



Laboratory Equipment Manufacturer
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*SD card real time Data Recorder
CO₂, Humidity, Dew point, Temp.*

CO₂ METER + HUMIDITY/Temp.

Model : COH-9905SD



OPERATION MANUAL

PLEASE READ THIS MANUAL CAREFULLY BEFORE OPERATION

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MRC.1.22

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1. FEATURES

- * Real time recorder, save the data into the SD memory card and can be down load to the Excel, extra software is no need. User can make the further data or graphic analysis by themselves. under the Excel software.
- * At the same time, the SD memory card can record 2 probe's data (%RH/CO/Temp.) along with the time information into the one Excel file at the same time.
- * Manual datalogger is available, during execute the manual datalogger function, it can set the different location no. (position 1 to position 99).
- * Air quality measurement application, multi-function :
CO2 (Carbon monoxide),
Humidity, temperature measurement.
- * CO2 range : 0 to 10,000 ppm x 1 ppm.
- * Humidity range: 10 to 95 %RH.
- * Dew point Temp. and Wet bulb Temp. measurement.
- * Temp. range : 0 to 50.0 °C, °C/°F.
- * CO2 sensor : NDIR.
- * Humidity sensor : Precision capacitance sensor
- * Alarm setting with the beeper sound output.
- * Sampling time for data recorder is 2 to 3600 seconds.
- * Meter can cooperate with 2 GB to 16 GB SD card, SD card is optional.
- * RS232/USB computer interface.
- * Patented.

2. SPECIFICATIONS

2-1 General Specifications

Circuit	Custom one-chip of microprocessor LSI circuit.	
Display	LCD size : 52 mm x 38 mm LCD with green backlight (ON/OFF).	
Measurement	CO2 (Carbon monoxide), Humidity Dew point Temp., Wet bulb Temp. Temperature	
Sensor structure	CO2	NDIR * Nondispersive infrared sensor
	Humidity	Precision capacitance sensor
	Temp.	Precision thermistor
Datalogger Sampling Time Setting range	Auto	2,5,10,30,60,120,300,600,1800,3600 Second. @ <i>Sampling time can set to 1 second, but memory data may loss.</i>
	Manual	Push the data logger button once will save data one time. @ <i>Set the sampling time to 0 second.</i> @ <i>Manual mode, can also select the 1 to 99 position (Location) no.</i>
Data error no.	0.1% of total saved data max.	
Memory Card	SD memory card. 1 GB to 16 GB.	
Advanced setting @ <i>main setting</i>	<ul style="list-style-type: none"> * SD memory card Format * Set clock time * Set sampling time * Auto power OFF management * Set beep Sound ON/OFF * Decimal point of SD card setting * Temp. unit setting * Alarm value setting * Altitu value setting 	

Data Hold	Freeze the display reading.	
Memory Recall	Maximum & Minimum value.	
Sampling Time of Display	Approx. 1 second.	
Data Output	RS 232/USB PC computer interface. * Connect the optional RS232 cable UPCB-02 will get the RS232 plug. * Connect the optional USB cable USB-01 will get the USB plug.	
Power Supply	* Alkaline or heavy duty DC 1.5 V battery (UM3, AA) x 6 PCs, or equivalent.	
	* DC 9V adapter input. (AC/DC power adapter is optional).	
Power Current	CO2 measurement	Normal operation (w/o SD card save data and LCD Backlight is OFF) : <i>Approx. DC 65 mA.</i>
		When SD card save the data and LCD Backlight is OFF) : <i>increase approx. DC 42.5 mA.</i>
	* <i>If LCD backlight on, the power consumption will increase approx. 10 mA.</i>	
Operating Temperature	0 to 50 °C. (32 to 122 °F).	
Operating Humidity	Less than 80% R.H.	
Weight	350 g/0.77 LB.	
Dimension	Meter	177 x 68 x 45 mm
Accessories Included	Instruction manual..... 1 PC Hard carrying case 1 PC	
Optional Accessories	SD memory card AC to DC 9V adapter. USB cable, USB-01. RS232 cable, UPCB-02. Data Acquisition software, SW-U801-WIN.	

2-2 Electrical Specifications (23±5 °C)

CO2 (Carbon dioxide)

CO2 (Carbon dioxide) 23 ± 5 °C.	Range	0 to 10,000 ppm	
	Resolution	1 ppm	
	Accuracy	±40 ppm * ≤1,000 ppm.	
		±(50ppm +3% of reading) * > 1,000 ppm ≤ 3,000 ppm.	
		±(50ppm +5% of reading) typically * > 3,000 ppm ≤ 10,000 ppm. ,	
Repeatability	± 20 ppm	* ≤ 3,000 ppm.	
Temperature	Range	0 °C to 50 °C, 32 °F to 122 °F.	
	Resolution	0.1 degree	
	Accuracy	°C : ±0.8 °C	°F : ±1.5 °F.

