
Solar Radiation and Sunshine Hours Sensor (SR2-9) Operation Manual

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1. Resetting the Zero Point

Under a black cover the sensor should read zero. Does it read correctly in full sun? It is summer in China at present and I would expect a reading of 800 to 1000 watts/square metre at a cloudless midday. If it reads correctly in full sun but still reads 70 watts/square metre under a black cover, the zero point can be reset through the set-up menu. Access the set-up menu of the SR2-9 via the logger main menu by pressing **4**, then **8**, then the address of the SR2-9. Select item **6** of the SR2-9 set-up menu “to auto zero” and then, with the black cover in place, ensure no light enters the SR2-9, and press **1** to auto zero the SR2-9. The sensor will now read zero. It will be necessary to relog the sensor into the logger. This can be done from the main logger menu by pressing **1** for a list of sensors, then pressing ***** to re-log all sensors. This resets all the sensors to their default schedules. An alternative method of re-logging the SR2-9 only and therefore not disturbing the schedules of other sensors, is to disconnect the SR2-9 sensor from the bus and search for new sensors (press **1**, then **1** from the main menu). The logger will delete the SR2-9 from its list of sensors. Then reconnect the SR2-9 and search for new sensors again. The SR2-9 will be added to the list and its new zero offset will be known to the logger.

2. Resetting the Sunshine Threshold

The threshold beyond which the sunshine hours advances is set by threshold A “on” level. This is set in the factory to 200 watts/square metre. In other words, if the solar radiation is above 200 watts/square metre, the sun is considered to be shining and below 200 it is not. There is not an official international standard for this, but 200 seems to be the most commonly used value. In any case the value can be changed by the user to suit local conditions. To change the threshold, access the SR2-9 set-up menu via the logger main menu by pressing **4**, then **8**, then the address of the SR2-9. Select item **1** “to change threshold A”. Press **1** to change threshold A “on” level. The sensor will display the existing value (should be 200) and invite a new value to be entered. Enter the new value and press **1** to confirm. Then press **2** to change threshold A “off” level. This sets the value at which the sunshine hours clock stops advancing. It may be set to the same value as the “on” level, but is usually set to 1 watt below the “on” value. The “off” value is set at the factory to 199 watts/square metre. For example, if the new threshold required is 150 watts/square metre, set the “on” level to 150, and the “off” level to 149.

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