

TrolMaster



HAWKEYE
Climate Monitor & Logger

TrolMaster
www.trolmaster.com

GETTING STARTED

Thank you for purchasing the TrolMaster HAWKEYE Climate Monitor & Logger. This unit is a simple and affordable way to monitor your grow room. To ensure safety, please read this instruction manual carefully before installation and follow the instructions herein. It will provide detailed instructions and guidelines that will help to set up the unit, and to understand the full capability of this unit. Any use or application of this product, other than for its original intended purposes are prohibited. Store this manual in a secure place for future reference.

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OVERVIEW

The front panel of the unit consists of three main LED screens for the display of temperature, humidity and CO2 PPM status respectively. It is easy to monitor your grow room by setting the max/min setpoint of temperature, humidity and CO2 you desire. The built-in alarm will ring when the actual measured value exceeds the setting range. Also, it features a connection to your network by an optional IoT SPI to Ethernet Adapter, which can be purchased separately. Using the remote control app for your Android, iOS smartphone or tablet, you can monitor the environment of your grow room anytime and anywhere and have warnings sent to your phone if the growing environment exceeds your max/min setpoint. The three-in-one remote SA-S81 Sensor with 16 feet long cable is placed in grow room to sense the growing environment while the HAWKEYE Monitor can be positioned outside for easy reading and monitoring. An optional 33-feet long extension cable for your SA-S81 Sensor can be purchased separately for larger room.



Temperature
buttonHumidity
button

CO2 button



Search



Setting



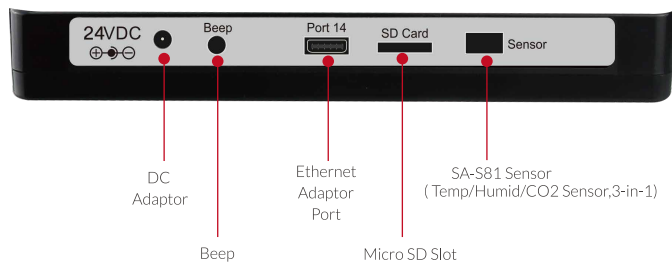
Up



Down



Enter

Alarm LED
IndicatorTiming LED
IndicatorNetwork Connection
LED Indicator

PRECAUTIONS

- Never exceed recommended amperage.
- Verify power source prior to connecting unit to power source.
- Make sure unit is securely mounted.
- Do not mount unit near heat generating sources.
- This unit shall not be exposed to dripping, splashing or spraying of liquids, protect unit from vapors, foggers etc.
- Clean unit with clean dry cloth, no oils or solvents.
- Protect any power cords from being walked on, pinched or crushed.
- Unit is designed for indoor use only.
- Unit is to be used within defined environmental parameters.
- Use caution when operating in high humidity environments.
- This unit contains no user-serviceable parts. Do not attempt servicing this product.
- Verify that all equipment connected to unit is of proper voltage.

