output pin of the component or element

Analog Schmitt Trigger (Hysteresis)

Properties

- Value - Analog Schmitt Trigger (Hysteresis).Value
- Threshold - Analog Schmitt Trigger (Hysteresis).Threshold
- InitialValue - Analog Schmitt Trigger (Hysteresis).InitialValue
- Inverted - Analog Schmitt Trigger (Hysteresis).Inverted
- Enabled - CommonAnalogEnableSink.Enabled

Pins

- Out - Analog Schmitt Trigger (Hysteresis).OutputPin
- In - The Analog Input pin of the component or element

Calculate Dew Point

Properties

- InFahrenheit - Calculate Dew Point.InFahrenheit
- InitialTemperature - Calculate Dew Point.InitialTemperature
- InitialHumidity - Calculate Dew Point.InitialHumidity
- Enabled - enables or disable the component.

Pins

- Temperature - Calculate Dew Point.TemperatureInputPin
- Humidity - Calculate Dew Point.HumidityInputPin
- Out - the Analog Output pin of the component or element

Analog Components



Ignore Analog Values

Properties

- Enabled – enables or disables the component.
- Pass Equal Values – if True the values equal to the Value property will pass through the filter.
- Pass Values Bellow – if True the values bellow to the Value property will pass through the filter. If False the values Above will pass.
- Value – value specifying the limit

Pins

- In – the Input Pin of the component.
- Out – the Output Pin of the component.

Speed and Direction To Speed

Properties

- Enabled – enables or disables the component.
- Initial Reverse – initial Reverse value
- Initial Speed – initial Speed value

Pins

- Speed – the Speed Input Pin
- Reverse – the Reverse Input Pin
- Out – the Output Speed Pin

Speed To Speed and Direction

Properties

- InverseForward - specifies if the output speed will be inversed when the input speed is above 0.5 (moving forward)
- InverseReverse - Specifies if the output speed will be inversed when the input speed is bellow 0.5 (moving reverse)
- Enabled - CommonAnalogEnableSink.Enabled

Pins

- Speed - the Speed Analog Output pin of the component
- Direction - the Direction Digital Output pin of the component
- In - the Analog Input pin of the component or element

Compass Heading

Properties

- DeclinationAngle - Compass Heading.DeclinationAngle
- Units - Compass Heading.Units

Pins

- In - Compass Heading.InputPins
- Out - the Analog Output pin of the component or element

Analog Multi Source

Pins

- In – input pin where the data arrives to be sent through the Out pins. Any data that arrives on this pin will be sent to every output pin in order from the first to the last output pin.
- Out – output pins where the data received in the In pin is sent. The data is sent in order from the first to the last pin.

Calculate Heat Index

Properties

- InFahrenheit - Calculate Heat Index.InFahrenheit
- InitialTemperature - Calculate Heat Index.InitialTemperature
- InitialHumidity - Calculate Heat Index.InitialHumidity
- Enabled - enables or disable the component.

Pins

- Temperature - Calculate Heat Index.TemperatureInputPin
- Humidity - Calculate Heat Index.HumidityInputPin
- Out - the Analog Output pin of the component or element

Triangle Analog Generator

Properties

- Asymmetry - specifies the Asymmetry of the generated wave
- Amplitude - specifies the Amplitude of the generator
- Offset - specifies the Offset of the generator
- Frequency - specifies the Frequency of the generator
- Phase - specifies the Phase of the generator
- Enabled - enables or disable the component.

Pins

- Clock - the clock input pin of the component or element
- Out - the Analog Output pin of the component or element

Analog Array Value

Properties

- Elements – optional elements that can change the output value in different ways.
- Value Elements - specifies the Analog Array value.

Pins

- Clock - the clock input pin of the component
- Out – the Output Pin of the component.

Analog Multi-Source Merger

Pins

- In - the Analog Input pins of the component or element
- Out - the Analog Output pin of the component or element

Analog Components



Calculate Absolute Humidity

Properties

- Enabled – enables or disables the component.
- In Fahrenheit - specifies if the temperature will be measured in Celsius (Centigrade) or Fahrenheit
- Initial Humidity – specifies the initial Humidity
- Initial Temperature – specifies the initial Temperature

Pins

- Temperature – the Temperature Input Pin of the component.
- Humidity – the Humidity Input Pin of the component.
- Out – the Output Pin of the component.

Gauss Analog Generator

Properties

- Mean - Gauss Analog Generator.Mean
- StandardDeviation - Gauss Analog Generator.StandardDeviation
- Seed - Gauss Analog Generator.Seed
- Enabled - enables or disable the component.

