

# Weidmüller Remote IO

## Component Help

**Short Description:** This document describes the Weidmüller Remote IO component from Weidmüller Remote IO library. At the end of this document links for further readings are provided.

**NOTE:** Modules that are currently supported with this component are: UR20-16DO-P, UR20-16DI-P, UR20-4AO-UI-16, UR20-4AI-UI-16

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## REQUIREMENTS

Usage of Weidmüller Remote IO component requires a Typhoon HIL device. Typhoon HIL device requirements are listed in Table 1. Any Typhoon HIL real-time simulator that fulfills the listed requirements supports this component.

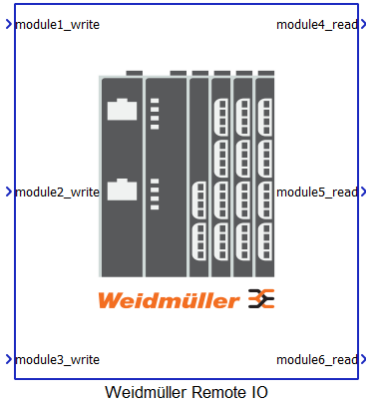
*Table 1. List of Typhoon HIL requirements for Weidmüller Remote IO*

Item	Number/Value	Comment
Number of FPGA cores (SPCs)	0	This component is signal processing component.
Simulations Step	20µs	20µs or smaller simulation step is required.
HIL Analog Outputs	0	Not Applicable.
HIL Analog Inputs	0	Not Applicable.
HIL Digital Outputs	0	Not Applicable.
HIL Digital Inputs	0	Not Applicable.
Communication protocol	Modbus	Modbus Client component is implemented inside of the component.

# COMPONENT DESCRIPTION

Weidmüller Remote IO component is a real-time simulation-ready component designed to work with Weidmüller Remote IO u-remote system device.

Table 2. Weidmüller Remote IO component in Weidmüller Remote IO library.

Library Component	Component Parameters/Tabs
<p>Schematic Library Component:</p> 	<p>Property tabs:</p> <ul style="list-style-type: none"><li><input type="checkbox"/> Modbus</li><li><input type="checkbox"/> General</li><li><input type="checkbox"/> Add I/O modules</li><li><input type="checkbox"/> Analog module X</li></ul>

## COMPONENT PARAMETERS

Weidmüller Remote IO component parameters are divided into 3 main tabs (as listed in Table 2) and several Analog module tabs, which number depends on number of analog input/output modules. All tabs and their properties are described in the following subsections.

### Tab: “Modbus”

In this property tab, Modbus parameters are specified. Its layout is shown in Figure 1.

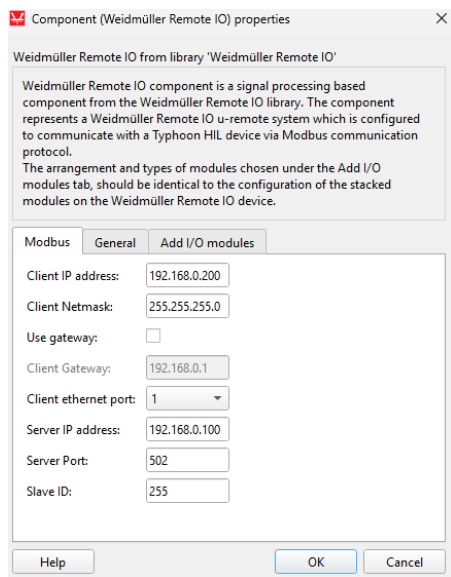


Figure 1. Weidmüller Remote IO Modbus

Table 3. Weidmüller Remote IO Modbus

Name	Description
Client IP address	Specify the Modbus Client IP address. The defined IP address will be applied to the HIL Device and it will use the specified address to connect to the Modbus Server (Weidmüller Remote IO u-remote device).
Client Netmask	Specify the netmask of the Modbus Client.
Use gateway	If enabled, network gateway can be specified.
Client Gateway	Specifies the Gateway IP address.
Client ethernet port	Ethernet port property defines which ethernet port on the back of the HIL device will be used by Modbus application.
Server IP address	Specify the IP address of Weidmüller Remote IO u-remote device to which Modbus Client is connected to.
Server port	Specify the Port number Weidmüller Remote IO u-remote device to which Modbus Client is connected to.
Slave ID	Specify the Slave ID of the Modbus Client component. Although Modbus TCP defines that the Slave ID should be 255, you can define this value if a specific ID is required

## Tab: “General”

In this property tab, General parameters are specified. Its layout is shown in Figure 2.

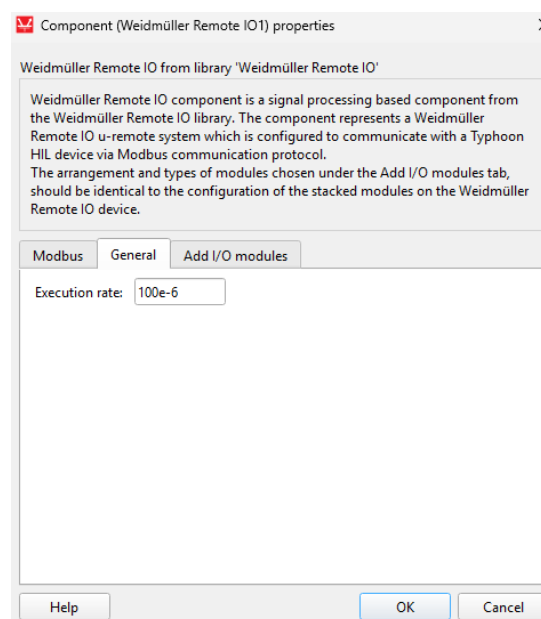


Figure 2. Weidmüller Remote IO General

Table 4. Weidmüller Remote IO General

Name	Description
Execution rate	Execution rate in seconds.