Humidity/Temperature

Humidity	Range	5 % to 95 % R.H.	
	Resolution	0.1 % R.H.	
	Accuracy	≥70% RH : ±(3% reading + 1% RH). < 70% RH : ±3% RH.	
Temperature	Range	0 °C to 50 °C, 32 °F to 122 °F.	
	Resolution	0.1 degree	
	Accuracy	°C	±0.8 °C.
°F		±1.5 °F.	

Dew Point Temp. (Humidity)

°C	Range	-25.3 °C to 48.9 °C
	Resolution	0.1 °C
°F	Range	-13.5 °F to 120.1 °F.
	Resolution	0.1 °F.

Remark :

- * Dew Point display value is calculated from the Humidity/Temp. measurement automatically.
- * The Dew Point accuracy is sum accuracy value of Humidity & Temperature measurement..

Wet bulb Temp. (Humidity)

°C	Range	-21.6 °C to 50.0 °C
	Resolution	0.1 °C
°F	Range	-6.9 °F to 122.0 °F.
	Resolution	0.1 °F.

Remark :

- * Wet bulb display value is calculated from the Humidity/Temp. measurement automatically.
- * The Welt bulb accuracy is sum accuracy value of Humidity & Temperature measurement..

@ Above specification tests under the environment RF Field Strength less than 3 V/M & frequency less than 30 MHz only.

3. FRONT PANEL DESCRIPTION

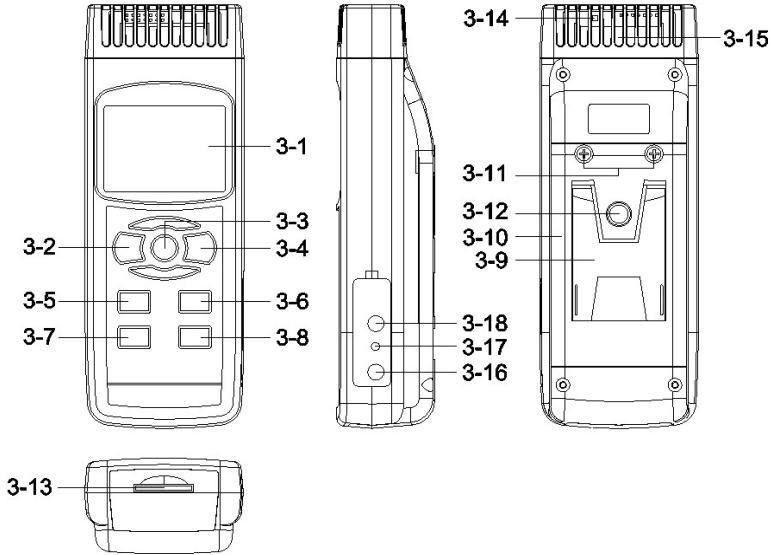


Fig. 1

- 3-1 Display
- 3-2 Power Button (Backlight Button)
- 3-3 Hold Button (ESC Button)
- 3-4 REC Button ()
- 3-5 ▲ / Function Button (Alarm Button)
- 3-6 ▼ Button/SCREEN Button
- 3-7 Time Button (SET Button)
- 3-8 ENTER Button (Logger Button)
- 3-9 Stand
- 3-10 Battery Compartment/Cover
- 3-11 Battery Cover Screw
- 3-12 Tripod Fix Nut
- 3-13 SD Card Socket
- 3-14 Humidity/Temp. Sensing.
- 3-15 CO2 Seneing.
- 3-16 DC 9V Power Adapter Input Socket
- 3-17 Reset Button
- 3-18 RS-232 Output Terminal

4. MEASURING PROCEDURES

Measuring procedures

- 1) Power on the meter by pushing the " Power Button "(3-2, Fig. 1)
> 2 seconds the meter will be power on.
- 2) Press the " Screen Button " (3-6, Fig. 1) once in sequence to select the measuring function Screen :



- 3) In Humidity/Temp. Measure scree ,Press the " Function Button " (3-5, Fig. 1) once in sequence to select the DEW/°C or WET/°C measuring function Screen :



Remark :

After select the desired function, power off the meter then power on again, the meter circuit memory will save the selected unit with default.

