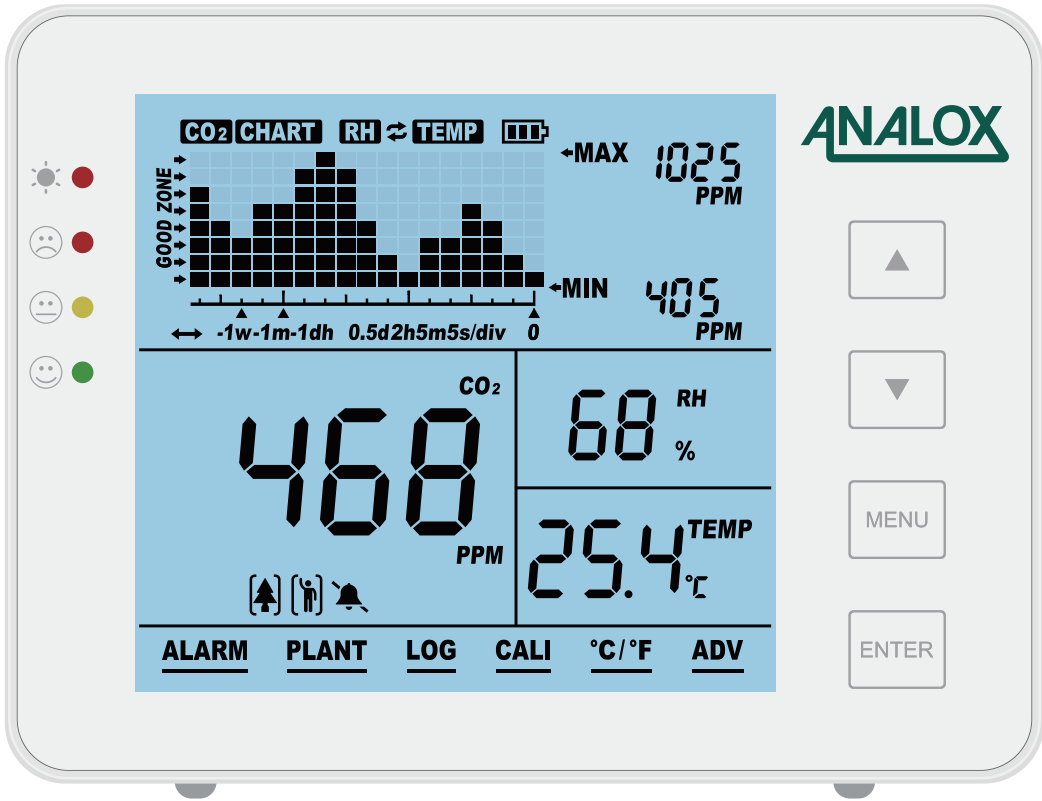
Air Quality Guardian

Instruction Manual



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RoHS 2.0 REACH

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Getting Started

Thanks for purchasing our desktop CO_2 monitor! This product is used to monitor CO_2 concentration, RH, and temperature for indoor air quality monitoring.

Packing List

CO_2 Monitor Unit
USB Cable for Power
User's Manual

Features at a Glance

- Large Display
- Touch Button Operation
- Monitor set at a 15° angle for ease of reading
- Low Drift NDIR Sensor, Long Lifespan
- Audible Alarm
- Chart with Variable Time Zoom Levels
- CO_2/RH/Temperature Monitor Tracer
- CO_2 Auto-Calibration and Manual Calibration
- Temp and RH Manual Calibration
- Max/Min Value Display
- Built-in Backup Battery

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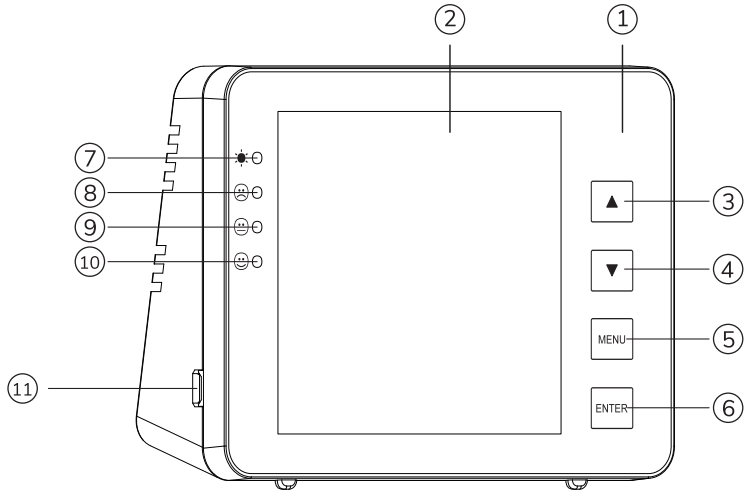
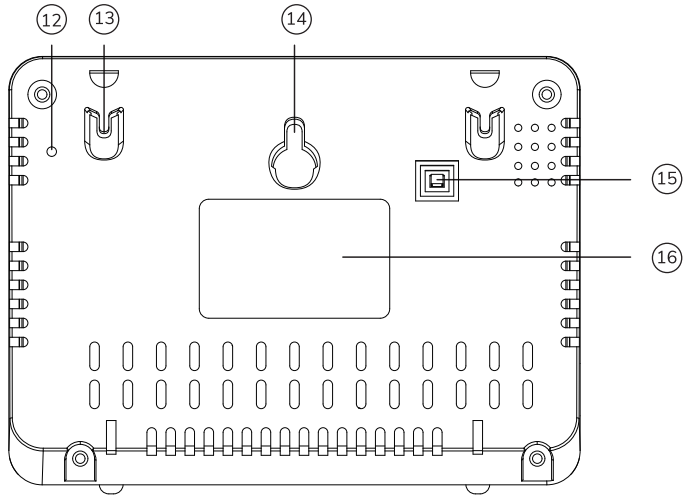
Overview

