

# User Manual

## CO2 + RH/T Monitor & Alarm w. Relay



TON-0001, TON-0011

### Important Safety Information

- ◆ Always cut off power before mounting, removing, and cleaning the monitor.

### Mounting and Wire Connection

- ◆ Do not mount the monitor behind a door, in the corner of a room or near a heat source, diffuser or any steam source, or in direct sunlight. Do not mount near a garbage bin or gas oven to prevent the false alarms.
- ◆ Cut off power and mount the wall plate as shown below:

Put a flat head screwdriver deep inside of the hole on the bottom of the monitor casing, then depress the clip lightly to remove the face plate from the wall plate according to steps 1-3 in fig. 1.

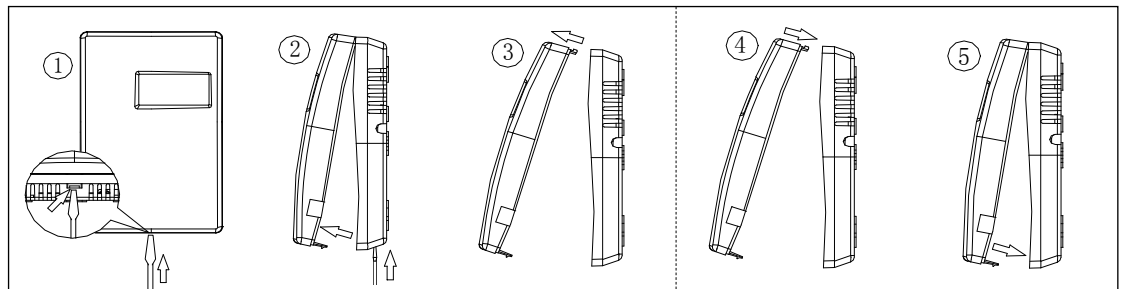


Fig.1

Fig.2

Mount the monitor on the wall and the height from the ground is 1.2m-1.3m, please see the mounting dimension and fixing hole in fig. 3. Connect wires to terminal strips, (see fig. 4) Make sure wiring connection correct and secure. After finishing the mounting, follows the step 4-5 in the fig. 2 to close the cover.

Fig.4 Wiring Diagram

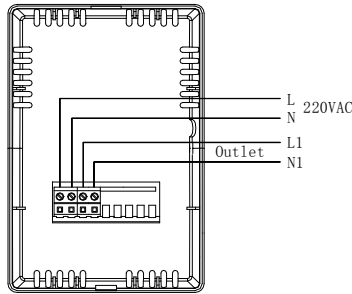
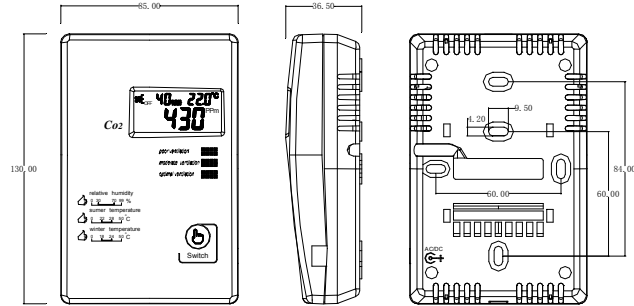


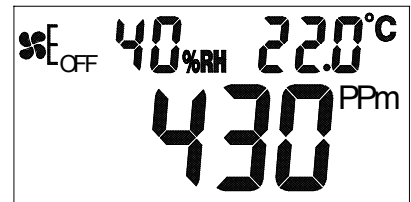
Fig.3



Power Input TON-0001: 100-240VAC (screw terminals) @ 3.5 W Max, 2.5 W Avg.  
 Power Input TON-0011: 24VAC (screw terminals) @ 3.5 W Max, 2.5 W Avg.

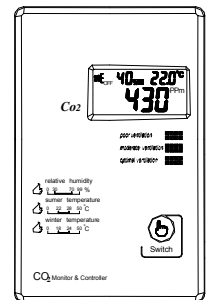
Operation

- ◆ Turn on the power, a red light at middle bottom of the cover is flickering. The measured temperature and the relative humidity displays on the upper line of the LCD and the number on the below line displaying count down from 120 seconds to 0. Finish the count down, the below line starts displaying measured CO2 level. Please note: for the first using or using again after power off for a long time (more than one month), the warm up time should be 24 hours, then the measurement will be steadily. In normal operation, the warm up time is 10 minutes.