Pins

- Clock - the clock input pin of the component or element
- Out - the Analog Output pin of the component or element

Analog Value

Properties

- Value - specifies the analog value.
- Elements - Analog Value.Elements

Pins

- Clock - the clock input pin of the component or element
- Out - the Analog Output pin of the component or element

Analog Array To Analog

Properties

- Enabled – enables or disables the component.

Pins

- In – the Input Pin of the component.
- Out – the individual Analog Output Pins of the component, where the array values are sent.

Complementary Angle Filter

Properties

- Enabled – enables or disables the component.
- Time Constant (tau) – specifies the Time Constant (tau) of the filter.
- Units - specifies the Angle Units (Degree, Radians, Normalized (0.0-1.0))

Pins

- In – the Input Pin of the component.
- Out – the Output Pin of the component.
- Rate of Change – the Rate of Change Input Pin of the component.

Analog To Unsigned

Properties

- Round - specifies if the Analog value will be rounded or truncated when converting
- Constrain - specifies if the sign bit will be included or excluded (Constrained)
- Scale - specifies the scale factor for the conversion

Pins

- Out - the Unsigned Integer Output pin of the component or element
- In - the Analog Input pin of the component or element

Second Order Complementary Angle Filter

Properties

- Coefficient (K) – specifies the Coefficient of the filter
- Enabled – enables or disables the component.
- Units - specifies the Angle Units (Degree, Radians, Normalized (0.0-1.0))

Pins

- In – the Input Pin of the component.
- Out – the Output Pin of the component.
- Rate of Change – the Rate of Change Input Pin of the component.

Second Order Complementary Analog Filter

Properties

- Coefficient (K) – specifies the Coefficient of the filter
- Enabled – enables or disables the component.
-

Pins

- In – the Input Pin of the component.
- Out – the Output Pin of the component.
- Rate of Change – the Rate of Change Input Pin of the component.

Celsius To Fahrenheit

Properties

- Reverse - specifies if the conversion will be performed in reverse
- Enabled - enables or disable the component.

Pins

- In - the Analog Input pin of the component or element
- Out - the Analog Output pin of the component or element

Analog Components



Analog To Text

Properties

- MinWidth - specifies the minimum field width of the output text
- Precision - specifies the number of digits after the decimal sign

Pins

- Out - the Text Output pin of the component or element
- In - the Analog Input pin of the component or element

Metres To Feet

Properties

- Reverse - specifies if the conversion will be performed in reverse
- Enabled - enables or disable the component.

Pins

- In - the Analog Input pin of the component or element
- Out - the Analog Output pin of the component or element

Celsius To Kelvin

Properties

- Reverse - specifies if the conversion will be performed in reverse
- Enabled - enables or disable the component.

Pins

- In - the Analog Input pin of the component or element
- Out - the Analog Output pin of the component or element

Analog To Integer

Properties

- Round - specifies if the Analog value will be rounded or truncated when converting
- Scale - specifies the scale factor for the conversion

Pins

- Out - the Integer Output pin of the component or element
- In - the Analog Input pin of the component or element

Pressure To Altitude

Properties

- BaseLinePressure - Pressure To Altitude.BaseLinePressure
- Enabled - enables or disable the component.

Pins

- In - the Analog Input pin of the component or element
- Out - the Analog Output pin of the component or element

Complementary Analog Filter

Properties

- Enabled - enables or disables the component.
- Time Constant (tau) - specifies the Time Constant (tau) of the filter.

Pins

- In - the Input Pin of the component.
- Out - the Output Pin of the component.
- Rate of Change - the Rate of Change Input Pin of the component.

Altitude Pressure to Sea Level Pressure

Properties

- Altitude - Altitude Pressure To Sea Level Pressure.Altitude
- Enabled - enables or disable the component.

Pins

- In - the Analog Input pin of the component or element
- Out - the Analog Output pin of the component or element

Analog Components

DATA SINKS | Text >>

Split JSON Object

Properties

- Elements – specifies the elements to be extracted from the JSON Object
- Enabled – the Enable Input Pin of the component.

Pins

- In – the Input Pin of the component.
- Unprocessed Name – sends out the name of any extra value that is in the JSON Object but is not in the Elements.
- Value – sends out any extra value that is in the JSON Object but is not in the Elements.
- Error – this Output Pin will send clock signal if there is error during the parsing.