Drawing and Components List





Item	Description	Item	Description
①	Front Panel	⑨	Orange Condition Indicator
②	LCD	⑩	Green Condition Indicator
③	UP Button	⑪	USB Port
④	Down Button	⑫	Hole for Buzzer
⑤	Menu Button	⑬	Hole for Rope
⑥	Enter/OK Button	⑭	Hole for Screws
⑦	Battery Indicator	⑮	ON/OFF Switch
⑧	Red Condition Indicator	⑯	Label

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General Operation and Settings

Charge the Air Quality Guardian prior to first use, see page 5 for details.

- Press down the switch on the back to activate this monitor. After 3 minutes' warm-up, your device is ready for use. See details in Page 4.
- Use the provided USB cable to connect the device for charging. See Page 5 for details.
- Use ▲ and ▼ buttons to switch timeline and CO_2/RH/TEMP. The trend chart displays the history records for any of the three parameters. See Page 7 for details.
- Touch MENU once will bring up the main menu. To select the function, touch MENU / ▼ button. See Page 9 for details.
- Select PLANT to switch human and plants modes. See Page 10 for details.
- Enter ALARM to switch alarm and mute . See Page 10 for details.
- Select ADV to change the high/low alarms for human and plant . See Page 13 for details.
- Enter °C/°F to switch temperature units C and F. See Page 12 for details.

Restore Factory Defaults

In Detection Panel , touch ENTER for 4 seconds until an audible beep is heard.

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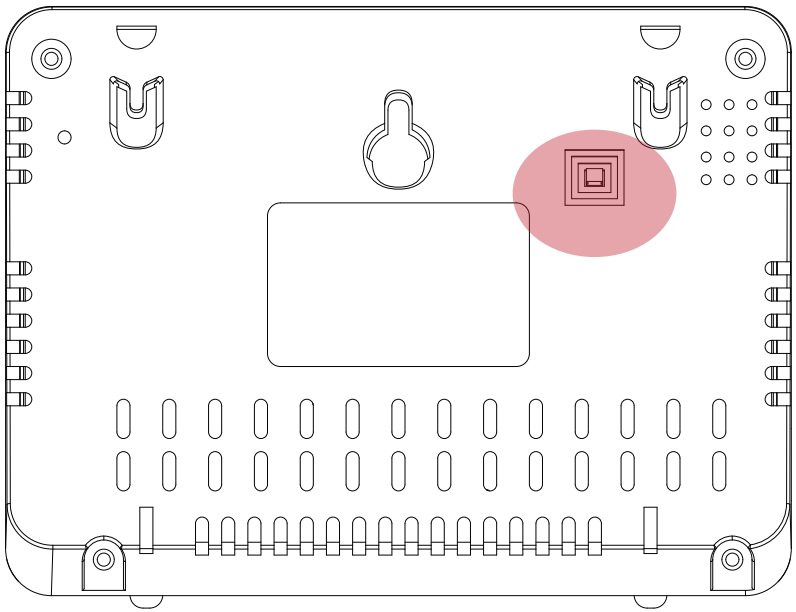
Switch On/Off

Press down the switch to activate this monitor, wait for 3 minutes for warm-up.
Press the switch again to switch it off.



Switch on:

Switch off:

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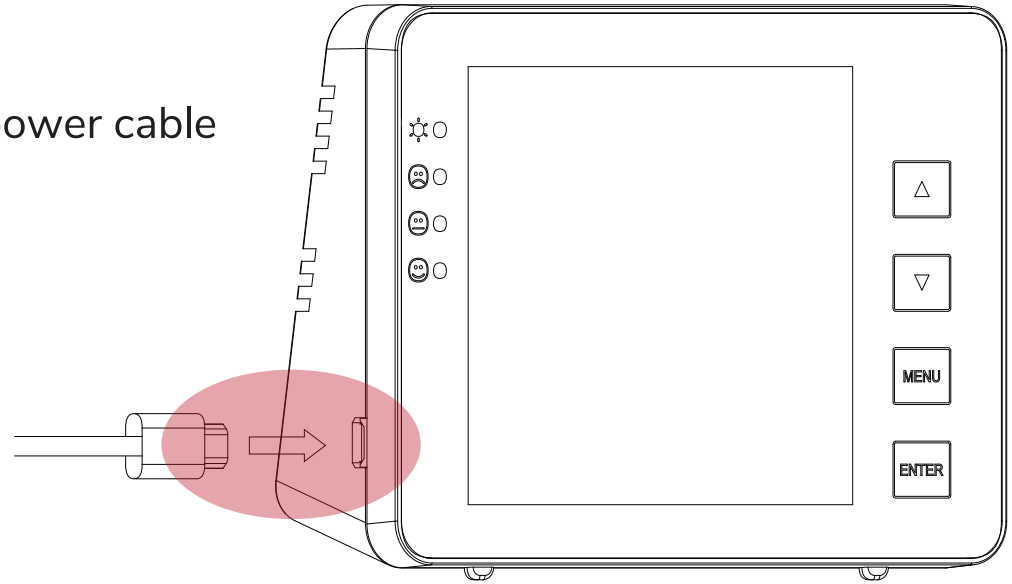
Power Source