- ◆ Touch button: (With relay ) the touch button is used to operate the monitor as shown in table below:

LCD display	Ventilator	Buzzer alarm
AUTO+ON	Auto run	valid
AUTO+OFF	Auto run	invalid
ON	Always on	invalid
OFF	Off	invalid
The circle order: AUTO+ON▶AUTO+OFF▶ ON▶ OFF▶ power off		



Operation button

- ◆ 4 setting values of CO2 measurement available as shown in table below. Choose one of them to control the output. Default setting is 1000ppm, which means when CO2 measurement reaches 800ppm, the output of the controller will turn on the controlled device, like say a ventilation fan.

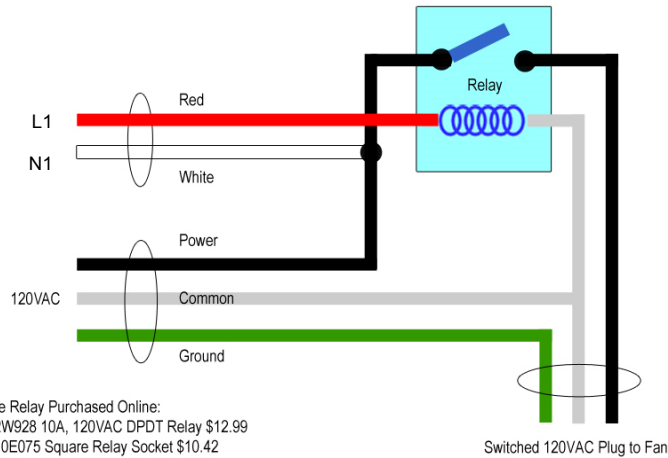
Turn off the power and find the two DIP switches on the circle board through the notch on the back plate.

DIP1-1: ON – Change defaults (not for end users)  
 OFF - Normal Using

DIP1-2: ON – Temperature display in Fahrenheit degree  
 OFF- Temperature display in Celsius degree

Put the DIP2 up for ON, down for OFF.

DIP2-1	DIP2-2	CO2 measurement
OFF	OFF	800ppm
OFF	ON	1000ppm (default)
ON	OFF	1200ppm
ON	ON	1400ppm



Sensing Element	Non-Dispersive Infrared CO2 Detector (NDIR)
Temperature sensor / Humidity sensor	NTC 5K thermistance / HS series capacitive sensor
Power Supply	TON-0001: 100~240VAC, TON-0011 24VAC. Both @ 3.5W Max, 2.5W Avg.
Warm up Time	24 Hours (First time)      10 Minutes (Normal Operation)
CO <sub>2</sub> measuring range	0~5,000ppm
Temperature Measurement Range	Measurement Range: 0~50°C
Humidity Measurement Range	Measurement Range: 0~99% RH
LCD Backlight	<p>Green—optimal air quality (&lt;1000)      ► Enjoy the indoor air</p> <p>Yellow—moderate air quality (1001~1400)      ► Ventilation can be used</p> <p>Red—poor air quality (&gt;1400)      ► Immediate ventilation</p>
Sound Alarm	<p>As the CO<sub>2</sub> measurement ≥1800ppm, the Inner buzzer alarm will be sound</p> <p>As the CO<sub>2</sub> measurement &lt;1780ppm, the Inner buzzer alarm will be off</p>
Control output	1xRelay output to control a ventilator or air-purifier. The CO <sub>2</sub> level which controls the relay action will be set via 2 DIP's. Max current 3A resistance (220VAC)
Operation condition / Storage conditions	<p>Operation condition: 0°C~50°C/ 0~ 95% RH</p> <p>Storage conditions: -10°C~60°C/ 5~ 95% RH</p>
Net Weight	200g
Dimensions	130mm(height)×85mm(width)×36.5mm(D)
Installation standard	wall mount (65mm×65mm or 85mmX85mm or 2"×4" wire box)
Wiring standard	Wire section area <1.5mm <sup>2</sup>
Quality System	ISO 9001
Housing	PC/ABS fire-proof, IP30 protection
Certificate	CE