COMPONENTS



1



2



3

- 1. Climate Monitor & Logger
- 2. SA-S81 Sensor
- 3. DC Adaptor











SPECIFICATIONS

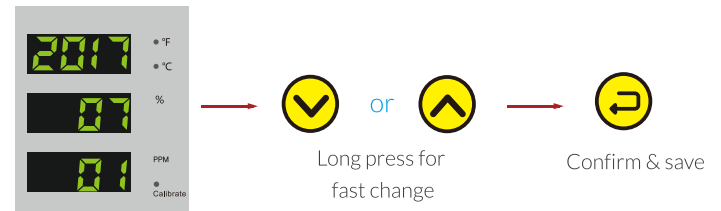
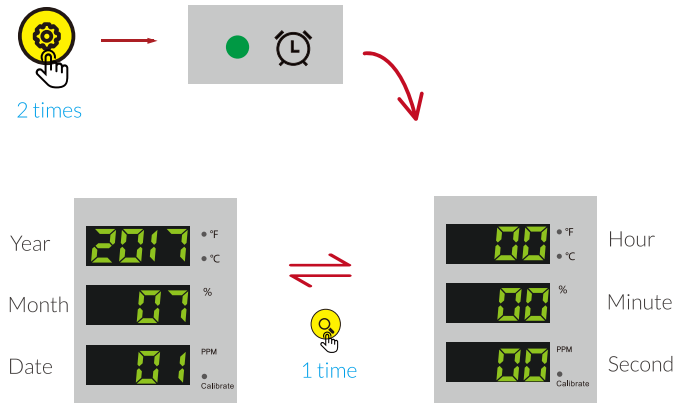
Input Voltage:	100~240 VAC, 50/60 HZ
Max Input Current:	0.6A
Max Output Voltage/Current:	24VDC / 0.5A
Temperature Range:	0-59.0°C
Temperature Accuracy:	±0.20°C
Humidity Range:	5-95% rH
Humidity Accuracy:	±7% rH
CO2 Range:	0-2000 PPM
CO2 Accuracy:	±30 PPM
Working Environment:	Temperature 0~50°C, Humidity ≤90%
Overall Size:	280*170*70mm

START SETTING








- Once you have connected **all** of the components to the unit, we can start using the HAWKEYE Climate Monitor.
- Connect the plug-in power supply to the power connector on the lower right-hand side. The HAWKEYE Climate Monitor will turn on and boot up.

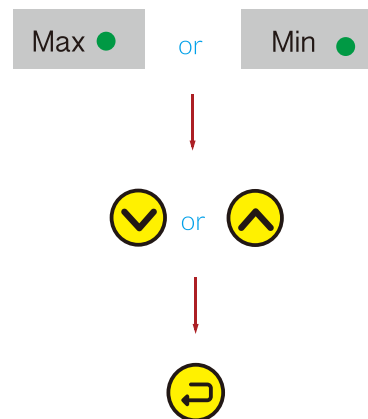
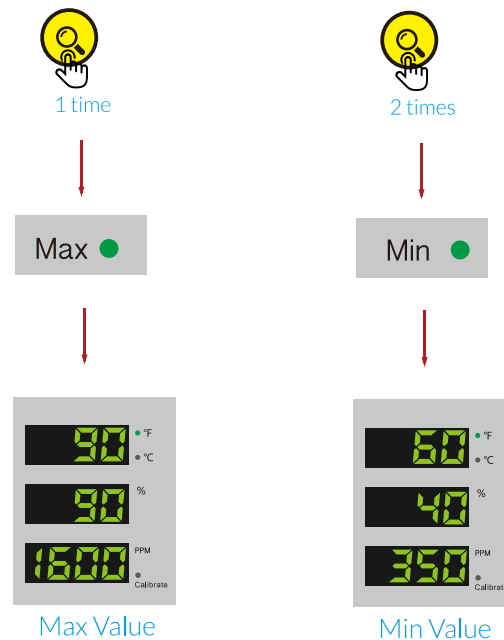
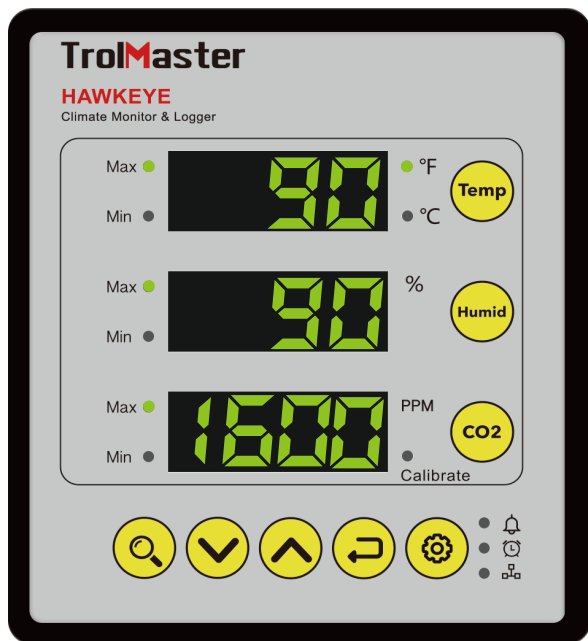
TIME SETTINGS

