Phytech New Generation Hub Optimized Irrigation Management User Manual

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Phytech New Generation Hub Optimized Irrigation Management

General description

Phytech hub is part of an advanced AG IoT platform for optimized Irrigation management. Firstly, the device receives Phytech Plant sensor measurements. Then, the hub organizes the data and then sends it to a Phytech datalogger. Finally, the data is sent to the Phytech cloud for analysis and processing. The outcome is a simple color scheme that aids the grower to decide online when and how much to irrigate.

Installation and operation

Hub Installation

2.1.1 Up to 20 hubs can connect to a single logger.
2.1.2 The maximum distance between the hub and the logger is
300 meters.
2.1.3 After the logger is set up, set the hub near the middle tree of the
project in between the trees in the row.
2.1.4 Mound the hub on a tree or in soil (Figure B).
2.1.5 Turn the hub switch ON and take a few steps back. The led sequence should be as follows:

- Fast blinking LED – acquiring logger.
- Stable LED – connected to the logger.
- Slow blinking LED – hub is in sensor acquiring mode. For the next 1 hour, sensors can be connected to the hub.

Sensor installation

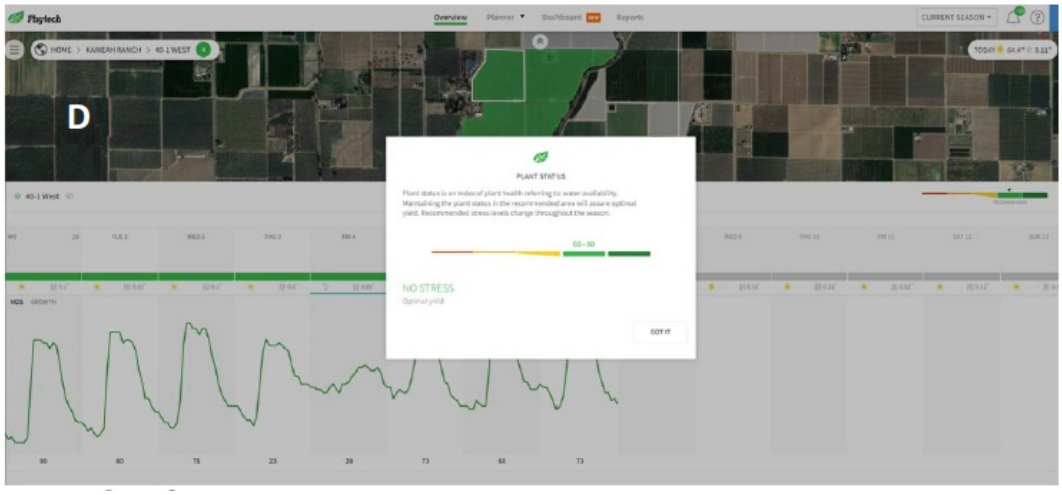
2.2.1 Up to 40 sensors can connect to a single Hub. The maximum distance between the sensors and the Hub is 80 m.
2.2.2 Sensor must be installed after the hub was successfully installed and while in sensor acquiring mode.
2.2.3 Install the sensor:

- Dendrometer (Figure C1) - Push the calibration spacer device to set the right distance between the dendrometer piston tip and the tree trunk. Once the tip has been pushed the sensor LED will start blinking, searching for a hub. Wait for the blinking to stop and the LED to become steady, an indication that the sensor has connected to the hub and the installation is successful.
- Fruit sensor (Figure C2) - open the sensor's "claws" and place them on the desired fruit. The LED on the sensor

will immediately start blinking when opening the fruit sensor. Wait for the blinking to stop and the LED to become steady, an indication that the sensor has connected to the hub and the installation is successful.

Received data

The data received from the sensors reaches the server where it is analyzed. The analyzed data provides users with plant status and irrigation recommendations via web and mobile apps (Figure D).



Product features

Hub

- 40 sensors per hub.
- Easy installation.

Sensor

- Easy mount.
- High-resolution trunk/fruit measurements.
- Event-triggered radio transmission.

Interfaces

Hub

- ON/OFF switch.
- 1 indication LED.

Sensor

- Indication LED.
- UHF 433.9 MHz.
- FM modulation.
- 2.4 kbps.
- Custom antenna (logger, hub, and sensors)

Radio

This device complies with FCC Rules Part 15. Operation is subject to two conditions: (1) This device may not cause harmful interference, and (2) this device must accept any interference that may be received or that may cause undesired operation.
NOTE: This equipment has been tested and found to comply with the limits for a Class B digital device, pursuant to part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference in a residential installation. This equipment generates, uses and can radiate radio frequency energy and, if not installed and used in accordance with the instructions, may cause harmful interference to radio communications. However, there is no guarantee that interference will not occur in a particular installation. If this equipment does cause harmful interference to radio or television reception, which can be determined by turning the equipment off and on, the user is encouraged to try to correct the interference by one or more of the following measures:

- Reorient or relocate the receiving antenna.
- Increase the separation between the equipment and receiver.
- Connect the equipment into an outlet on a circuit different from that to which the receiver is connected.
- Consult the dealer or an experienced radio/TV technician for help.

Changes or modifications to this equipment not expressly approved by the party responsible for compliance (Phytech Ltd.) could void the user's authority to operate the equipment.
Professional installation is required due to the intended application of the system is exclusively for commercial/industry use.
WARNING:
It is the responsibility of the installer to ensure that when using the outdoor antenna kits in the United States (or where FCC rules apply), only those antennas certified with the product are used. The use of any antenna other than those certified with the product is expressly forbidden in accordance with FCC rules CFR47 part 15.204."

Electrical

Hub

- input voltage: 2.7-3.2 Volts (2X type C alkaline battery).

Sensor

- input voltage: 2.7-3.2 Volts (2X AAA alkaline battery).

Documents / Resources

	Phytech New Generation Hub Optimized Irrigation Management [pdf] User Manual 400, 2ALN6400, New Generation Hub Optimized Irrigation Management

Manuals+,