Plug in USB power

When the device is ON, plug in USB power cable



Battery

Battery indicator

Low battery: steady red indicator (Charge the device within 20 minutes to avoid battery damage)

Charging: flashing red indicator

Fully charged: steady green indicator

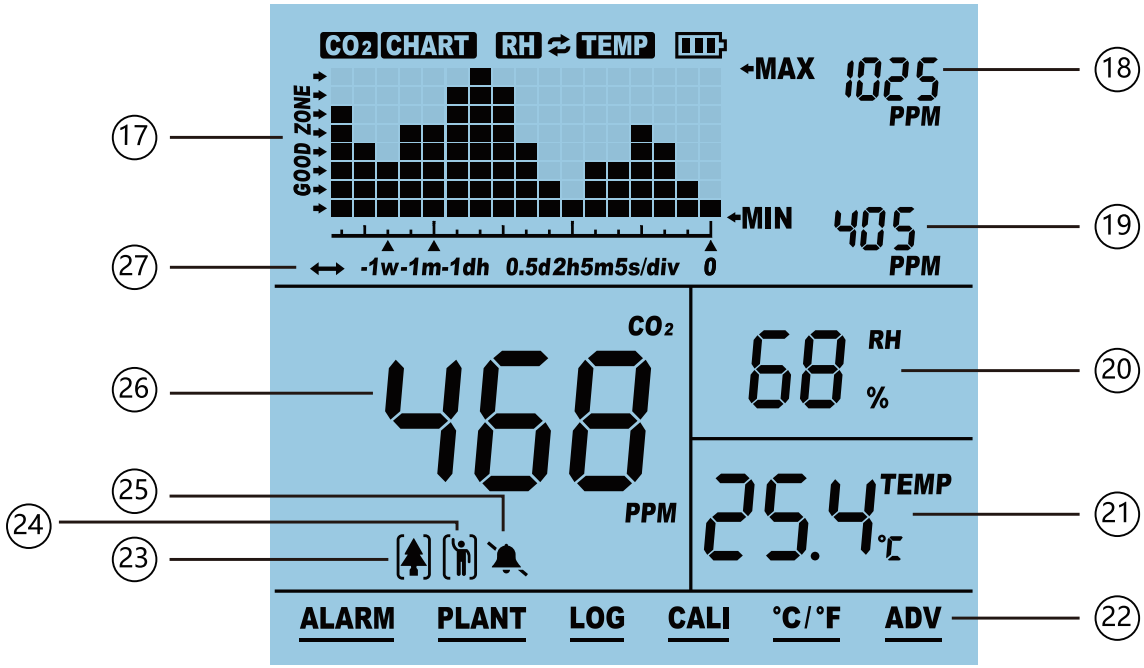
Battery recharging

When the device is ON, plug in USB power cable

Charging time: 2.5 hours (Charge extra 30 minutes after the indicator turning from red to green)

Working time: 8-10 hours

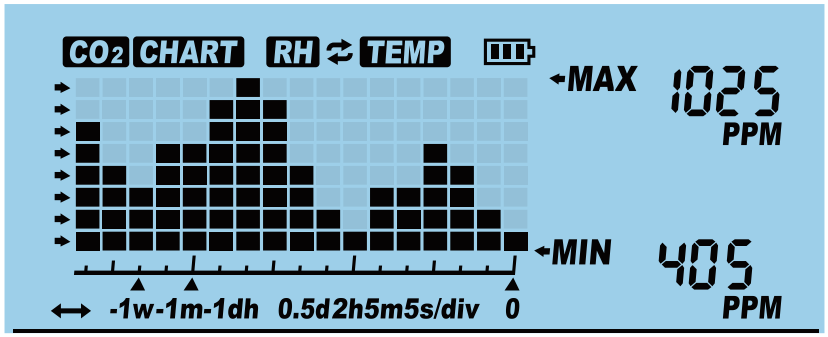
LCD Display

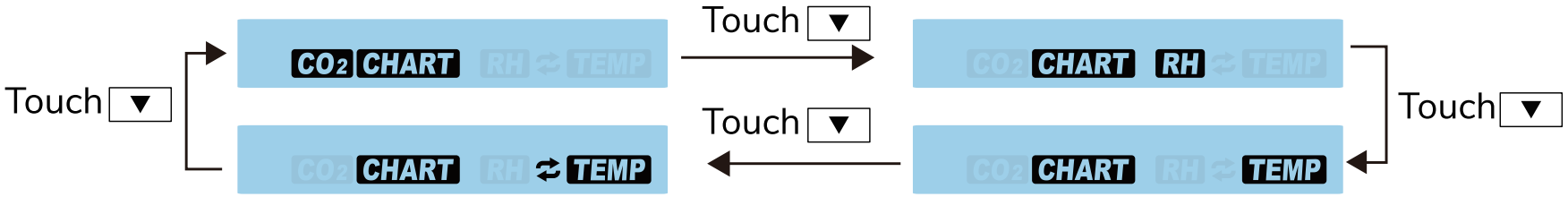


Item	Name	Item	Name
⑰	CO_2/RH/TEMP Chart	㉓	Plant Mode
⑱	Max Reading of Chart	㉔	Human Mode
⑲	Min Reading of Chart	㉕	Audible Alarm On/Off
⑳	RH Reading	㉖	CO_2 Reading
㉑	Temperature Reading °C / °F	㉗	Time per Division - indicates the chart's span of time
㉒	Main Menu		