Split JSON Array

Properties

- Elements – Specifies the elements to be extracted from the JSON Array
- Enabled – The Enable Input Pin of the component.

Pins

- In – the Input Pin of the component.
- Unprocessed Index – sends out the Index of any extra value that is in the JSON Array but is not in the Elements.
- Value – sends out any extra value that is in the JSON Array but is not in the Elements.
- Error – this Output Pin will send clock signal if there is error during the parsing.

COMPLEX | Complex Array Value

Properties

- Elements – optional elements that can change the output value in different ways.
- Value Elements – specifies the Analog Array value.

Pins

- Clock – the clock input pin of the component
- Out – the Output Pin of the component.

Square Complex Generator

Properties

- Amplitude – specifies the Amplitude of the generator
- Asymmetry – specifies the Asymmetry of the generator
- Enabled – enables or disables the component.
- Frequency (Hz) – specifies the Frequency of the generator
- Offset – specifies the Offset of the generator
- Phase – specifies the Phase of the generator
- When Disabled – specifies the behavior of the generator when disabled.

Pins

- Clock – the clock input pin of the component
- Out – the Output Pin of the component.
- Reset – when clocked resets the generator to initial state.

Complex Array To Complex

Properties

- Enabled – enables or disables the component.

Pins

- In – the Input Pin of the component.
- Out – the individual Complex Output Pins of the component, where the array values are sent.

Step/Iterate Complex Array Items

Properties

- Enabled – enables or disables the component.

Pins

- In – the Input Pin of the component.
- Out – the Output Pins for the individual Binary blocks.
- Empty – this pin will send clock signal if the input data is empty (Has zero items).
- Count – output Pin outputting the count of items in the Binary data.
- Index – output Pin outputting the current index being sent out.

Complex Value

Properties

- Elements – optional elements that can change the output value in different ways.
- Value – specifies the Complex value.

Pins

- Clock – the clock input pin of the component
- Out – the Output Pin of the component.

Complex Snapshot

Properties

- Enabled – enables or disables the component.

Pins

- In – the Input Pin of the component.
- Out – the Output Pin of the component.
- Snapshot – the Snapshot clock input pin of the component or element. When this pin is clocked the latest data that had arrived on the Input will be sent to the Output Pin

Data Sinks & Complex Components



Inverse Complex Fast Fourier (IFFT)

Properties

- Enabled – enables or disables the component.
- Order – specifies the Order of the IFFT conversion

Pins

- In – the Input Pin of the component.
- Out – the Output Pin of the component.

Remember Complex Array

Properties

- Enabled – enables or disables the component.
- InitialValue – initial stored value.

Pins

- In – the Input Pin of the component.
- Out – the Output Pin of the component.
- Remember (Write) – when this pin is clocked the stored value will be sent to the Output Pin.
- Recall (Read) – when this pin is clocked the latest value on the Input Pin value will be stored

Triangle Complex Generator

Properties

- Amplitude - specifies the Amplitude of the generator
- Asymmetry - specifies the Asymmetry of the generator
- Enabled – enables or disables the component.
- Frequency (Hz) - specifies the Frequency of the generator
- Offset - specifies the Offset of the generator
- Phase - specifies the Phase of the generator
- When Disabled – specifies the behavior of the generator when disabled.

Pins

- Clock - the clock input pin of the component
- Out – the Output Pin of the component.
- Reset – when clocked resets the generator to initial state.

Complex Change Only

Properties

- Enabled – Enables or Disables the component. If the component is enabled, only if the newly arriving data differs than the last previously arrived data, the value will be sent to the Output Pin. If the component is Disabled, any data arriving to the input pin will be sent to the Output Pin.
- Threshold – Specifies the minimal Threshold (Difference) between the samples above which the data is considered changed.

Pins

- In – the Input Pin of the component.
- Out – the Output Pin of the component.
- Difference – this pin will output the value difference between the two samples.

Sine Complex Generator

Properties

- Amplitude - specifies the Amplitude of the generator
- Enabled – enables or Disables the component.
- Frequency (Hz) - specifies the Frequency of the generator
- Offset - specifies the Offset of the generator
- Phase - specifies the Phase of the generator
- When Disabled – specifies the behavior of the generator when disabled.

Pins

- Clock - The clock input pin of the component
- Out – The Output Pin of the component.
- Reset – When clocked resets the generator to initial state.

Complex Array Delete Items

Properties

- Count – specifies the number of bytes to be deleted.
- Enabled – enables or Disables the component.
- Index – specifies the starting index from where the Complex Items will be deleted.