Press the **Setting** button  for two times, the Clock LED indicator  will blink and the Temperature LED displays 2017 (Year), Humidity LED displays 07 (Month) and the CO2 LED displays 01 (Date). Press the **Search** button  for one time to convert into Hour-Minute-Second state. The Temperature LED displays 00 (Hour), Humidity LED displays 00 (Minute) and the CO2 LED displays 00 (Second). Press the **Search** button  again and back to the Year-Month-Date state. Press **UP**  or **DOWN** , the YEAR  in the Temperature LED will be flashing. Press again **UP**  or **DOWN**  for year change. Long press for faster change. Finally, press **ENTER** button  for save. Then the MONTH digits in the Humid LED will be flashing. Press **UP** or **DOWN** to adjust the value. Press **ENTER** for save. Same method to adjust the Date and Time adjustment.

























READING MAX/MIN VALUE

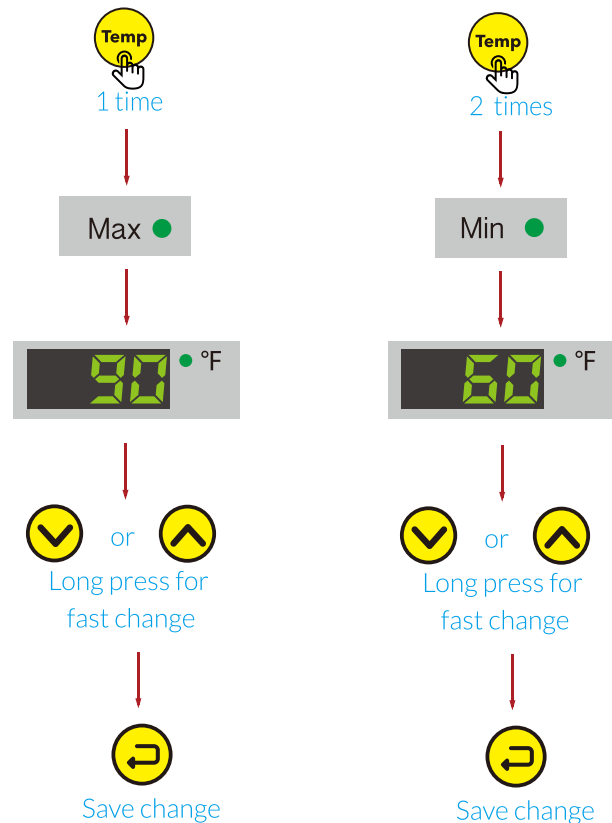
Press  for one time, all Max LED indicators **Max**  will be flashing. All LED screens will display the recorded maximum value. Press  for two times, all Min LED indicators **Min**  will be flashing. All LED screen will display the recorded minimum value. While in the Max or Min status, press **UP**  or **DOWN**  to enter the clear record function. All LED screens will be flashing, press **ENTER**  and hold 3 seconds to clear the records.












TEMP ALARM RANGE SETTINGS

Press the **Temp** button  for one time, the Max LED indicator **Max**  will blink. The LED displays the max value. Press **UP**  or **DOWN**  and the digits on the temperature screen will be flashing. Press again **UP**  or **DOWN**   for temperature change. Long press **UP**  or **DOWN**   for fast change. Press **Enter**  for save and the LED display shows the changed value.











Press the **Temp** button  for two times, the Min LED indicator **Min**  will blink. The LED displays the min value. Press **UP**  or **DOWN**  and the digits on the temperature screen will be flashing. Press again **UP**  or **DOWN**   for temperature change. Long press **UP**  or **DOWN**   button for fast change. Press **Enter**  for save and the LED display shows the changed value.