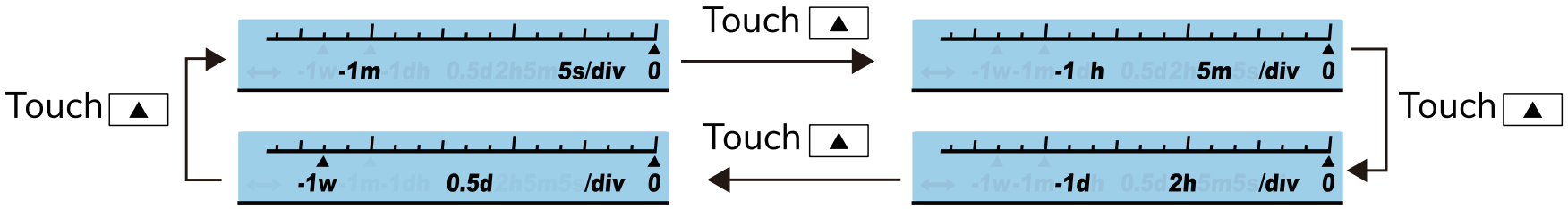
Trend Chart Display

The below chart displays the past readings for any of the three parameters (CO_2/RH /Temp). There are 4 modes that can be toggled by using ▼ key: CO_2, TEMP, RH, and Cycle (automatically cycles through CO_2/Temp/RH).





Touch ▲ will toggle the available Zoom Levels for each parameters. (Minute/Hour/ Day/Week)



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Below is a table that shows the available Zoom Levels for all parameters CO_2/RH/Temp, as well as the duration of each division for corresponding Zoom Levels:

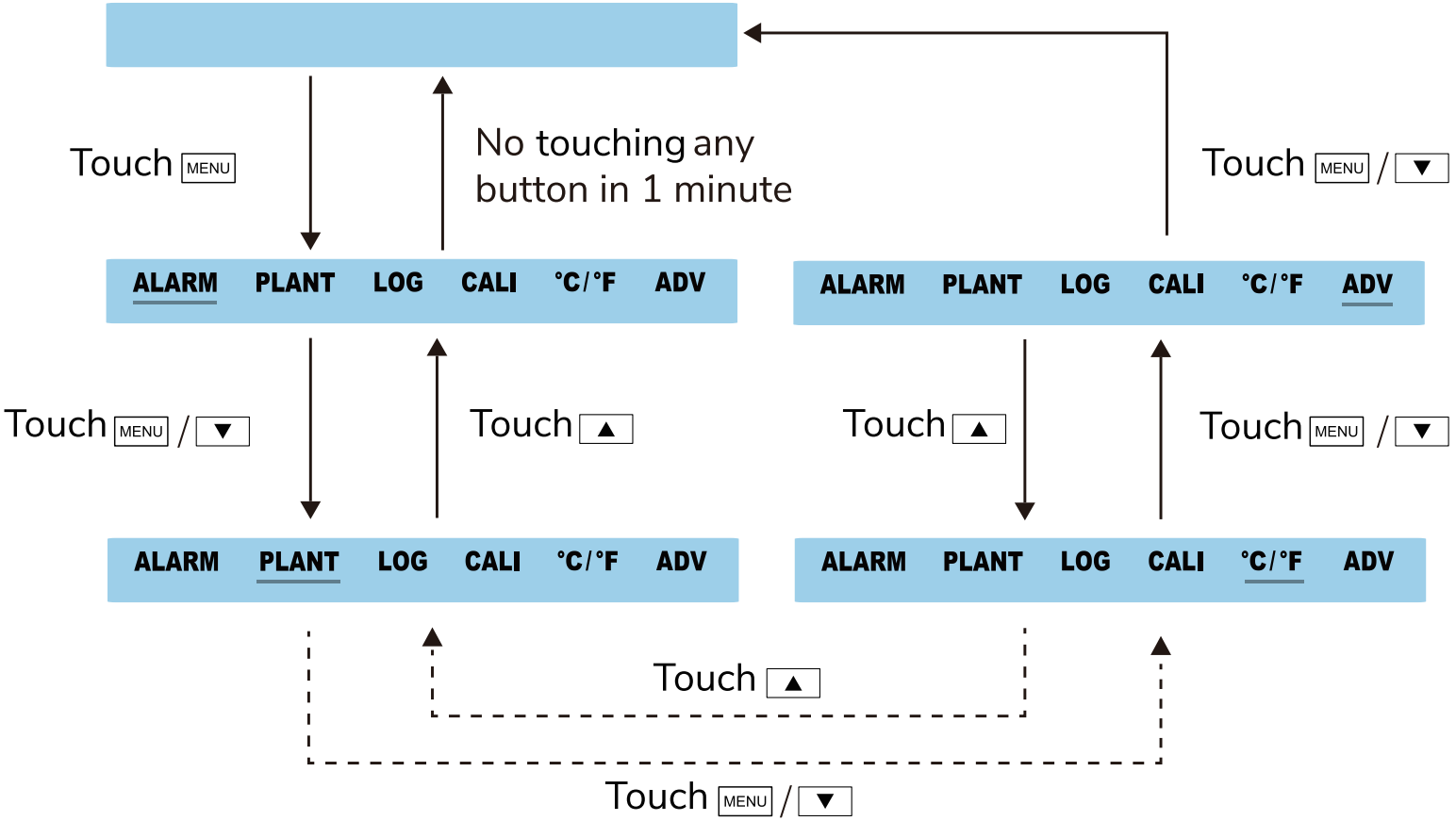
Zoom Level (Time Span)	Time per Division
1M (minute)	5sec/div
1H (hour)	5m/div
1D (day)	2h/div
1W (week)	0.5d/div

