Remote Sensor Manual

User Guide

Revision A.0

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Remote Sensor User Manual

Thank you for purchasing an ABM cellular enabled remote sensor unit. Your sensor will automatically connect to the Sensor Access system updating the system with measurements and downloading any new configuration changes you may have added.

This guide will help you understand the operation of your remote sensor unit.

Connecting Power

Your sensor is designed for low power operations. The sensor requires an input voltage between 6 and 30 volts DC. Connect your power supply directly to the sensor power terminals as illustrated in Figure 1. **Do not** add any resistors between the sensor and the power supply. Your remote sensor is fully digital and does not provide any loop current signaling.

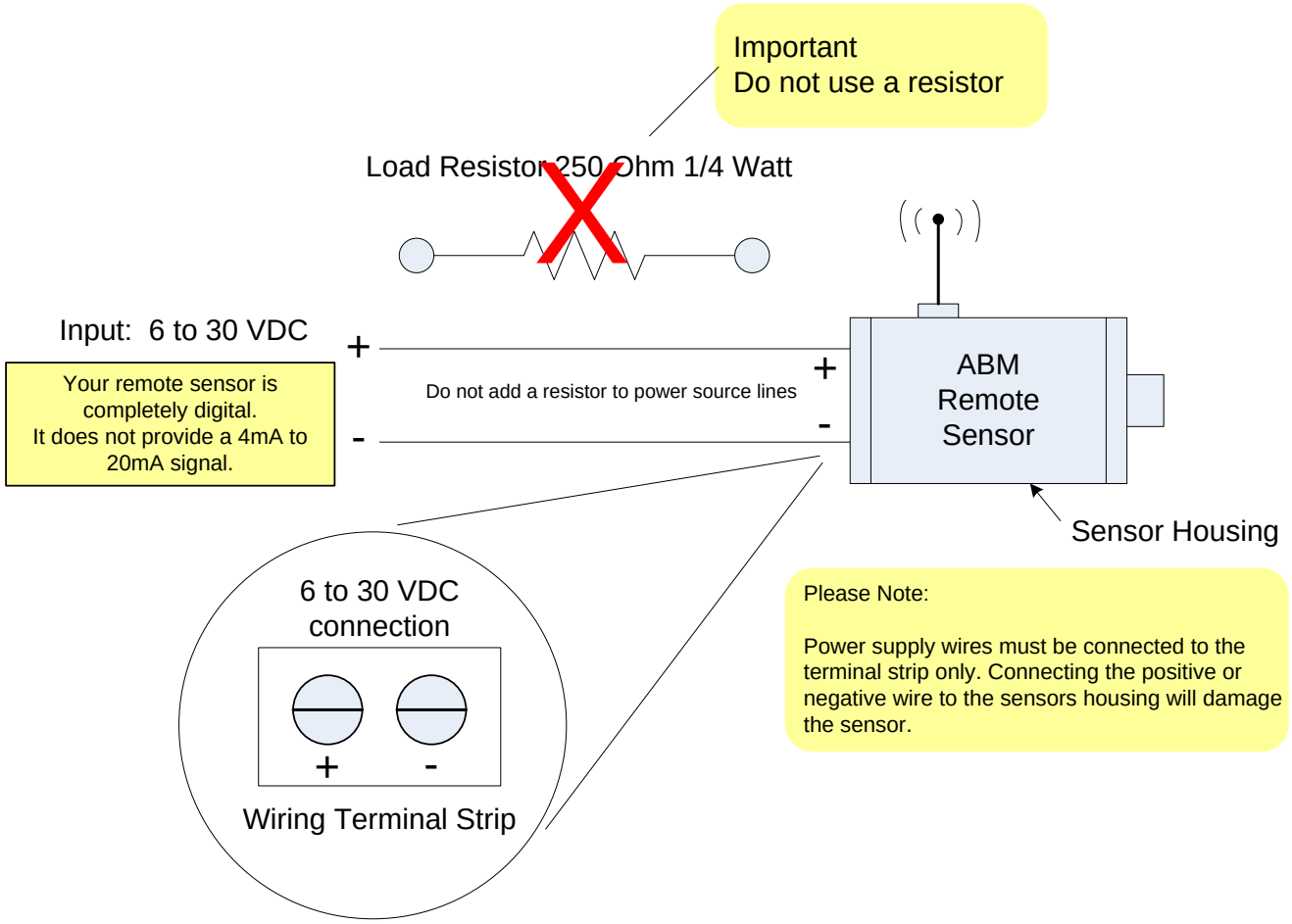

Figure 1 Connect your power supply directly to the sensor. Do not use any resistors.

Basic Sensor Operation

Your remote sensor is designed to operate from a battery for long period of time. To achieve this goal the sensor spends most of its time in a deep sleep low power mode. Figure 2 shows the basic operation of the sensor from power on to deep sleep mode. To save power the sensor LED will blink green for 1.5 seconds when the sensor is initially powered on. You will notice that the sensor "wakes up" after a number of minutes, takes a measurement, sends that measurement to the server and then returns to sleep. This cycle is continuously repeated unless you add data logging (see data logging).

