

Si-Modbus-Configurator_V0.2n - Documentation

Introduction

Si-Modbus-Configurator_V0.2n is a software tool to set the Modbus parameters and test the communication for silicon irradiance sensors (Si-RS485...-MB) and temperature sensors (T...-RS485-MB) with Modbus protocol.

System Requirements

Recommended		Comments
General system	Windows-PC 1x available RS485 Port	If the system does not have any available RS485 port it is recommended to use an RS485 to USB converter.
Operating system	Windows 2000 / XP / 7 / 8 / 10 / 11 ¹⁾	
Hard drive disk space	At least 160 MB	
Display resolution	At least 1024 x 728 px	

¹⁾ from Software Version 0.27

Software Installation

To install the *Si-Modbus-Configurator_V0.2n*, execute the file *setup.exe* of the *Si-Modbus-Configurator_V0.2n* installation package and follow the instructions.

If the required LabVIEW RunTimeEngine has not been previously installed, it will be automatically installed on your system.

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Hardware Installation

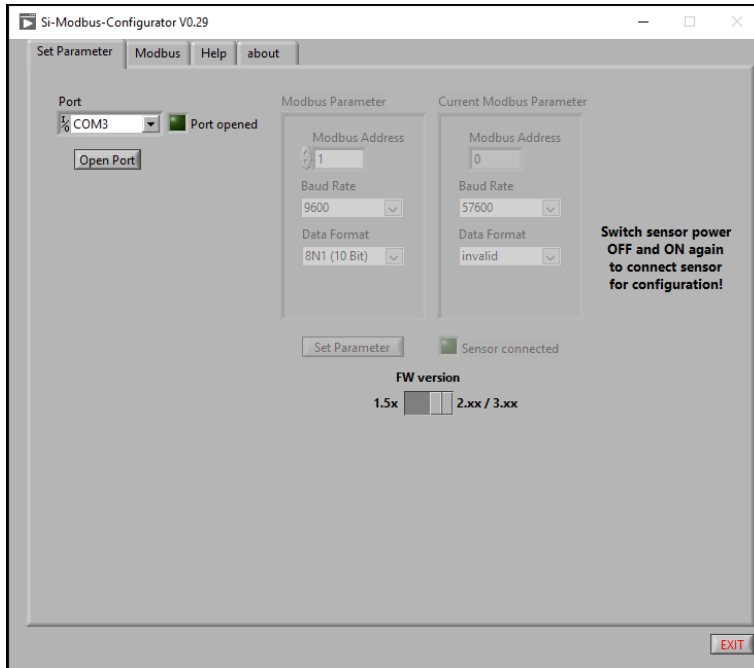
The PC must have an RS485 interface configured as a serial COM port. If no such interface is available, a USB-to-RS485 adapter can be used.

Connect the sensor to the RS485 bus and a 10–28 V DC power supply.

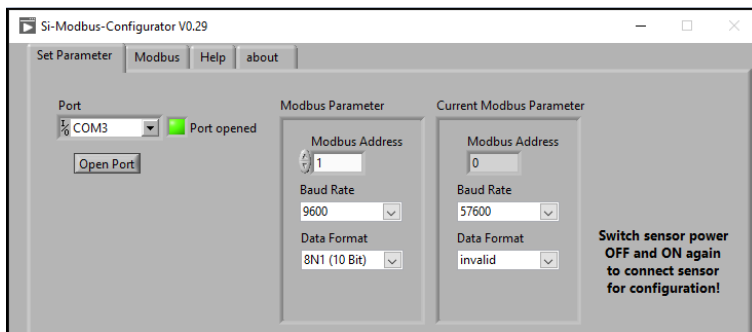
Only one sensor may be connected to the RS485 bus during configuration. If multiple sensors are installed, disconnect either the RS485 bus connection or the power supply to all sensors except the one being configured.

Using Si-Modbus-Configurator_V0.2n

After starting *Si-Modbus-Configurator_V0.2n* the following screen appears:



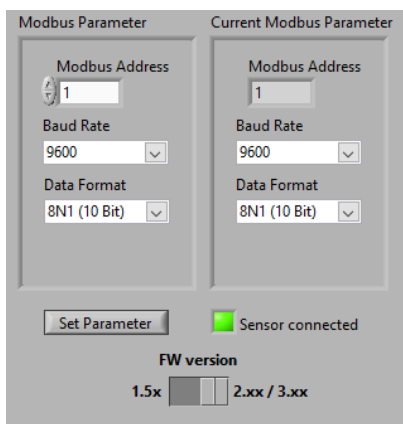
At first select the COM port the Si-RS485 sensor is connected to and press "Open Port". Once the port is successfully opened, the green LED "Port opened" lights on. If the LED stays off, make sure that the port exists and no other application is already connected to the selected port.