HUMIDITY ALARM RANGE SETTINGS










Press the **Humid** button  for one time, the Max LED indicator **Max**  will blink. The LED displays the max value. Press **UP**  or **DOWN**  and the digits on the humidity screen will be flashing. Press again **UP**  or **DOWN**   for humidity change. Long press **UP**  or **DOWN**  for fast change.










Press **Enter**  for save and the LED display shows the changed value.

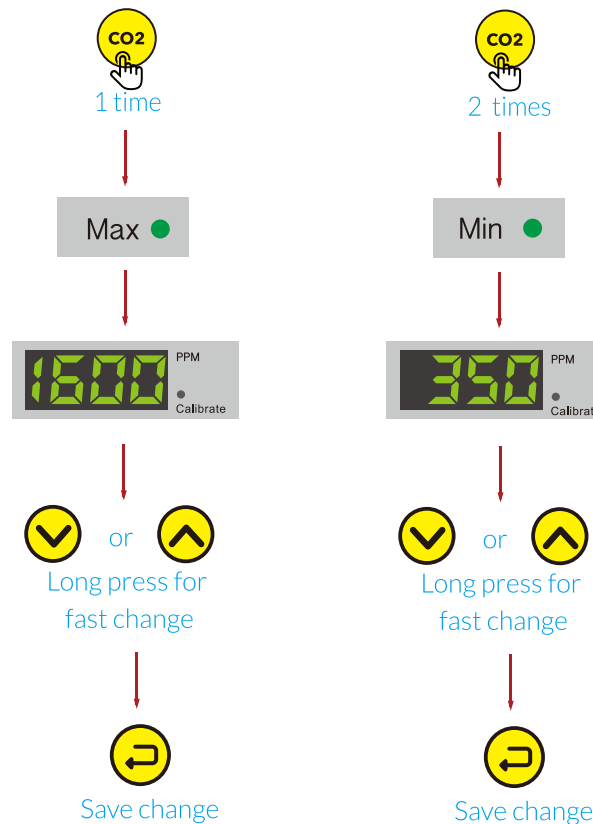
Press the **Humid** button  for two times, the Min LED indicator **Min**  will blink. The LED displays the min value. Press **UP**  or **DOWN**  and the digits on the humidity screen will be flashing. Press again **UP**  or **DOWN**   for humidity change. Long press **UP**  or **DOWN**  button for fast change. Press **Enter**  for save and the LED display shows the changed value.



CO2 ALARM RANGE SETTINGS









Press the **CO2** button  for one time, the Max LED indicator  will blink. The LED displays the max value. Press **UP**  or **DOWN**  and the digits on the CO2 screen will be flashing. Press again **UP**  or **DOWN**  for CO2 PPM change. Long press **UP**  or **DOWN**  for fast change. Press **Enter**  for save and the LED display shows the changed value.

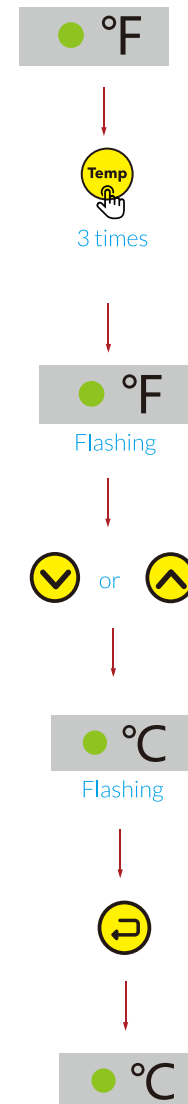
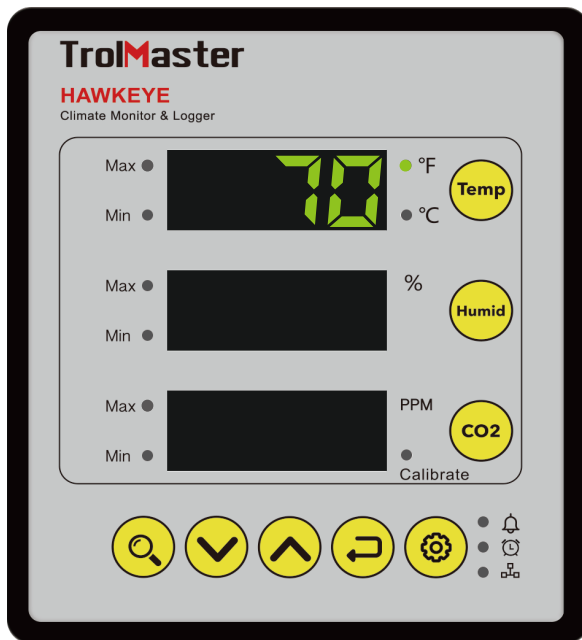
Press the **CO2** button  for two times, the Min LED indicator  will blink. The LED displays the min value. Press **UP**  or **DOWN**  and the digits on the CO2 screen will be flashing. Press again **UP**  or **DOWN**  for CO2 PPM change. Long press **UP**  or **DOWN**  button for fast change. Press **Enter**  for save and the LED display shows the changed value.