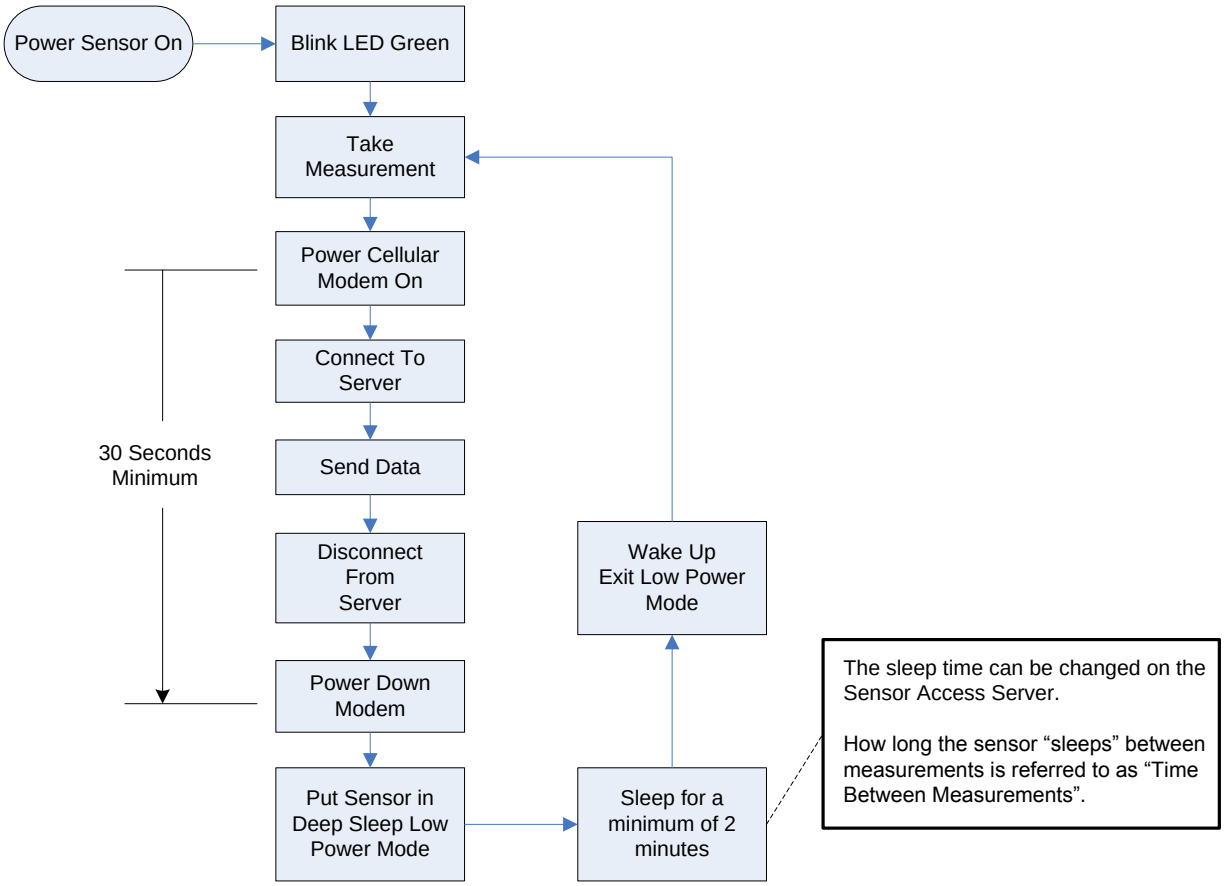

Figure 2 Basic sensor operation.

Basic Sensor Operation with Data Logging

Your sensor has been designed to operate for long periods off of a battery. The largest power consumption occurs when the cellular modem is powered on and communicating with the Sensor Server. Using data logging combined with the "Time Between Measurements" setting (sleep time) you can control how often the cellular modem connects to the Sensor Server. Your sensor can be configured to log up to 300 measurements before powering on the cellular modem and connecting to the Sensor Server. This will extend the battery life while still providing frequent measurements.

When data logging is enabled the basic sensors operation changes. Each time the sensor wakes up it takes a measurement and logs the data to memory. It must then determine if it should go back to sleep or power up the cellular modem and connect to the server. This is illustrated in Figure 3.

