

MODBUS

straton user guide – Rev. 7

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straton



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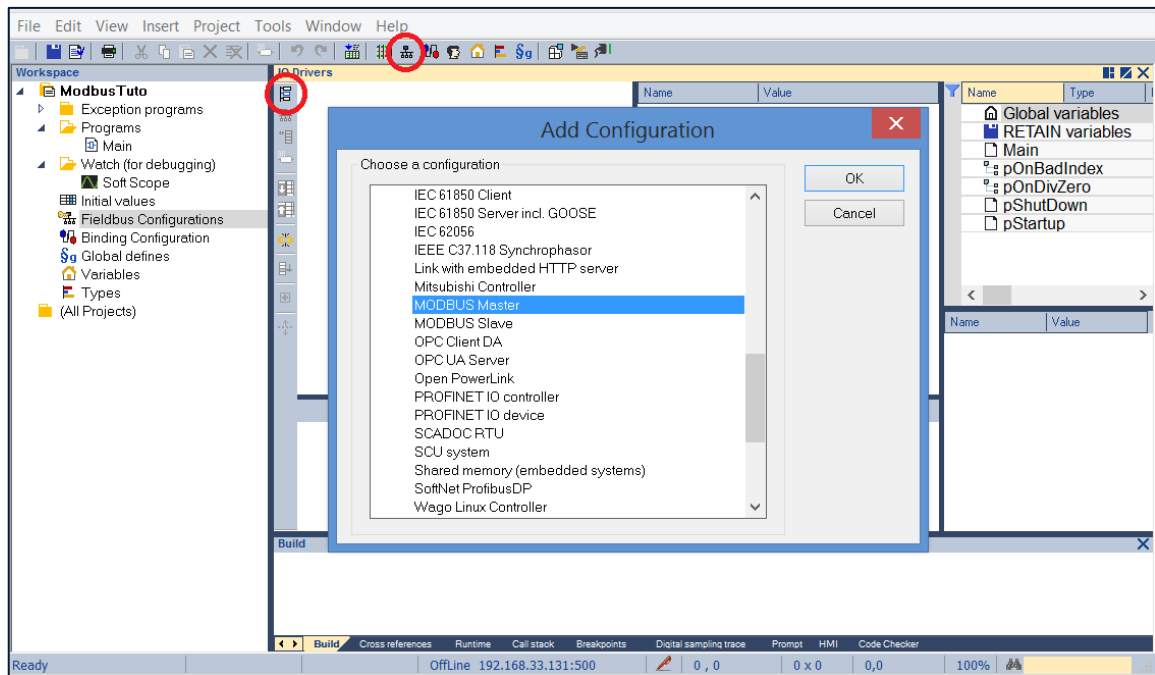
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1. Install Editor and runtime

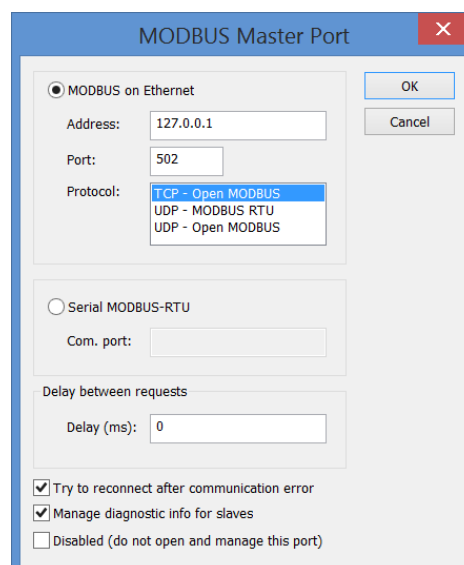
Download and install from <https://straton-plc.com/telechargements/>