FAHRENHEIT & CELSIUS CONVERSION

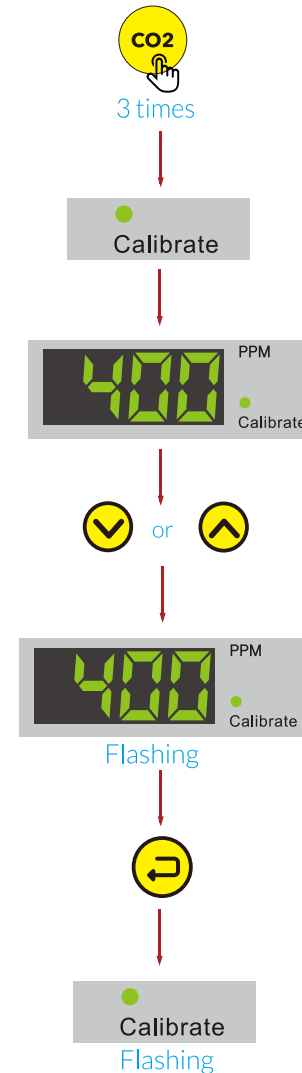
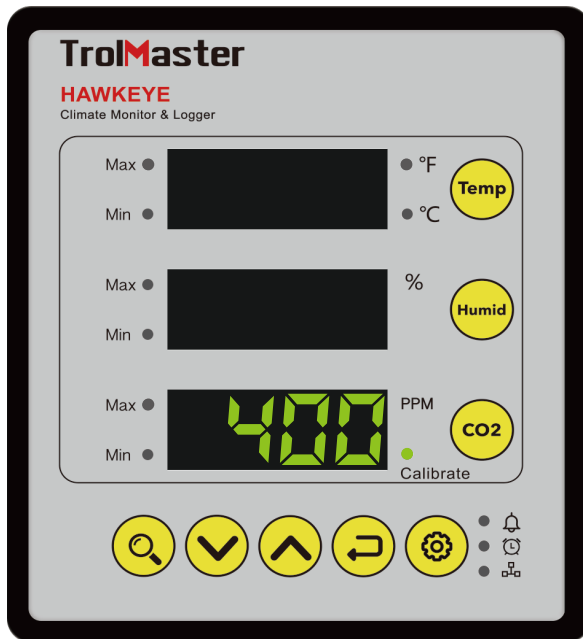
Fahrenheit & Celsius conversion

Factory default is based on Fahrenheit °F and the LED indicator  turns on. Press **Temp** button  for 3 times, the LED indicator  will be flashing, press **UP**  or **DOWN**  for Fahrenheit and Celsius conversion. The Celsius LED indicator  will be flashing, the temperature unit will be changed into Celsius  °C. Press **Enter**  button within 5 seconds for confirmation and save.













