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

GENERAL INFORMATION:

SIMPLWINDOWS NAME:	Modbus-TCP FC4 Read Input Register
CATEGORY:	HVAC
VERSION:	V1.3
SUMMARY:	Read Input Register from a Modbus system.
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 TCP format. Modbus communicates over TCP and the default Port is 502. But the Port is configurable in the Modbus device. Each device on a Modbus system is uniquely addressed by its IP-Address. The Modbus device is reachable over a TCP/IP Client with his IP-Address. There is also a single parameter field for the unit identifier (unit id), Integer. This unit identifier is just needed, when the Modbus device is reachable over Modbus/RTU over a Gateway from Modbus/TCP. If the Modbus device is Modbus/TCP the unit id has to be 255 for broadcast and is reachable over the IP-Address over the TCP/IP Client. This module has additional two parameter fields which specify the number of register and start address to read. For example you want to read register 5-10, start address has to be the value 5 and number of addresses has to be the value 6. Of course you can just use one register/address. A Pulse on the Digital Input poll will poll and give a feedback to the Digital Signals register_values_fb[1-100]. The number of register_values_fb have to be the same number like the Integer Parameter "number of addresses". The not used Signals can be comment out. The two serial Signals From_Processor and To_Processor have to be connected to the Modbus-TCP Processor module. This module process all the Tx and Rx and send the Rx to the corresponding module. The Modbus system does not do real time updating. Therefore we must poll for the current setting. This module uses Modbus function code 04, which is designated for reading register.
CRESTRON HARDWARE REQUIRED:	2- and 3-series processor
SETUP OF CRESTRON HARDWARE:	**TCP Connection (TCP/IP Client)** IP Address of the Modbus Device or Modbus Gateway Default TCP Port: 502

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VENDOR FIRMWARE:	-
VENDOR SETUP:	The correct IP-Address has to be set to the corresponding device.
CABLE DIAGRAM:	**NET** RJ45

CONTROL:

Poll_all	D	Pulse to poll the specified input register.
From_Processor	S	Serial Signal that has to be connected to one of the From_Processor Outputs of the Modbus-TCP Processor module. Every used module have to be connected to one From_Processor[1-100] Signal of the Processor.

FEEDBACK:

Register_value_fb[1-100]	D	Digital Feedback that indicates after a poll Pulse the register value.
To_Processor	S	Serial Signal that has to be connected to the To_Processor Input of the Modbus-TCP Processor module.

PARAMETERS:

unit id	I	Integer_Parameter to set the unit identifier. This is just then relevant, if you use a Modbus/RTU System connected to the Modbus/TCP over a Gateway. In a Modbus/TCP System the device will be reached over the IP-Address and have to be the value 255.
start address	I	Integer_Parameter to set the desired start address of the input register to read.
number of addresses	I	Integer_Parameter to set the desired number of input register starting with start address. This have to be the same number like the number of used register_values_fb Signals.

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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-TCP Demo v1.3.smw
REVISION HISTORY:	Modbus-TCP Demo v1.2
MODIFICATIONS:	**Version 1.3:** 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. **Version 1.2:** 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.