Max/Min

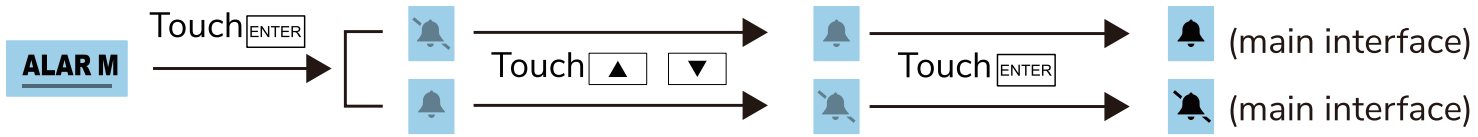
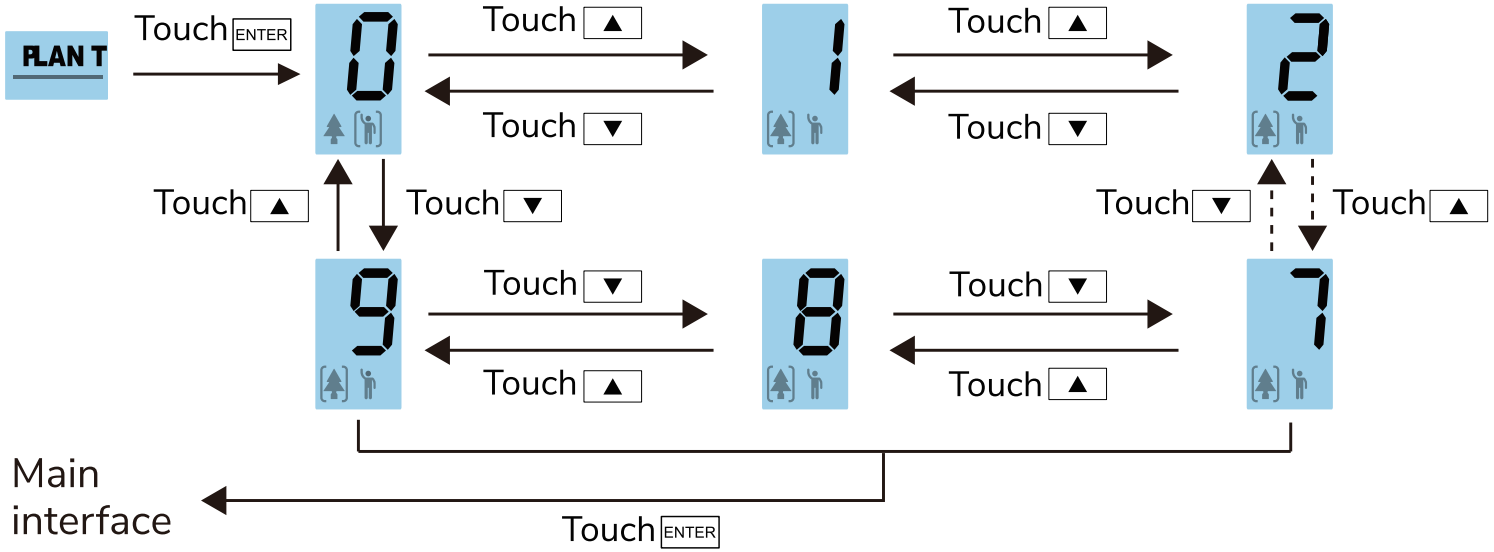
At the top right corner of the display, there are two numerical indicators: MAX and MIN. As the Zoom Level is changed, the MAX and MIN values will reflect the maximum and minimum values on the chart of the selected parameter (CO_2, RH and Temp).