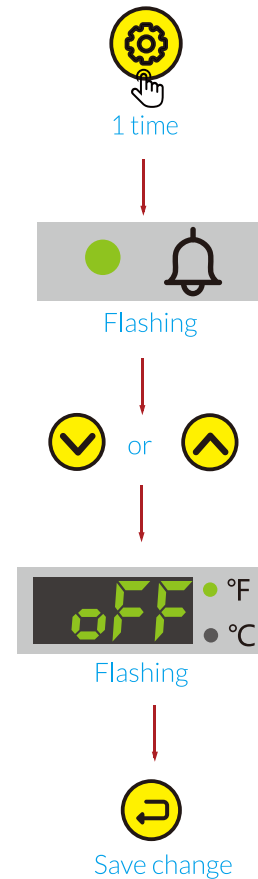
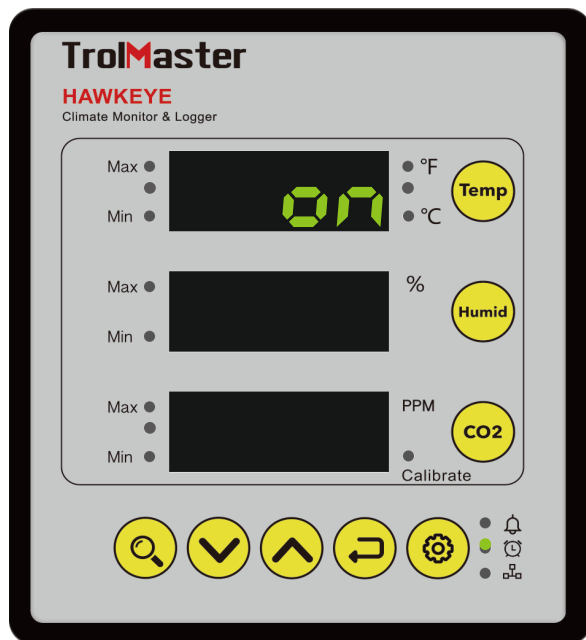
CO2 PPM CALIBRATION

Press CO2 button for three times, the Calibrate LED indicator  turns on and the LED will display 400. Press **UP**  or **DOWN** , the digits 400 will be flashing at the same time. Press **Up** or **Down** to adjust the calibration level if you have an accurate reference. Otherwise, the recommended level will be 400. Press **Enter**  button and the Calibrate LED indicator  will be flashing. The calibration process begins and it takes 90 seconds. The first 60 seconds for preheating and later 30 seconds for average. The LED will display the current value automatically after completion of the calibration process. During the calibration, place the sensor in an open area. Far away from people, animals and biogas etc.



ALARM SETTING

The factory default of the beeper is set to ON and the Alarm LED indicator  turns on. Press the **Setting** button  for one time, the Alarm LED indicator  will be flashing. The temperature LED displays ON while the humidity LED and CO2 LED will turn off. Press **UP**  or **DOWN** , the temperature LED displays ON and flashing . Press **UP**  or **DOWN**  the temperature LED displays OFF and flashing . Press Enter  button to confirm and save the change.

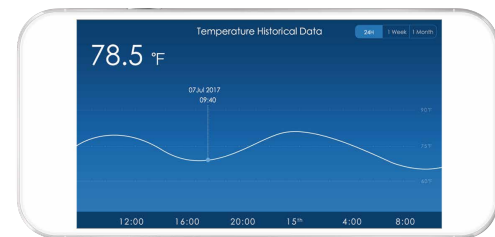
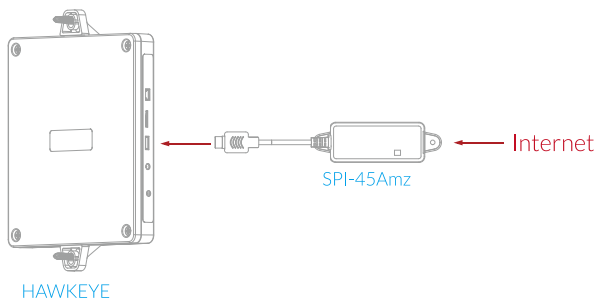


SMARTPHONE APP CONTROL

An **IoT SPI to Ethernet Adapter** can be purchased separately, with individual manual for each package. Connect the **IoT SPI to Ethernet Adapter** to this unit through the Extension Port 14. Download app to remotely monitor the temperature, humidity and CO2 levels and review all the historical data and chart.







