Background

This technical bulletin provides instructions for resetting IMT RS485/Modbus devices. RS485/Modbus devices may stop communicating after a power surge, such as one generated by a proximity lightning strike. While a direct lightning strike will often physically damage components, necessitating device replacement, a proximity lightning strike will generally not generate a power surge sufficient to damage the components of the device.

However, proximity lightning strikes may cause RS485/Modbus devices to no longer communicate. In such cases a simple reset should return the RS485/Modbus communication system to normal operation. This procedure involves temporarily removing DC power to the device, causing the communication circuit to reset, allowing the device to resume communication over the RS485/Modbus link.

Sensor Reset Procedure

1. Remove DC power to the affected sensor and associated datalogger or monitoring system for approximately 1 minute.
2. Reapply DC power to the affected sensor and monitoring system.
3. The above procedure will correct more than 50% of all RS485 Modbus sensor communication errors and return the system to full operational status. If so, you can stop here, otherwise continue.
4. Physically inspect the sensor and associated cabling for issues and correct any found.
5. Download the Si-Modbus-Configurator software, which can be found at: https://www.imt-solar.com/downloads/software/
   Note: This will require a USB to RS485 converter and a computer (download and install the drivers for your converter as well).
6. Once the Si-Modbus-Configurator software is downloaded, use the Windows Device Manager to see which COM port has been assigned to the USB to RS485 converter.
7. Open the Si-Modbus-Configurator.
8. Select the correct port from the drop-down menu. Then, press the "Open Port" button.
9. Wait for the "Port Opened" light to turn green.
10. Use the "FW version" switch to select the correct firmware version for the sensor (shown on the white sticker displayed on the sensor).
11. Connect the IMT sensor to the USB to RS485 converter and power it on. Only 1 device should be connected to the RS485 converter at a time.
    Note: You may be required to set the Modbus parameters to your monitoring system requirements (the default setting is Address 1, Baud Rate 9600, Data Format 8N1).

At this point, if the sensor communicates and you are able to set the correct Modbus parameters, the sensor should be functioning properly.

Support

For additional information please contact IMT Solar at (716) 276-8466, info@imtsolar.com, or visit us at www.imtsolar.com.