2. Create a new MODBUS Master configuration

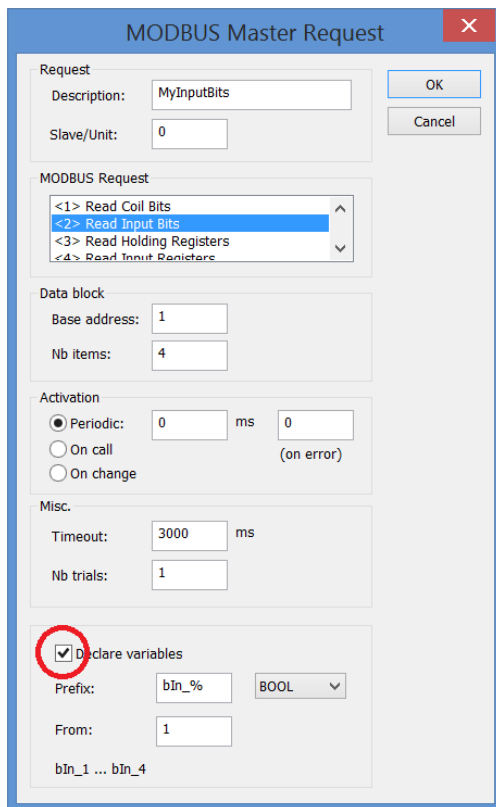
Open the IO Drivers () window, insert a configuration () and select the MODBUS Master driver:



Insert a Master/Port () corresponding to your MODBUS settings:



Insert a Slave/Datablock () and enter the corresponding information.




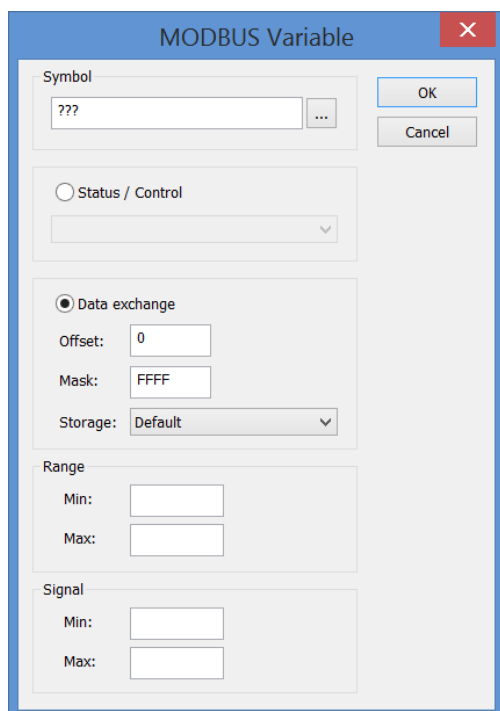
The dialog box is titled "MODBUS Master Request" and contains several sections. The "Request" section has a "Description" field with "MyInputBits" and a "Slave/Unit" field with "0". The "MODBUS Request" section has a list box with four options: "<1> Read Coil Bits", "<2> Read Input Bits" (which is selected), "<3> Read Holding Registers", and "<4> Read Input Registers". The "Data block" section has a "Base address" field with "1" and a "Nb items" field with "4". The "Activation" section has three radio buttons: "Periodic" (selected), "On call", and "On change". The "Misc." section has a "Timeout" field with "3000" and a "Nb trials" field with "1". The "Declare variables" section has a checked checkbox, a "Prefix" field with "bIn_%", a "From" field with "1", and a "bIn_1 ... bIn_4" label. There are "OK" and "Cancel" buttons at the top right.

NOTES

It is possible to automatically declare the variables by checking the "Declare variables" checkbox.

The name of the declared variables must be filled in the "Prefix" cell.

Variables can be inserted one by one. Use the "Insert Variable" button () and enter the corresponding information.