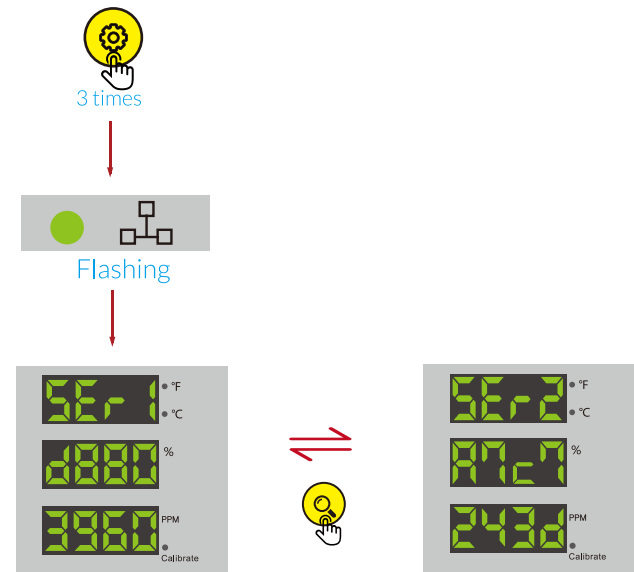
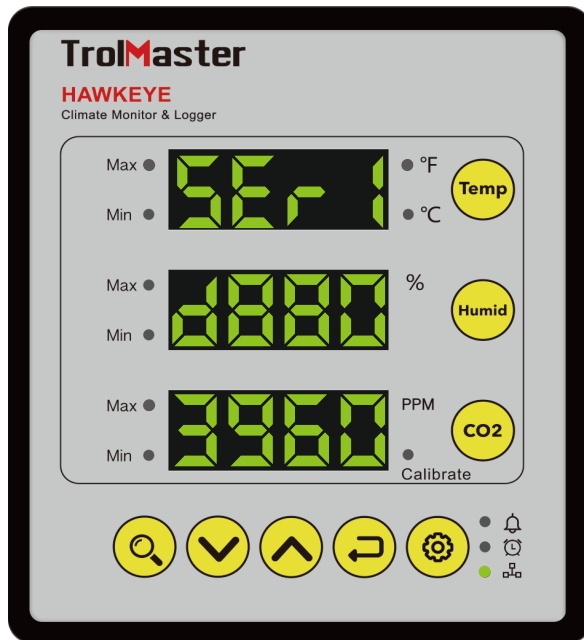
SPI-45Amz



APP

READING SERIAL NUMBER

In normal display state, press **Setting** button  for three times, the Network Connection LED indicator  will be flashing and the LED screen displays the former 8 digits of serial number (SEr1.....). Press Search button  to display the latter 8 digits of serial number (SEr2.....) accordingly. There are total 16 digits for the serial number, for example "D880 3960 A7C7 243D". The Network Connection LED indicator  will turn on when connected the unit with IoT SPI-45Amz Ethernet Adaptor or smartphone module.

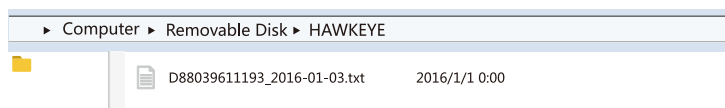


RESTORE FACTORY SETTING

To restore the factory setting, press and hold **Setting** button before plugging the HAWKEYE Monitor into wall outlet. After power-on, the LED screen shows "RESET SETTING" and all the LED indicators will be flashig together. Keep pressing **Setting** button for more than 5 seconds, all setting parameters will restore to factory default setting except for temperature unit and CO2 calibration value. When reset setting completed, the LED will show "RESET DONE" and then turn back to normal display. Not press Setting button within 5 seconds, the unit will not restore factory setting and back to normal display directly.

