Aeroponics User Guide

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Abbreviations:

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| The Main Control Terminal | MCT |
| The Bucket Control Station | BCS |
| Data Collection and Calibration Station | DCS |
| In Bucket Stand | IBS |

Connector Type

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| --- | --- |
| 5.5 mm Round Connector |  |
| JST-XH Connector |  |
| Dupont Connector |  |

Assembly Instruction before Connecting to Power

Normal Operations:

For normal operation, the BCS can operate 5 buckets.

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| Plug the connector of the mist maker for each bucket to the connection holes on the BCS. |  |
| Plug the JST-XH connector on the IBS to the corresponding BCS connector. This connector is for the fan. |  |
| Plug the Dupont Connector to the corresponding connector on the BCS as well. The Dupont connector is for the sensor. |  |

Using DCS for calibration and sensing:

Connect the fan and the mist maker as in normal mode. The DCS will act as the as the intermediate between the BCS and IBS.

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| Plug the connector of the mist maker for each bucket to the connection holes on the BCS. |  |
| Plug the JST-XH connector on the IBS to the corresponding BCS connector. This connector is for the fan. |  |
| Connect the IBS Dupont connectors to the ones on the DCS |  |
| connect the DCS connectors to the corresponding BCS connectors. |  |
| Connect the DCS to your computer with the micro USB wire |  |
| Turn the knob around until you see text on the screen. |  |
| You should see “Initializing “ with a series of jumping numbers. In the end the screen will show “calib value K” |  |
| K is your base value. Now turn on the mist maker with the BCS in on/off mode (See normal operation guide). Wait for about 20 mins for the mist in the bucket to reach |  |
| Read the reading displayed by the LCD screen “M” |  |
| The calibration value “C” is the absolute value of the difference between M and K. |  |
| Remove the DCS from the connection between the BCS and the IBS. Disconnect DCS from your computer. |  |

Turning on the System and Sending Command through the MCT

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| Plug the 9V DC power source to the 5.5 mm round connector on the MCT. IMPORTANT NOTE: Distinguish the 9V DC power and 24V DC power! They both use 5.5 mm round connector. DO NOT connect 24V power to the MCT! |  |
| The MCT LCD screen should be lit. Wait for about 30 seconds for the welcome screen to appear. |  |
| Connect the 24V DC power to the BCS through the 5.5 mm round connector to it. |  |
| Turn on the main manual switch on the BCS. The Calibration LED should lit up for a few seconds, which indicates normal operation of the BCS. |  |
| Turn on the manual fan switches on the BCS. |  |
| You can always press “D” to erase any input shown in the input section. |  |
| Set the station number: Set the station number by press “A” followed by the station number desired. Press “#” to set the station number in the command section. |  |
| Set the mode: Press “B” followed by the mode you desire. Mode 1 is the Time Control Mode, Mode 2 is the Percentage Mode, and Mode 3 is the on/off mode. Press “#” sign to set the mode in the command section |  |
| Mode Specific Parameter: Time Control Mode  The time parameter follows the format “cXXcYY” where XX is two digits on time and YY is two digits off time. For example, a 2 minutes on time and 3 minutes off time sequence is written as “c02c03”. Press the “#” sign to input the parameter in the command section. |  |
| Mode Specific Parameter: Percentage Mode  The percentage parameter follows the format “cXXX” where XXX is a three digits parameter ranging from 0-100. Note that as the percentage goes below 20%-30%, the mist level in the bucket will be unstable due to sensor inaccuracies. Press the “#” sign to input the parameter in the command section. |  |
| Mode Specific Parameter: On/Off Mode  Press “c” then “#” to switch between on and off |  |
| After inputting the command section, press “\*” to send the command. |  |
| The LED on the BCS will indicate if the mist maker is on. Note that the LED will only be on if the mist maker is on. |  |

To achieve the best data accuracy, calibrate the BCS before using percentage mode.