Please note:

Before setting any of the Modbus parameters, make sure you have selected the proper firmware version in the *Si-Modbus-Configurator_V0.2n*. The firmware version can be found on the sensor's label at the back side of your device.

If the firmware version of your sensor is 1.55 or lower, select 1.5x with the toggle switch. Otherwise switch to 2.xx/3.xx.



Solar Irradiance Sensor

Si-RS485TC-2T-v-MB
V2.02 MODBUS

IMT
TECHNOLOGY

Brown: RS485 - Data+ / A
Orange: RS485 - Data- / B
Red: 12...28 VDC
Black: 0 VDC

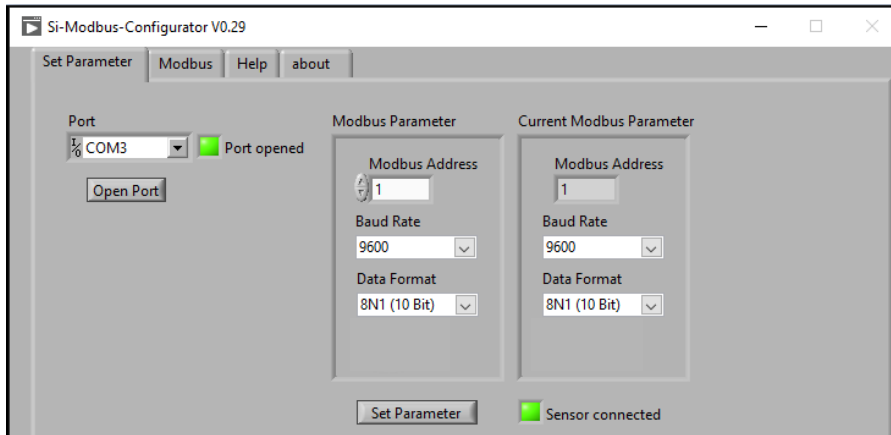


www.imt-technology.com Made in Germany

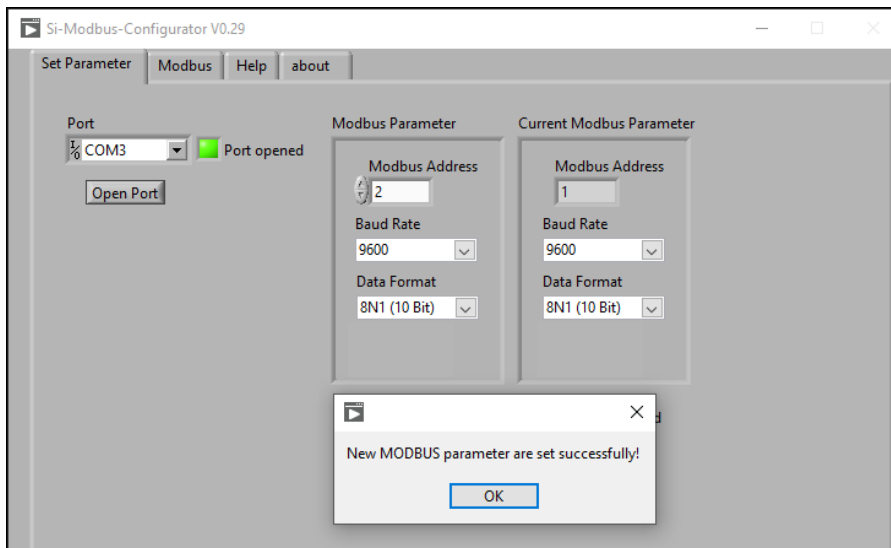


4 8 5 - 3 2 0 0 3 - 2 3 - 2 4 4 7 x x x x

The *Si-Modbus-Configurator_V0.2n* automatically attempts to connect to the Si-RS485. Therefore, the sensor must be in configuration mode. It remains in configuration mode for 4 seconds after power-on. To establish a connection, it may be necessary to restart the device by switching its power supply off and on again. If the connection is established, the green LED "Sensor connected" lights on and the current Modbus parameters are read from the sensor.



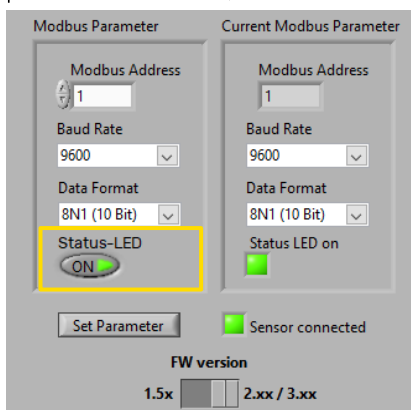
To change the Modbus parameters (Modbus address, baud rate and data format) select the required setting in "Modbus Parameters" and press "Set Parameters".