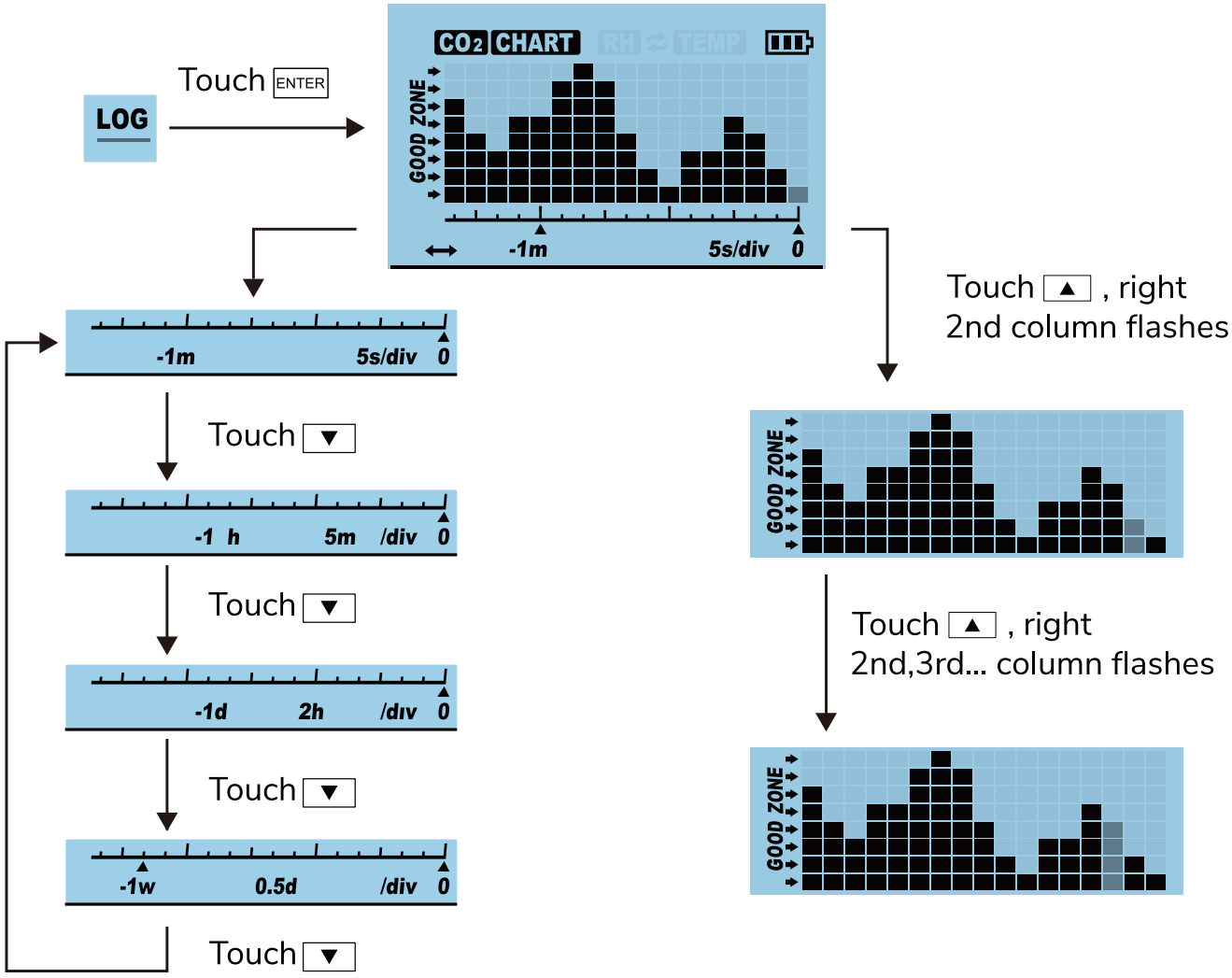
Main Menu Functions

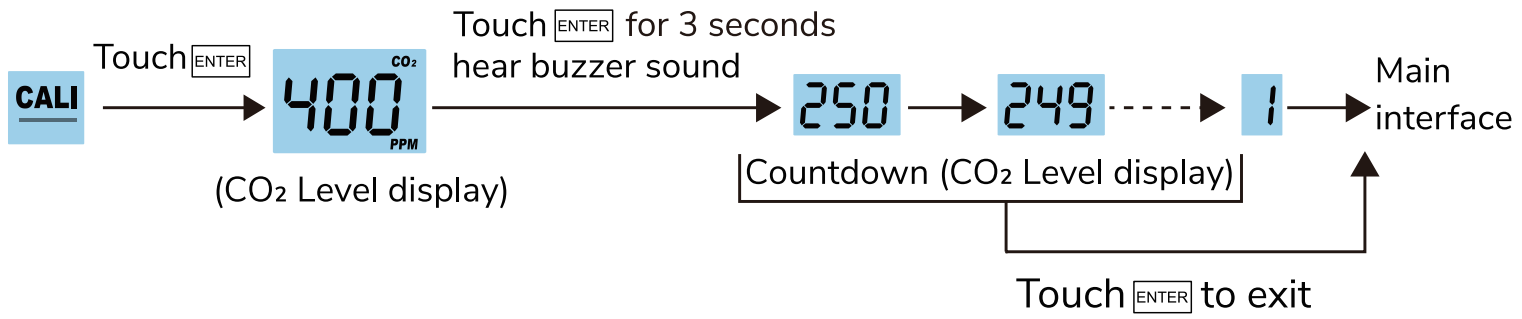
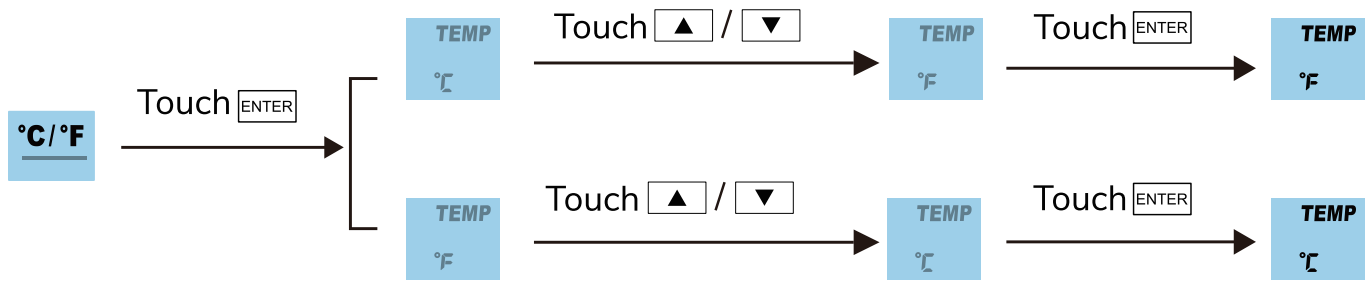
The Main Menu functions can be accessed by touching MENU.
The arrows can be used to scroll through menu options.

