



AquaMon[®] 900 MHz Remote Sensor Nodes



AquaMon Introduction:

AquaMon is a tool for modern farming. It automatically collects data from local and remote sensors and uploads the sensor data to the web server. Once the data is resident on the web server, RSVP (Remote Sensor Viewing Platform) displays it in the format chosen by the grower. The system also works in reverse; the grower's web server inputs controlling field operations.

AquaMon offers the grower the flexibility to monitor parameters important to his crop and remotely control operations critical to his farm. Available sensors allow monitoring soil conditions, climate, and equipment status. The AquaMon RSVP web server issues alarms when sensors reach a preset limit or can avert harm by activating preset controls within the sensor network.

AquaMon Advantages:

- 24/7 access from any Internet enabled smart phone, tablet, or laptop
- Grower controls access to his data
- Grower selects the format of the data display
- Grower controls remote functions, alarm conditions and event notifications
- Grower retains ownership of the data at all times
- Accepts multiple sensor types including 2.5 volt analog, SDI-12, and 4-20 milliamp current loop
- Improved yields with precision irrigation, reduced power costs with smart pump control, and crop damage preventions with selected alarms.

AquaMon Remote Sensor Nodes

AquaMon remote sensor nodes extend the reach of AquaMon. Remote sensor node can connect to multiple sensors monitoring soil conditions, weather changes, and equipment parameters. Control outputs from the remote sensor nodes permit the remote activation of equipment.

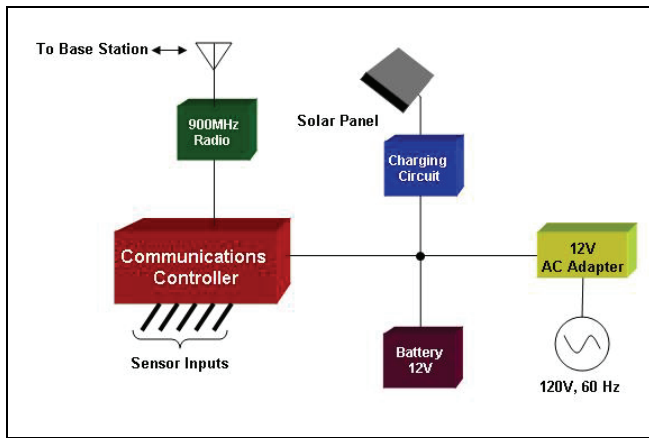
Remote sensor nodes connect to the AquaMon base station over a 900 MHz wireless network. Sensor data is sent to the base station over this network at the request of the base station. The 900 MHz network permits communications up to two miles from the base station. If the site requires communications over greater distances or terrain limits the range, repeater nodes may be installed to extend the range of the AquaMon wireless remote sensor network.

For maximum versatility AquaMon remote sensor nodes can handle a variety of sensor types. SDI-12, 4-20 milliamp, and 2.5 volt analog sensors can all be connected to the remote sensor nodes.

The remote sensor nodes also provide digital outputs which can activate or deactivate connected equipment such as pumps, valves, and lights. These control lines permit the grower to remotely control systems in the field from the secure web server. These control lines can be activated automatically when preset conditions are reached or the grower can manually activate/deactivate the systems.

Cermetek Microelectronics, Inc. • 374 Turquoise Street, Milpitas, CA 95035

Web: <http://www.cermetek.com> • Phone: 408-942-2200 • Fax: 408-942-1346 • Email: sales@cermetek.com



Remote Sensor Node Options:

AquaMon remote sensor nodes vary with the number of sensors required and power source. Remote sensor nodes can be supplied with one or two sensor boards. Each sensor board permits the connection of up to six sensors. When AC power is available, the remote sensor node can be powered through a 12 volt adapter plugged into a standard 120 Volt AC outlet. A battery backup is available to allow base station operation to continue during the loss of AC Power. Where AC Power is not readily available, the remote sensor node can utilize battery power as the primary power source. In this configuration a solar panel is available to maintain the battery charge.

Remote sensor nodes must be mounted within the range of the base station's 900 MHz radio. If line of sight can be maintained with the base station, the remote sensor node can be installed up to 2 miles away. If there are obstacles in the signal path such as hills; buildings or thick foliage, repeater nodes may be required to complete the communications link between the remote sensor node and the base station

Remote Sensor Node Specifications:

Enclosure:

Description: Sealed NEMA enclosure

Dimensions: 11" x 7.75" x 5.5"

900 MHz Radio:

Frequencies: 902 to 928 MHz

Maximum Output power: 300mW

Range (line of sight): 2 Miles

Mesh Networking: Yes

Node Addresses: 65,000 distinct addresses

FCC ID: B46-CH4390

Sensors:

0 to 2.5 Volt Analog

SDI-12

4-20 Milliamp Current Loop

10-bit Analog to Digital Conversion

Power

AC: 120V, 60Hz

Battery: 12 Volt, 7 Amp-hour, Lead Acid

Solar Panel: Maximum Output 12 Watts

Battery Life: 2500 transmissions without recharge

Remote Sensor Node Models

CHA49001AXX	900 MHz Remote Sensor Node; AC Powered, 1 Sensor Board
CHA49001ABX	900 MHz Remote Sensor Node; AC Powered, Battery Backup, 1 Sensor Board
CHA49001XBX	900 MHz Remote Sensor Node; Battery Powered, 1 Sensor Board
CHA49001XBS	900 MHz Remote Sensor Node; Battery Powered, Solar Charger, 1 Sensor Board
CHA49002AXX	900 MHz Remote Sensor Node; AC Powered, 2 Sensor Boards
CHA49002ABX	900 MHz Remote Sensor Node; AC Powered, Battery Backup, 2 Sensor Boards
CHA49002XBX	900 MHz Remote Sensor Node; Battery Powered, 2 Sensor Boards
CHA49001XBS	900 MHz Remote Sensor Node; Battery Powered, Solar Charger, 2 Sensor Boards

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