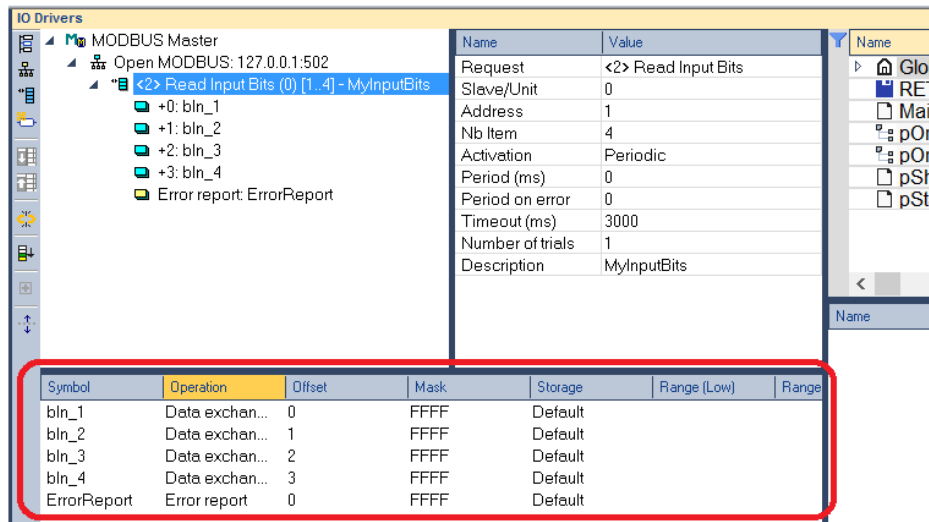
The dialog box is titled "MODBUS Variable" and contains several sections. The "Symbol" section has a text field with "???" and a button with "...". The "Status / Control" section has a radio button and a dropdown menu. The "Data exchange" section has a radio button (selected), an "Offset" field with "0", a "Mask" field with "FFFF", and a "Storage" dropdown menu with "Default". The "Range" section has "Min:" and "Max:" labels with text input fields. The "Signal" section has "Min:" and "Max:" labels with text input fields. There are "OK" and "Cancel" buttons at the top right.

When a variable is mapped to a data block in a master configuration, you can select it to be:

- ▶ An exchange of data (exchange between the MODBUS map and the T5 variables).
- ▶ A status (diagnostic information provided to the application).
- ▶ A command (using a variable for driving the stack).

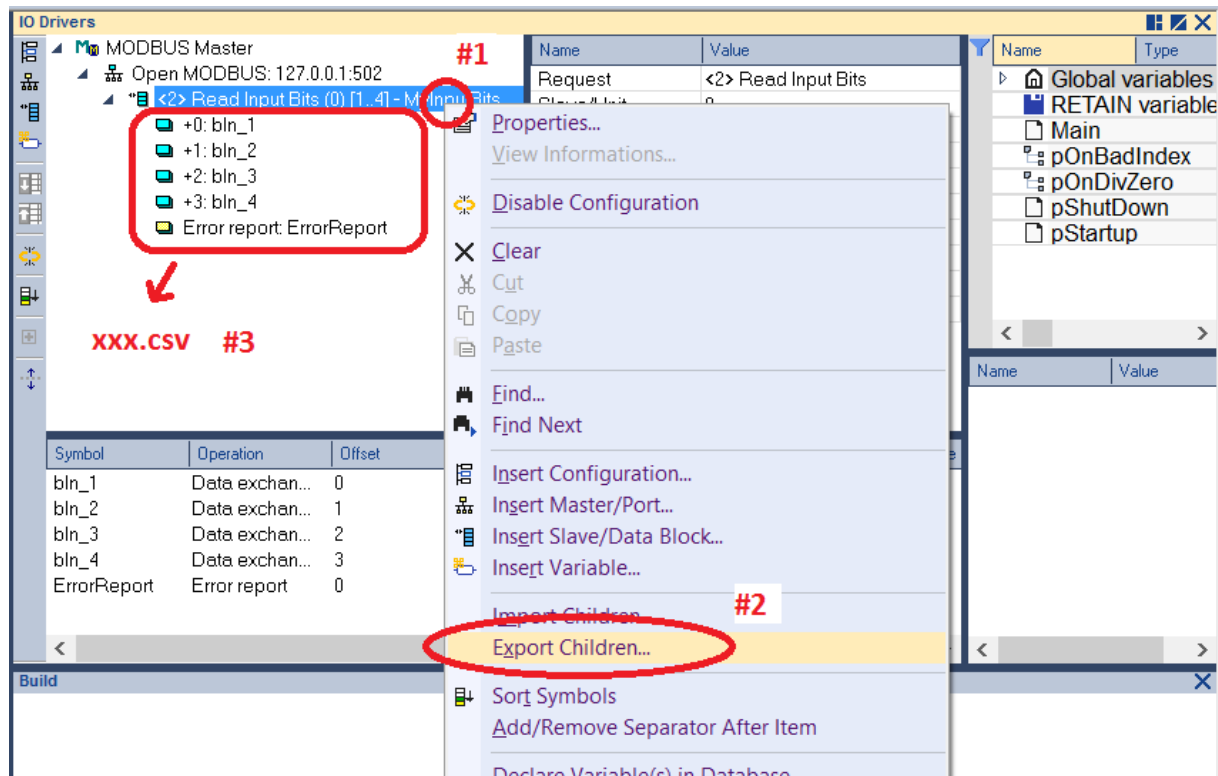
See the online help for more information