## Tab: “Add I/O modules”

In this property tab modules of Weidmüller Remote IO u-remote device are specified. Its layout is shown in Figure 3.

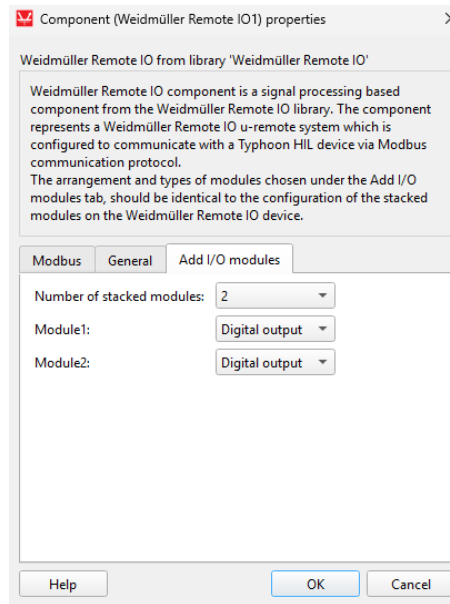


Figure 3. Weidmüller Remote IO Add I/O modules

Table 5. Weidmüller Remote IO Add I/O modules

Name	Description
Number of stocked modules	Define number of modules stacked on the Weidmüller Remote IO u-remote system. The maximum number of stacked modules is 64. This change will be applied only when OK button is pressed, and new properties, which match selected number, will be created.
ModuleX	Type of the stacked module (Digital input, Digital output, Analog input, Analog output). X is number between 1 and number of stacked modules defined in corresponding property. Depending on chosen types, additional tabs will be created/deleted when OK is pressed. <b>NOTE:</b> The arrangement and types of modules chosen on the component's mask should be identical to the configuration of the stacked modules on the Weidmüller Remote IO u-remote device.

## Tab: “Analog module X”

In this property tab Analog module settings are defined. X can be a number between 1 and number of stacked modules defined in corresponding property. Its layout is shown in Figure 4.

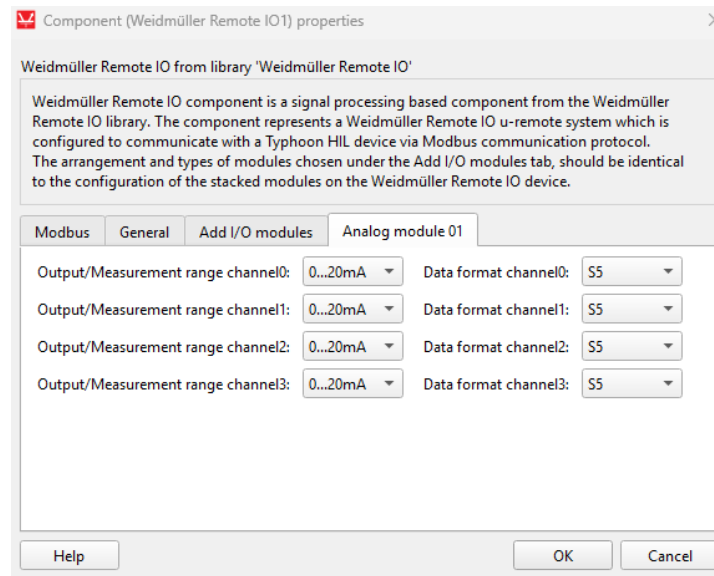


Figure 4. Weidmüller Remote IO Analog module

Table 6. Weidmüller Remote IO Analog module

Name	Description
Output/Measurement range channel	Choose the range of currents and voltages for the corresponding analog module channel (Current ranges are expressed in mA).
Data format channel	Data format defines the range of the corresponding Modbus register values which will be converted into selected voltage or current range. Both S5 and S7 data formats for each of the analog module channels are supported.

**NOTE:** Output/Measurement current/voltage ranges and data formats for each analog module channel chosen under the corresponding analog module tab on the component's mask should be identical to the configuration of the analog modules available on the Weidmüller Remote IO u-remote device.

## PORTS DESCRIPTION

Table 7. Weidmüller Remote IO component ports

Name	Type	Description
moduleX_write	Signal processing	Vectorized input of signals that should be sent to Weidmüller Remote IO u-remote system. For digital modules, number of supported channels is 16, so vector of 16 elements should be connected to this input. For analog modules, number of supported channels is 4, so vector of 4 elements should be connected to this input.
moduleX_read	Signal processing	Vectorized output of signals that were received from Weidmüller Remote IO u-remote system. For digital modules, number of supported channels is 16, so 16 elements can be accessed through this port. For analog modules, number of supported channels is 4, so 4 elements can be accessed through this port.

## LINKS

[Weidmüller Remote IO u-remote system](#) – additional information about Weidmüller Remote IO