MICROSD DATA LOGGING

Insert MicroSD card (maximum capacity 128G), the unit will record the current temperature value, humidity value and CO2 value automatically. Save records every 15 seconds for one time in the format "MAC address+date.txt" under the folder HAWKEYE.




Save in a txt file for one day. For example:

D88039611193_2016-01-03.txt - Notepad				
UNIT: HAWKEYE				
MAC:D88039611193,2016/01/03				
HH:MM:SS	CO2	TEMPERATURE	HUMIDITY	
16 : 25 : 01	1446ppm	76.8F	54.1%rH	
16 : 25 : 16	1434ppm	76.2F	54.3%rH	
16 : 25 : 31	1453ppm	76.4F	52.8%rH	

Note: hot-plug is not permitted for the MicroSD card, otherwise it will damage the files in the MicroSD card.

LED DIMMING FUNCTION

The LED display will be dimmed if the device has stayed inactive for one minute. The factory setting of LED dimming function is ON. Press and hold **ENTER**  for 2 seconds to turn on or turn off this function.

FACTORY DEFAULT SETTING

Item	Default	Setting Range
Temperature Alarm Max Value (°F)	90	32-120, intervals between the max & min value is 5*
Temperature Alarm Min Value (°F)	60	32-120, intervals between the max & min value is 5
Humidity Alarm Max Value (% rH)	90	10-99, intervals between the max & min value is 10
Humidity Alarm Min Value (% rH)	40	10-99, intervals between the max & min value is 10
CO2 Alarm Max Value (ppm)	1600	20-3000, intervals between the max & min value is 100
CO2 Alarm Min Value (ppm)	350	200-3000, intervals between the max & min value is 100
Temperature Unit	°F	°F or °C

Remarks: *If the setting Min value is 50, then the Max value must be 55 or above, vice versa.

WARRANTY

TrolMaster Agro Instruments Co., Ltd. only use high quality components. Under normal operating conditions, the HAWKEYE Climate Monitor are covered by a three-year warranty from the original date of purchase. For service, return the HAWKEYE Climate Monitor in the original packaging to your shop with the original sale receipt. Components that are excluded from warranty are components that have failed due to abnormal usage. In the case of defects of the HAWKEYE Climate Monitor, the Monitor will either be replaced or repaired using new or reconditioned products or parts. If the Monitor will be replaced this limited warranty shall apply to the replacement product for the remaining initial warranty period, i.e. (three) 3 years from the date of purchase of the original product.

RETURN

All returns need to be done in the original packaging in order to avoid damages of the product during the transport. Defective products need to be returned to your local store for replacement or repair. No-professionals DO not open the cabinet to prevent electric shock or damage to the equipment.

TROUBLESHOOTING

Some of the most common issues or problems can be found within this section. Before returning the unit for service, please consult the troubleshooting points below.

PROBLEM	RESOLUTION
The unit is connected to power, but all LED screens and LED indicators don't work, no display.	Check whether the adapter voltage is normal, DC power plug inserted properly and the wire is damage or not.
All LED screens display horizontal lines.	Check whether the environmental sensor plug in place or the sensor cable is damaged or not.
One LED screen or two LED screens display horizontal line	Must be environmental sensor error, need for maintenance.
Network module LED indicator does not illuminate	Check whether the plug of network module and the plug of power adapter are connected properly or the wire is damaged or not.
Network module LED indicator flashing but can not connect to the network	Use the computer to test whether the connection device cable can connect to the Internet or not.

WARNING

DO NOT allow the HAWKEYE Climate Monitor to be exposed to water or excessive heat. DO NOT open or attempt to repair or disassemble the Monitor , as there are no user-serviceable parts inside. Opening the Monitor will void the warranty. If the HAWKEYE Climate Monitor is dirty, wipe it with a dry towel. The HAWKEYE operates under natural ventilation conditions.