Pins

- In – the Input Pin of the component.
- Out – the Output Pin of the component.

Complex To Analog

Pins

- In – the Input Pin of the component.
- Out – the Real and Imaginary Analog Value Output Pins.

Complex Array Insert Items

Properties

- Enabled – enables or disables the component.
- Index – index where to insert the items.
- Value Elements – items to be inserted.

Pins

- In – the Input Pin of the component.
- Out – the Output Pin of the component.

Inverse Analog Fast Fourier (IFFT)

Properties

- Enabled – enables or disables the component.
- Order – specifies the Order of the IFFT conversion

Pins

- In – the Input Pin of the component.
- Out – the Output Pin of the component.

Complex Components

Random Complex

Properties

- Enabled – enables or disables the component.
- Max - specifies the maximum range for the generated values
- Min - specifies the minimum range for the generated values
- Seed - specifies the seed for the random generator

Pins

- Clock - The clock input pin of the component. When connected the component will generate new value only when clock signal is sent to the pin. Otherwise the component will constantly generate new values one after another.
- Out - The Output pin of the component

Compare Complex Value

Properties

- Compare Type - specifies the compare type
- Enabled - enables or disables the component.
- Only Changed – send to the output only if the compare result has changed.
- Value - specifies the Value to be used for the comparison

Pins

- In – the Input Pin of the component.
- Out - the Output Pin of the component indicating the result of the comparison

Forward Fast Fourier (FFT)

Properties

- Enabled – enables or disables the component.
- Order – specifies the Order of the FFT conversion
- Sample Rate – specifies the Sample Rate of the input data. Used for proper Frequency calculation.

Pins

- In – the Input Pin of the component.
- Out – the Output Pin of the component.
- Spectrum – the Frequencies Spectrum Output Pin of the component.
- Frequency – the Frequency with the highest Amplitude.

Complex Array Snapshot

Properties

- Enabled – enables or disables the component.

Pins

- In – the Input Pin of the component.
- Out – the Output Pin of the component.
- Snapshot - the Snapshot clock input pin of the component or element. When this pin is clocked the latest data that had arrived on the Input will be sent to the Output Pin

Analog To Complex

Pins

- In – the Real and Imaginary Analog Value Input Pins.
- Out – the Output Pin of the component.

Complex Array Replace Items At Index

Properties

- Enabled – enables or disables the component.
- Index – specifies the Index where the items that need to be replaced start.
- Value Elements - specifies the New items to replace the old one.

Pins

- In – the Input Pin of the component.
- Out – the Output Pin of the component.

Complex Toggle Demux

Properties

- InitialSelectValue - initial channel when the execution starts.

Pins

- In – input pin of the demuxer. The data from this pin will be sent to the selected True or False out pin
- Select – selects the True or False output pin where the data will be sent
- True – the True Output pin. If Select receives True the data from the In Pin will be sent through this pin.
- False – the False Output pin. If Select receives False the data from the In Pin will be sent through this pin.

Complex Demux (Multiple Output channel Switch)

Properties

- InitialChannel – initial channel when the execution starts.

Pins

- In – Input pin of the demuxer. The data from this pin will be sent to the selected out pin
- Out – Output pins. The data from the input pin will be sent to the one of the output pins indicated by the value received in the Select pin
- Select – Selects the output pin where the data will be sent

Complex Toggle Switch

Properties

- InitialSelectValue - initial channel when the execution starts.

Pins

- Select – selects the input pin from where the data will be sent
- Out – Output pins. The data from the input pin will be sent to the one of the output pins indicated by the value received in the Select pin
- True - the True Input pins of the Switch. The data from this pin will be sent to the output if True is sent to the Select Pin.
- False - the False Input pins of the Switch. The data from this pin will be sent to the output if True is sent to the Select Pin.

Complex Components



Complex On/Off Switch

Properties

- Ignore Same – if set to True only changing from sample to sample values will be sent to the output.
- Initial Enabled – the initial Enabled Value.
- Send on Enable – if set to True the latest previously received value will be sent out when the component switches from Disable to Enabled

Pins

- Enable – the Enable Input Pin of the component.
- In – the Input Pin of the component.
- Out – the Output Pin of the component.

Complex Array To Binary

Properties

- Enabled – enables or disables the component.

Pins

- In – the Input Pin of the component.
- Out – the Output Pin of the component.

Complex Components

Random Clock Generator

Properties

- MinFrequency - Random Clock Generator.MinFrequency
- MaxFrequency - Random Clock Generator.MaxFrequency
- Enabled - enables or disable the component.

