Minder™

Advanced Online Monitoring

Description

An advanced monitor designed with ease of use and grower demands in mind. The Minder™ easily and simply monitors various nutrient and media levels and records this data for use by the grower either at the unit and/or direct to PC.

What the grower often doesn't know, or has to use tedious methods to define are the all-important root zone conditions, the Minder™ is the answer!

Users can view such variables is volume of runoff up to the minute

Changes in all settings can be affected from control unit

Users can scroll through settings and view current status of the nutrient

Robust Splash resistant case with liquid crystal digital display of all readings and settings

New Key Features for Minder 2008

- Up to 48 Alarms settings for all variable measured
- Individual instant graphs for all variables measured with comparison to previous day
- Single 'click; connection patch cable to sensor box
- Option for aspirated temperature, solar and relative humidity plus C02 sensing
- Irrigation pH and EC monitoring
- Enhanced power system to connect multiple Minders with one power supply
- Optional input for pulse type meters
- Advanced monthly summary report showing all variables measured with Daily totals
- And far more…...

Remote Monitoring & Alarms

The Minder™ has inbuilt alarms that provide an audible sound on the control unit. In addition when connected to a PC the system will dial out via the computers modem and advise the growers

Applications

Any situation where runoff, environment and/or media conditions need to be monitored

Minder™ Monitors

Runoff pH
EC/CF
Temperature
Irrigation Volume and timing , pH
EC/CF
Runoff volume & Timing
Moisture Content of media
Pulse irrigation and runoff input

Optional Features

1-25 Additional Temperature Sensors

CO2 monitoring

Relative Humidity

Temperature aspirated

Solar Radiation

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Technical Specifications	
Sensors	
EC	Media Temperature
pH	Relative Moisture Content
Runoff Volume	Run off Time
Irrigation time	Irrigation volume
Relative Humidity*	Temperature*
Solar Radiation	*C02
*optional	
PC Communication	PC Can be up to 1.2km from unit. Requires data cable. Preferably Cat 5E Stranded 4 pair twisted
System Reports	*Exports CSV files by date range.*
Alarms	Contact closure and Audible on unit. Sound card activation on PC and Dial out via modem if activated
Electrical	Power 115/230v AC, 50/60Hz, 50Va
Physical	Weight 1.5kg

Specifications
These monitors can be used on-line to a PC or off-line for data logging

On-Line
The monitors may be grouped into different systems. Usually a group will represent one greenhouse so that viewing is organized in a logical way.
Alarms may be set for each monitor and even for each measured variable. Data is logged to the hard disk of the computer for later graphical display.

Off-line
Whenever a PC is not connected the monitors continue in off-line mode. In this mode they record data every 5 minutes to an internal memory. They may then be carried to a PC and as soon as they switched on and connected to the computer, the data will be uploaded for logging to disk and display. The maximum data storage is limited to 10 days.

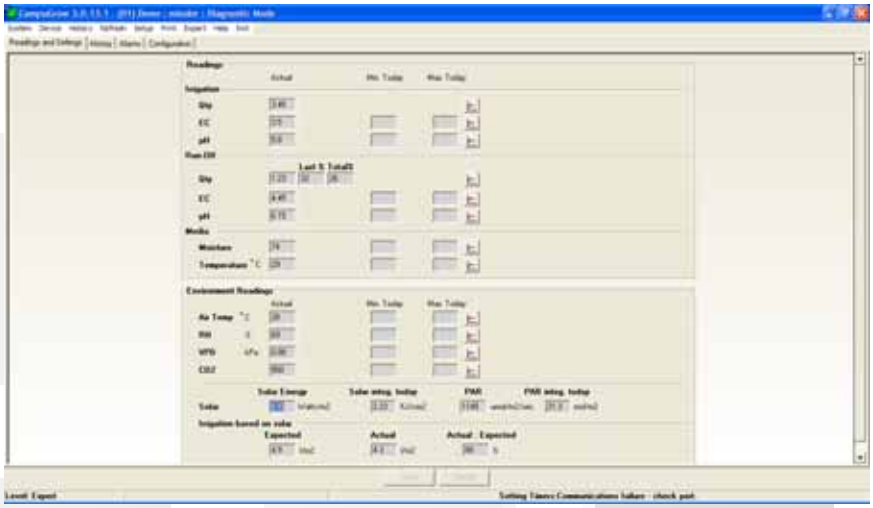
EC, pH
Display EC and pH to two decimal points resolution accuracy of EC and pH will depend on calibration. If used in an electrically quiet area and properly calibrated at a temperature within 10 deg C of application temperature, accuracy will be better than +/- 0.2 error

EC,pH, Irrigation & Run-off quantity
EC and pH are same as above. Irrigation & Run-off quantity is measured by counting pulses from a flow meter. The run-off resolution is per pulse to suit the sensor.

Software & Settings

The software screenshot below shows the typical page that a grower would have displayed on their computer. This pages allows the user to:

- Adjust alarm thresholds
- View current system readings
- Compare today's data with yesterdays at a glance by variable



Software Graphs

Users can make a number of 'favorite' graphs to include monitored data from a variety of systems installed from environment (if installed) to runoff levels. All these variables can be displayed on one graph but users typically create a multitude displaying what they most want to see compared together e.g. moisture and temperature.
Users can adjust the range of data displayed from 5 minutes to 1 week. This allows the user to see trends in any aspect that is monitored.

Example: The grower views data from a week and notes a gradual trend upwards in the EC of the runoff. This probably indicates that the plants are receiving to infrequent fertigation. The grower can adjust fertigation frequency and in one week note if the EC is now trending towards their desired runoff.

Moisture Sensor
Uses frequency around probe area to calculate moisture percentage

3 Options are available:

⇒ 5cm for GrowBags coir or rockwool
⇒ 10cm for deep GrowBags or pots
⇒ 20cm for soil crops