From FW 2.04 (only valid for irradiance sensors):

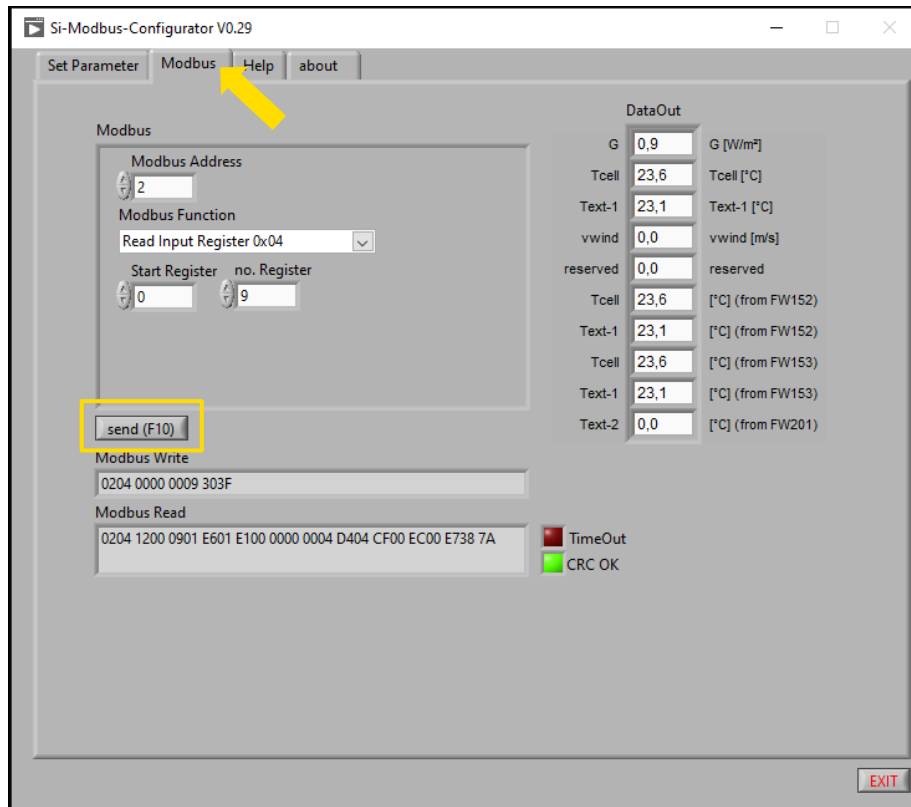
For irradiance sensors with firmware-version 2.04 and higher, a Status-LED enable button¹⁾ will appear under the Modbus parameters options. The status LED indicator shows if the LED is currently enabled or disabled.

This button allows to turn the sensor's internal LED on or off. The changes will take effect once the "Set Parameter" button is pressed. In this case, there is no need to manually power-cycle or reset the sensor.



1) LED Enable button only available from Si-Modbus-Configurator_V0.29 on

If needed, the sensor can be switched to Modbus communication by selecting the "Modbus" tab. The COM port is then reopened with the current bus parameters of the Modbus sensor, and the Modbus communication settings will be changed automatically.



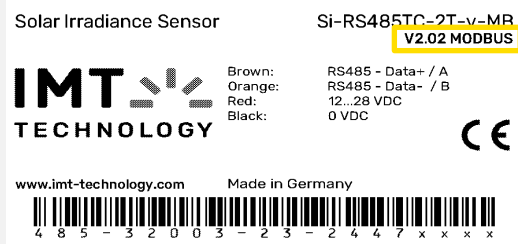
Select the required Modbus function and press "send". *Si-Modbus-Configurator_V0.2n* sends the Modbus command to the sensor and reads the response.

By selecting the "Set Parameter" tab, *Si-Modbus-Configurator_V0.2n* changes back to configuration mode.

Trouble Shooting

In case a connection to the sensor cannot be established, please verify:

- Is the sensor connected to a power supply (10...28 Vdc)?
- Is the sensor properly connected to RS485 port or RS485 converter (data+ and data- not swapped)?
- Are the hardware drivers of your RS485 converter installed correctly? The RS485 port must appear as a COM port at your operating system.
- Did you select the correct COM port?
- Is your Si-RS485 sensor delivered with Modbus protocol (see sensor label)?



- Is the sensor set to configuration mode (switch OFF and ON again while the software is waiting for connection)?

Intelligent Measurement & Testing