Pins

- Out - the Clock Output pin of the component or element

Timeout Timer

Properties

- Interval - specifies the timer interval in microseconds
- AutoRepeat - specifies if the component will repeat the event automatically
- CanRestart - specifies if the component can be restarted during pulse period
- Enabled - enables or disable the component.

Pins

- Start - starts the timer
- Reset - clears the timer
- Out - the Digital Output pin of the component or element

Clock Multi Source

Pins

- Out - Clock Multi Source.OutputPins
- In - the Clock Input pin of the component or element

Start

Pins

- Out - the Clock Output pin of the component or element

Clock Generator

Properties

- Frequency - specifies the Frequency of the generator
- Enabled - enables or disable the component.

Pins

- Out - the Clock Output pin of the component or element

On/Off Delay

Properties

- Enabled – enables or disables the component.
- Initial Value – initial output value.
- Off Interval(uS) – delay in uS before the output turns Off
- On Interval(uS) – delay in uS before the output turns On

Pins

- In – the Input Pin of the component.
- Out – the Output Pin of the component.

Clock Mux (Multi channel Switch)

Properties

- InitialChannel - Clock Mux(Multi channel Switch).InitialChannel

Pins

- Select - Clock Mux(Multi channel Switch).SelectInputPin
- In - ClockMultiInputSource.InputPins
- Out - the Clock Output pin of the component or element

Detect Edge

Properties

- Rising - specifies the detected edge - Rising or Falling
- Enabled - enables or disable the component.

Pins

- In - the Digital Input pin of the component or element
- Out - the Clock Output pin of the component or element

Delay

Properties

- Interval - specifies the delay interval in microseconds
- CanRestart - specifies if the component can be restarted during delay period
- Enabled - enables or disable the component.

Pins

- Start - starts the delay
- Reset - clears the pending delay event
- Out - the Clock Output pin of the component or element

Synchronization Components



Timer (Single Pulse/Clock To Digital)

Properties

- Interval - specifies the timer interval in microseconds
- AutoRepeat - specifies if the component will repeat the event automatically
- CanRestart - specifies if the component can be restarted during pulse period
- Enabled - enables or disable the component.

Pins

- Start - starts the timer
- Reset - clears the timer
- Out - the Digital Output pin of the component or element

Complex Multi Source

Pins

- In - input pin where the data arrives to be sent through the Out pins. Any data that arrives on this pin will be sent to every output pin in order from the first to the last output pin.
- Out - output pins where the data received in the In pin is sent. The data is sent in order from the first to the last pin.

Repeat

Properties

- Enabled - enables or disable the component.

Pins

- Out - the Clock Output pin of the component or element

Clock Toggle Demux

Properties

- InitialSelectValue - initial channel when the execution starts.

Pins

- In - Input pin of the demuxer. The clock from this pin will be sent to the selected True or False out pin
- Select - Selects the True or False output pin where the clock will be sent
- True - The True Output pin. If Select receives True the clock from the In Pin will be sent through this pin.
- False - The False Output pin. If Select receives False the clock from the In Pin will be sent through this pin.

Unsigned Multi Source

Pins

- In - input pin where the data arrives to be sent through the Out pins. Any data that arrives on this pin will be sent to every output pin in order from the first to the last output pin.
- Out - output pins where the data received in the In pin is sent. The data is sent in order from the first to the last pin.

Clock On/Off Switch

Properties

- InitialEnabled - Clock On/Off Switch.InitialEnabled

Pins

- In - Clock On/Off Switch.InputPin
- Enable - Clock On/Off Switch.EnableInputPin
- Out - the Clock Output pin of the component or element

Clock Demux (Multiple Output channel Switch)

Properties

- InitialChannel - initial channel when the execution starts.

Pins

- In - input pin of the demuxer. The clock from this pin will be sent to the selected out pin
- Out - Output pins. The clock from the input pin will be sent to the one of the output pins indicated by the value received in the Select pin
- Select - selects the output pin where the clock will be sent

Clock Modified

Properties

- Enabled - enables or disables the component.

Pins

- In - the Input Pin of the component.
- Out - the Output Pin of the component.

Repeat Clock

Properties

- Count - specifies the times to repeat the value.
- Enabled - enables or Disables the component.
- Interval (uS) - interval in uS between repeated clock signals.

Pins

- In - the Input Pin of the component.
- Out - the Output Pin of the component.