Variable information within a data block can also be edited in the grid. From this grid it is also possible to declare variables in the database doing a right-click on a variable.



The import/export in a CSV format is available using the right-click mouse button on an element of the configuration and then choosing to Import/Export Children.

This feature will import/export the sub-level. For example, a right-click on the Datablock (#1) and then Export Children (#2) will export all the block's variables (#3). An export from the Port will export only the Datablock configuration, etc.



3. Download the application

Download the application to the runtime:

- ▶ Select the communication parameters in menu Tools/Communication Parameters
- ▶ Establish the connection through menu Project/Online

RESULT IS:



The download is successful and application starts correctly.



The runtime is not started or communication parameters are wrong.



The application is not yet downloaded or an error occurs during startup. More detail can be found in the output view.

4. Frequently Asked Questions

How can I make a diagnostic on the MODBUS request?

In order to get a diagnostic on the communication it is recommended to add a variable map to the Status/Control -> Error Report (Data type DINT). See the online help for more information.

Is it possible to dynamically open/close a port of a MODBUS Master?

Yes, since 10.0 this is possible through a variable:

MODBUS Master	
Open MODBUS: 127.0.0.1:502	
Read Holding Registers (1) [1..1]	
+0: iRead	
Enable connection: bRun	
Error report: iErr	


Name	Value
Symbol	bRun
Operation	E
Offset	0
Mask	F
Storage	C
Range (Low)	
Range (High)	
Signal (Low)	
Signal (High)	

Data exchange
Error report
Enable connection
Error report (Set only)
On-going request
Success counter
Fail counter
Retry counter
Command (one shot)
Command (enable)
Reset counters
Slave: last error
Slave: last error date stamp
Slave: last error time stamp

The port is open when the variable changes to TRUE. It is closed when the variable changes to FALSE.

(See the online help for more details)

Can the parameters of the configuration be dynamic, without having to rebuild the application?

For example, if the address of the Modbus Slave should change, the best is to remove or deactivate the whole configuration (using the related button ) and use the MBMASTERTCP or MBMASTERRTU block in a dedicated program instead. See the online help for more details.

What about the MODBUS Slave configuration?

Most of what applies to the Master configuration also applies to the Slave one.

Important: on the Slave side, if the configuration is created through the Fieldbus Configurations, the Modbus TCP port will be the one from the Runtime (most of the time 502 or 1100).

The TCP port could be change using the MBSLAVETCP block.