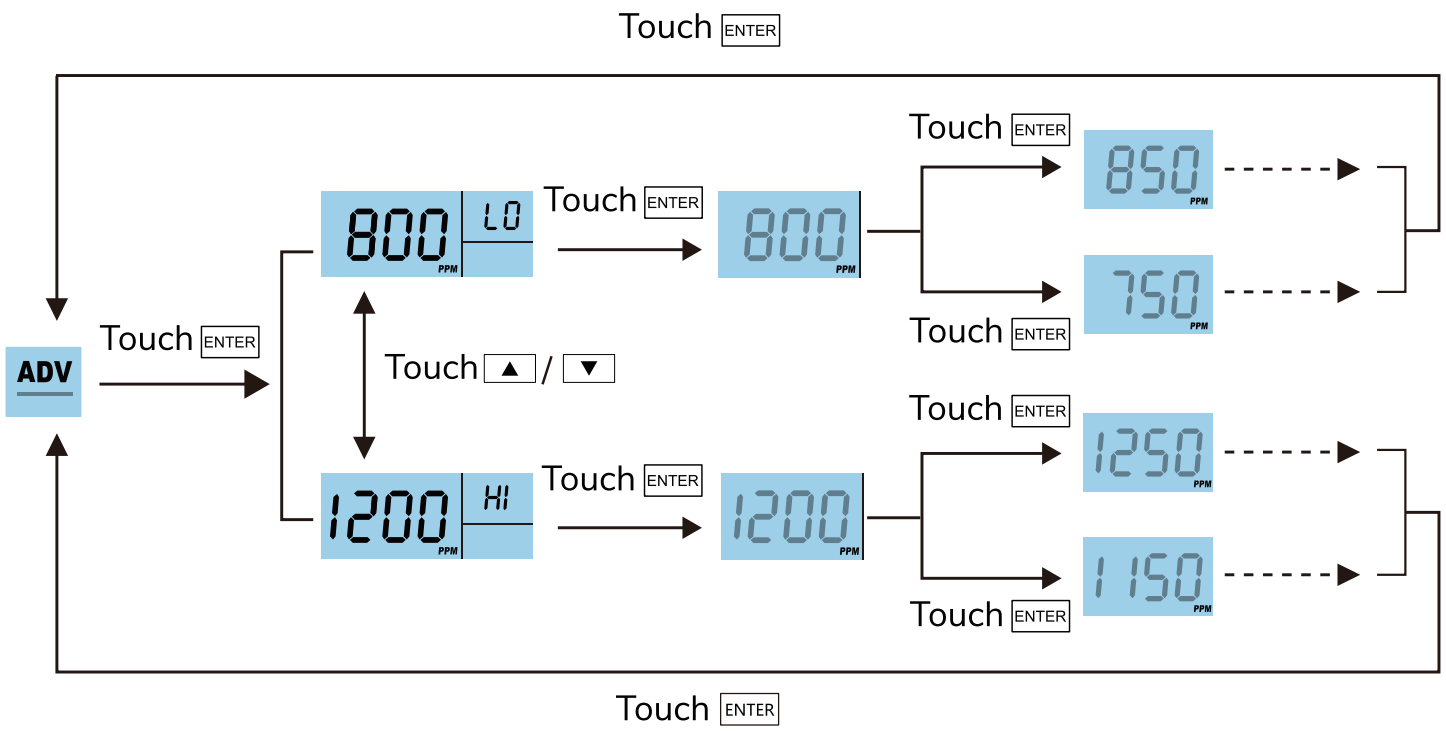


To select the function, touch ENTER when it is underlined by the flashing bar. Note that after 30 seconds if nothing is touched, the Main Menu will disappear and the device will revert to the normal state.

Function	Description
ALARM	
	When ALARM displays , an audible alarm will sound if the CO_2 level exceeds preset CO_2 alarm value; means MUTE.
PLANT	
	Select number 0 to enter human mode. The preset low and high alarm are 800 and 1200ppm. Enter "ADV" to adjust them if necessary. In plant mode, it allows user to select between types of plants for optimal setting by using ▲/ ▼ cycles through 1~9. See number references with corresponding alarm settings in high and low alarms in Page 17.

