

Manufacturer: Crestron Germany
Model: Modbus/RTU
Device Type: Modbus Devices

GENERAL INFORMATION:

SIMPLWINDOWS NAME:	Modbus-RTU Processor
CATEGORY:	HVAC
VERSION:	V1.1
SUMMARY:	Process Tx and Rx from one Com-Port for all Modbus/RTU modules.

GENERAL NOTES:

Modbus is a generic communications protocol. It allows a group of addressable informations to be accessed by the Crestron system. There are digital coils, which have two states - on and off. There are also analog register, which allow 16 bit numbers to be accessed. Some informations/values are read only, while others are read/write. The Input register and Discrete Inputs are read only. The Holding register and Coils are read-/writeable.

Modbus supports principal two different command formats – RTU and TCP. This module uses the RTU format.

Each device on a Modbus system is uniquely addressed by its Unit-Address. The Modbus device is reachable over a Com-Port with his Unit-Address. There is a single parameter field for the unit identifier (unit id), Integer.

If you want to control one Modbus device, you have to use and connect this module with one Com-Port and the corresponding Unit-Address. The Tx and Rx have to be connected to this module (Modbus-RTU Processor). This module process all outgoing and incoming traffic (Tx and Rx). You can find an example in the Demo program.

CRESTRON HARDWARE REQUIRED: 2-series and 3-series processor

SETUP OF CRESTRON HARDWARE: **RTU Connection**
Set your serial setting according to your Modbus-Device.

VENDOR FIRMWARE: -

VENDOR SETUP: Same serial settings like the control system.

CABLE DIAGRAM: RS485/RS232

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CONTROL:

Start_incremental_Polling	D	Pulse to start incremental polling with next_Poll on an ring counter to step through all modules.
Stop_incremental_Polling	D	Pulse to stop incremental polling.
Rx	S	Serial Signal that have to be connected to the Rx Output of the Com-Port
To_Processor	S	Serial Signal that have to be connected to all modules (Read and Write Holding Register / Read and Write Coils / Read Discrete Inputs / Read Input Register) to control Modbus devices.

FEEDBACK:

Next_Poll	D	If you want to step with polling through all modules, use this signal on an Ring Counter.
Tx	S	Serial Signal that have to be connected to the Tx Input of the Com-Port.
ErrorMsg	S	This signal shows error messages.
From_Processor[1-100]	S	Serial Signal which have to be allocated to one module (Read and Write Holding Register / Read and Write Coils / Read Discrete Inputs / Read Input Register) and connect to the From_Processor Input.

PARAMETERS:

Time_between_each_Poll	I	If you want to step through all modules with Signal "next_Poll" and a Ring Counter, you can define here the time between each poll. This integer is in ticks, means 1t = (1/100)s.
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TESTING:

OPS USED FOR TESTING: MC3: 1.011.0023

SIMPL WINDOWS USED FOR TESTING: 4.0.2

CRESTRON DB USED FOR TESTING: 51.05.007.00

DEVICE DB USED FOR TESTING: 65.05.003.00

SAMPLE PROGRAM: Modbus-RTU Demo v1.1.smw

REVISION HISTORY: Modbus-RTU Demo v1.0

MODIFICATIONS:

Version 1.1:

- Bugfix for the Analog 32 64 bit Serial Converter. The Converter converts the 2 or 4 Analog 16bit Values to early so that the two high bytes are already set, but the low bytes are still 0 or have the last value. In the Analog 32 64 bit Serial Converter you are now able to Convert discrete with a Digital Pulse, so you have to use a Serial/Analog OneShot with the last Analog Value which comes out of the Modbus Module.
- Bugfix for sending decimal 254 to a register you got an error "Error in End Sign"
- Time_between_each_Poll reacts now just on the next_Poll Signal and not on all commands

Version 1.0:

Now you are able to convert 2xAnalog Values to one Serial 32bit value for visualization or 4xAnalog Values to one Serial 64bit Value for visualization. Therefor you need the Analog 32 64 bit Serial Converter v1.0.