Synchronization Components



Clock Toggle Switch

Properties

- InitialSelectValue - Color Toggle Switch.InitialSelectValue

Pins

- True - the Color Input pin to be used when Select input pin is True
- False - the Color Input pin to be used when Select input pin is False
- Select - selects one of the inputs as source for the output of the component
- Out - the Color Output pin of the component or element

Repeat Unsigned

Properties

- Count – specifies the times to repeat the value.
- Enabled – enables or disables the component.

Pins

- In – the Input Pin of the component.
- Out – the Output Pin of the component.

Repeat Char

Properties

- Count – specifies the times to repeat the value.
- Enabled – enables or disables the component.

Pins

- In – the Input Pin of the component.
- Out – the Output Pin of the component.

Date/Time Multi Source

Pins

- In – input pin where the data arrives to be sent through the Out pins. Any data that arrives on this pin will be sent to every output pin in order from the first to the last output pin.
- Out – output pins where the data received in the In pin is sent. The data is sent in order from the first to the last pin.

Repeat Complex

Properties

- Count – specifies the times to repeat the value.
- Enabled – enables or Disables the component.

Pins

- In – the Input Pin of the component.
- Out – the Output Pin of the component.

Char Multi Source

Pins

- In – input pin where the data arrives to be sent through the Out pins. Any data that arrives on this pin will be sent to every output pin in order from the first to the last output pin.
- Out – output pins where the data received in the In pin is sent. The data is sent in order from the first to the last pin.

Analog Multi Source

Pins

- In – input pin where the data arrives to be sent through the Out pins. Any data that arrives on this pin will be sent to every output pin in order from the first to the last output pin.
- Out – output pins where the data received in the In pin is sent. The data is sent in order from the first to the last pin.

Repeat Analog

Properties

- Count – specifies the times to repeat the value.
- Enabled – enables or disables the component.

Pins

- In – the Input Pin of the component.
- Out – the Output Pin of the component.

Binary Multi Source

Pins

- In – input pin where the data arrives to be sent through the Out pins. Any data that arrives on this pin will be sent to every output pin in order from the first to the last output pin.
- Out – output pins where the data received in the In pin is sent. The data is sent in order from the first to the last pin.

Synchronization Components

Repeat Binary

Properties

- Count – specifies the times to repeat the value.
- Enabled – enables or disables the component.

Pins

- In – the Input Pin of the component.
- Out – the Output Pin of the component.

Repeat Date/Time

Properties

- Count – specifies the times to repeat the value.
- Enabled – enables or disables the component.

Pins

- In – the Input Pin of the component.
- Out – the Output Pin of the component.

Digital Multi Source

Pins

- In – input pin where the data arrives to be sent through the Out pins. Any data that arrives on this pin will be sent to every output pin in order from the first to the last output pin.
- Out – output pins where the data received in the In pin is sent. The data is sent in order from the first to the last pin.

Sequence

Properties

-

Pins

-

Integer Multi Source

Pins

- In – input pin where the data arrives to be sent through the Out pins. Any data that arrives on this pin will be sent to every output pin in order from the first to the last output pin.
- Out – output pins where the data received in the In pin is sent. The data is sent in order from the first to the last pin.

Repeat Text

Properties

- Count – specifies the times to repeat the value.
- Enabled – enables or disables the component.

Pins

- In – the Input Pin of the component.
- Out – the Output Pin of the component.

Repeat Quaternion

Properties

- Count – specifies the times to repeat the value.
- Enabled – enables or disables the component.

Pins

- In – the Input Pin of the component.
- Out – the Output Pin of the component.

Repeat Digital

Properties

- Count – specifies the times to repeat the value.
- Enabled – enables or disables the component.

Pins

- In – the Input Pin of the component.
- Out – the Output Pin of the component.

Text Multi Source

Pins

- In – input pin where the data arrives to be sent through the Out pins. Any data that arrives on this pin will be sent to every output pin in order from the first to the last output pin.
- Out – output pins where the data received in the In pin is sent. The data is sent in order from the first to the last pin.

Synchronization Components

Repeat Integer

Properties

- Count – specifies the times to repeat the value.
- Enabled – enables or disables the component.

Pins

- In – the Input Pin of the component.
- Out – the Output Pin of the component.

Quaternion Multi Source

Pins

- In – input pin where the data arrives to be sent through the Out pins. Any data that arrives on this pin will be sent to every output pin in order from the first to the last output pin.
- Out – output pins where the data received in the In pin is sent. The data is sent in order from the first to the last pin.

Synchronization Components