

IMT Solar

Service Bulletin

Bulletin No: SB-0001-19-174-IMT Effective Date: 06-23-2019 Type: Instructional

Subject: IMT RS485/Modbus irradiance and temperature sensor DC power reset procedure.

Scope

This service bulletin provides instructions for resetting the IMT RS485/Modbus irradiance and temperature sensor after a power surge.

Background

IMT RS485/Modbus irradiance and temperature sensors may stop communicating after a power surge, such as one generated by a close proximity lightning strike. IMT sensors with the part number XX-RS485-XXX are the most susceptible to power surges. IMT analog signal sensors are generally less effected by power surges.

Due to the cost associated with installation of a complex lightning protection system, users often choose not to install lightning protection devices. While this approach leaves the sensors vulnerable to power surges, it is typically not an issue in all but the most lightning prone areas. A direct lightning strike and subsequent power surge may damage sensor components, requiring the removal of the sensor from active use for repair or replacement. A close proximity lightning strike will generally not generate a power surge sufficient to damage the components or sensor. A close-proximity strike may however, cause the RS485/Modbus sensor 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 sensor, causing the communication circuit to reset, allowing the sensor to resume communication over the RS485/Modbus link.

Sensor reset procedure

1. Remove DC power to the affected sensor for approximately 1 minute.
2. Reapply DC power to the affected sensor.

Note: The above procedure will correct more than 50% of all RS485/Modbus sensor communication errors and return the system to full operational status. If communication is not restored, a physical inspection of the sensor will be required.

Sensor protection – zeroDT

A low-cost option to protect the system from overvoltage surge events caused by close proximity lightning strikes is installation of a **ZeroDT** lightning protection device. Contact IMT Solar for more information.

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