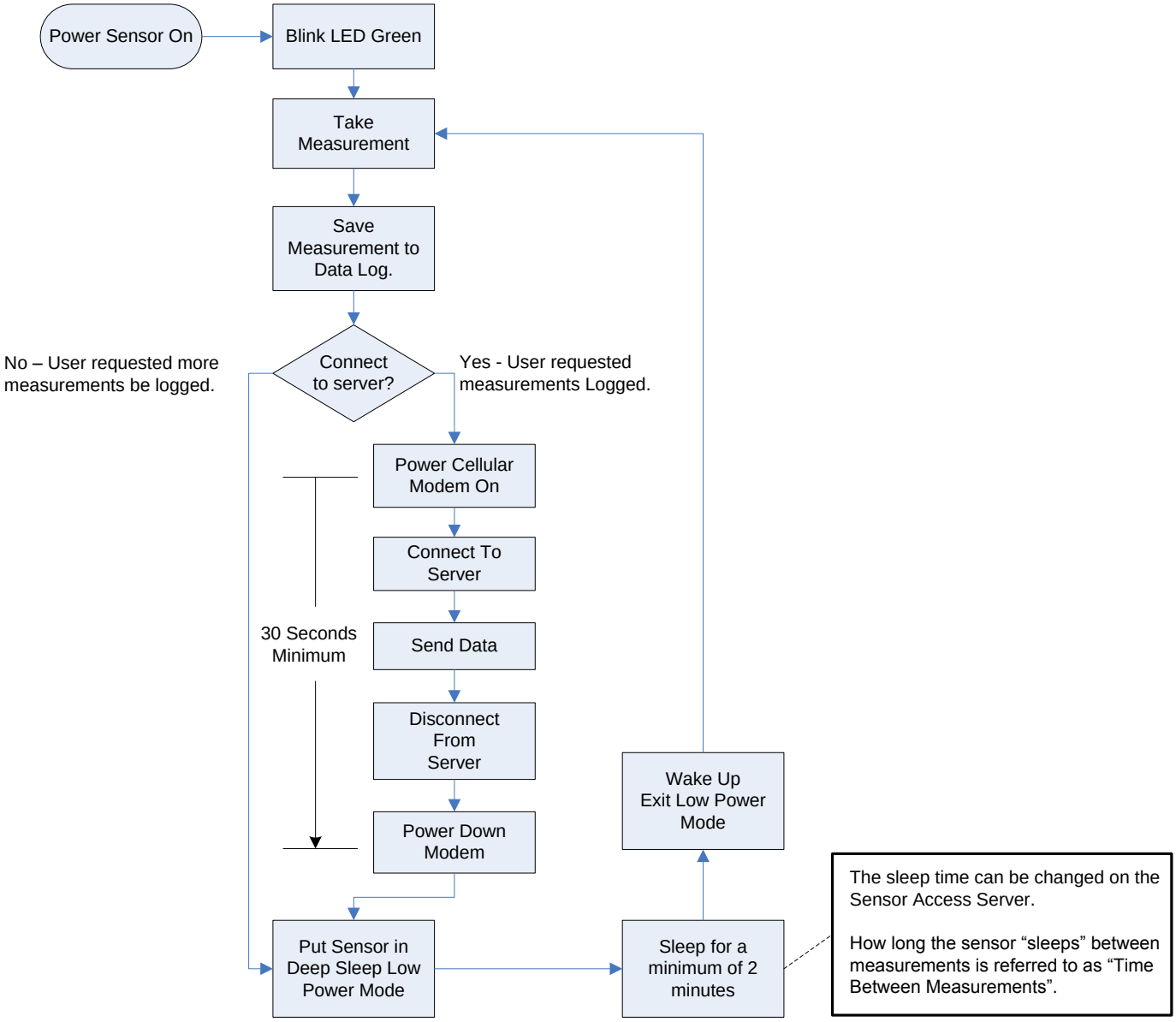

Figure 3 Basic sensor operation with data logging enabled.

Sensor Calibration Button

Your sensor is equipped with a calibration button that can be used to calibrate the sensor's range. For remote locations the button should be disabled to prevent tampering. To access the calibration button on the sensor remove the sensors lid by unscrewing it.

To make calibration changes to the sensor using the button, power must be supplied to the sensor and the button must be pressed for time specified in Table 1. Press the button until the LED turns the desired color and then release the button.

Table 1 Calibration Button

Button Timing of the Remote Ultrasonic Sensor.		
Seconds Pressed	LED Color	Description
< 2	Off	If the button is pressed for less than 2 seconds it is ignored and no action is taken.
> 2	Green	Take a measurement and connect to the server now.
> 7	Yellow	Program the full tank distance equal to the current distance.