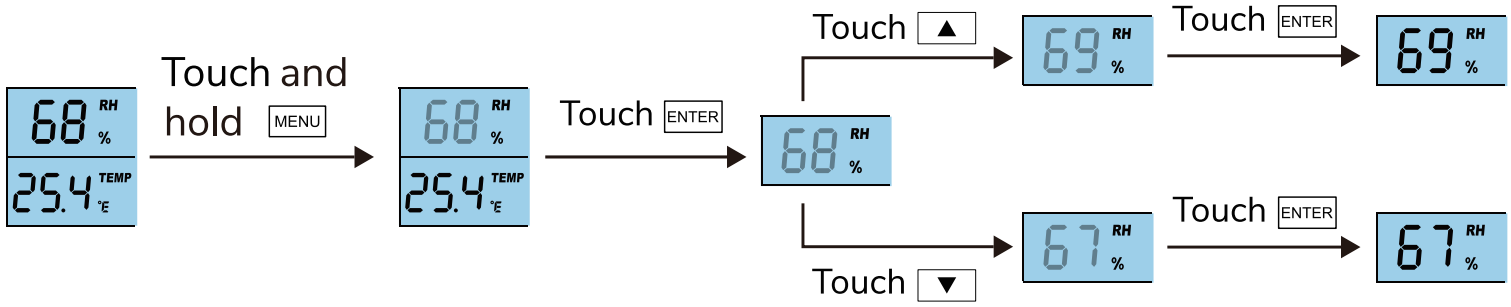
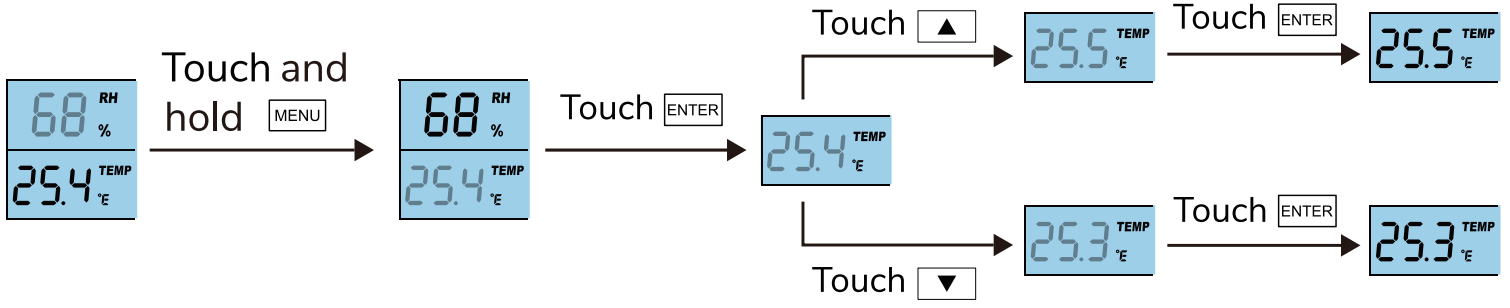
Function	Description
LOG	 This function allows the user to see historical data records.

Function	Description
CALI	
	Before calibration, run this device for at least 20 minutes with windows open or in outdoor environment with portable battery source to reach an atmosphere with 400ppm CO_2. Wait till the CO_2 reading is stable, follow above steps for calibration. After calibration leave it 10 minutes before normal use.
°C / °F	
	Use this function to toggle between Celsius (°C) and Fahrenheit (°F) for the temperature display.

Function	Description
ADV	
	Use this function to set high and low alarm values of human mode (0) as well as the first option of plant mode (1). High and low alarms for options 2-9 under plant mode are not adjustable. See details in Page 14. (Appendix)

RH/TEMP Calibration

This function allows the user to calibrate the temperature or humidity manually.
(RH = Humidity; TEMP = Temperature)
In the detection mode, touch and hold MENU for 3 seconds to bring up an underlining flashing bar of RH.

Function	Description
RH	
TEMP	

Specifications

Typical test conditions: Ambient Temp: 23 ±3°C, RH = 50%~70%, Altitude = 0~10 meters

Measurement	Specifications
Operating Temperature	32°F ~ 122°F (0°C ~ 50°C)
Storage Temperature	-4°F ~ 140°F (-20°C ~ 60°C)
Operating & storage RH	0-95%(non-condensing)
CO_2 Measurement	
Measuringe range	(0-5000)ppm
Display resolution	1ppm (0-1000); 5ppm (1000-2000); 10ppm (>2000)
Accuracy	(0~3000)ppm: ± 50ppm ± 5% of reading (take the Maximum)
	(＞3000)ppm: ± 7% of reading
Repeatability	20ppm at 400ppm
Temp compensation	±0.1% of reading per °C ±2 ppm per °C, referenced to 25℃
Response time	＜2 min for 63% of step change or ＜ 4.6 min for 90% step change
Warm-up time	<20 seconds

Temperature Measurement	
Operating temperature	32°F ~ 195°F (0°C ~90°C)
Display resolution	1°F / 0.1°C
Response time	<20 minutes (63%)
RH Measurement	
Measuring range	5~95%
Accuracy	±5%
Display resolution	1% Main interface display，1% Max/Min display
Operating Voltage	5VDC (±0.25V)
Dimension	120*90*35mm (4.75*3.5*1.4inches)
Weight	190g (6.70oz)

Appendix

No.	Refers	Low/High Alarm	Adjustable
0	FOR Human	800-1200ppm	Yes
1	FOR Customized Plant	600-900ppm	Yes
2	FOR Bean	600-900ppm	No
3	FOR Chillies	800-1000ppm	No
4	FOR Cucumber	1000-1500ppm	No
5	FOR Grape	800-1400ppm	No
6	FOR Orchid	800-1400ppm	No
7	FOR Potato	1200-1800ppm	No
8	FOR Strawberry	800-1200ppm	No
9	FOR Tomato	800-1200ppm	No