> 12	Red	Program the empty tank distance equal to the current distance.
> 17	Off	Button pressed for greater than 17 seconds is ignored and no action is taken

Where: < means less than and > means greater than.

Sensor Access Website Login

The measurements from your remote sensor are automatically sent and stored on the Sensor Server. To view these measurements or change your sensor's settings you need to create and account and login to the Sensor Access Website. The Sensor Access Website login screen is shown in Figure 4.

For additional information on how to use the Sensor Access Website download the Sensor Access User Guide (see link at the bottom of the login page) or refer to the online documentation included on each web page.

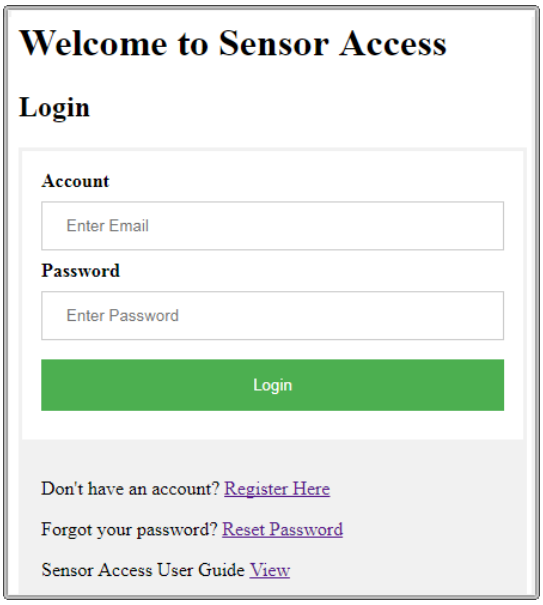

Figure 4 The Sensor Access login page provides access to the Sensor Access system.

To access the Sensor Access Website click here.