5. OTHER FUNCTION

5-1 Data Hold

During the measurement, press the " Hold Button " (3-3, Fig. 1) once will hold the measured value & the LCD will display a " HOLD " symbol. Press the " Hold Button " once again will release the data hold function.

5-2 Data Record (Max., Min. reading)

- 1) The data record function records the maximum and minimum readings. Press the " REC Button " (3-4, Fig.1) once to start the Data Record function and there will be a " REC " symbol on the display.
- 2) With the " REC " symbol on the display :
 - a) Press the " REC Button " (3-4, Fig. 1) once, the " REC MAX " symbol along with the maximum value will appear on the display.
 - b) Press the " REC Button " (3-4, Fig. 1) again, the " REC MIN " symbol along with the minimum value will appear on the display.
 - c) To exit the memory record function, just press the " REC Button " for 2 seconds at least. The display will revert to the current reading.

5-3 LCD Backlight OFF and 4rd-order LCD Backlight brightness

Depending on the brightness of the environment, can use the "Backlight Button " (3-2, Fig. 1) select LCD Backlight from OFF and 4rd-order LCD Backlight brightness Sequentially cycle.

6. DATALOGGER

6-1 Preparation before execute datalogger function

a. Insert the SD card

* It recommend use memory card ≤ 4 GB.

Prepare a " SD memory card " (1 GB to 16 GB, optional), insert the SD card into the " SD card socket " (3-13, Fig. 1). The front panel of the SD card should face against the down case.

b. SD card Format

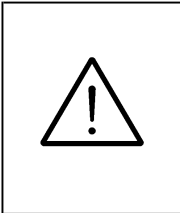
If SD card just the first time use into the meter, it recommend to make the " SD card Format " at first. , please refer chapter 8-1, page 17.

* It recommend strongly, do not use memory cards that have been formatted by other meter or by a computer. Reformat the memory card with your meter.

c. Time setting

If the meter is used at first time, it should to adjust the clock time exactly, please refer chapter 8-2, page 17.

d. Decimal format setting



The numerical data structure of SD card is default used the "." as the decimal, for example "20.6" "1000.53". But in certain countries (Europe ...) is used the ",", " as the decimal point, for example " 20, 6 " "1000,53". Under such situation, it should change the Decimal character at first, details of setting the Decimal point, refer to Chapter 8-6, page 20.

6-2 Auto Datalogger (Set sampling time ≥ 1 second)

a. Start the datalogger

Press the " LOG Button (3-8, Fig. 1) > 2 seconds continuously, the LCD will show the text of " LOGGER " indicator and flashing per second, at the same time the measuring data along the time information will be saved into the memory circuit.

Remark :

- * How to set the sampling time, refer to Chapter 8-3 page 18.*
- * How to set the beeper sound is enable, refer to Chapter 8-5, page 19.*

b. Pause the datalogger

During execute the Datalogger function , if press the " Logger Button " (3-8, Fig. 1) once will pause the Datalogger function (stop to save the measuring data into the memory circuit temporally). In the same time the text of " LOGGER " will be no flashing.

Remark :

If press the " Logger Button " (3-8, Fig. 1) once again will execute the Datalogger again, the bottom text of " DATALOGGER " will flashing .

c. Finish the Datalogger

During execute the Datalogger function, press the " LOG Button (3-8, Fig. 1) > 1.5 seconds continuously again will finish the Datalogger function, the " LOGGER " text will be disappeared and finish the Datalogger function.

6-3 Manual Datalogger (Set sampling time = 0 second)

a. Set sampling time is to 0 second

Press the " LOG Button (3-8, Fig. 1) > 2 second, the LCD will show the indicator " LOGGER " and " Position no. " symbol then press the " LOG Button " (3-8, Fig. 1) once , the " LOGGER " symbol will flashing once and Beeper will sound once at the same time the measuring data along the time information will be saved into the memory circuit .

Remark :

During execute the Manual Datalogger, press the " ▲ Button " (3-5, Fig, 1) the lower no. (position no.) will flashing. It can use the " ▲ Button " (3-5, Fig. 1) or " ▼ Button " (3-6, Fig. 1) to set the measuring Location no. (1 to 99, for example room 1 to room 99) to identify the measurement location , the lower Display will show P x (x = 1 to 99).

b. Finish the Datalogger

During execute the Datalogger function, press the " LOG Button (3-8, Fig. 1) > 1.5 seconds continuously again will finish the Datalogger function, the Position no. " PXX " will be disappeared and finish the Datalogger function.

6-4 To check the time information

During the normal measurement screen (not execute the Datalogger),

- 1) If press " Time Button " (3-7, Fig. 1) once , the lower LCD display will present the time information of Year/Month/Date/Hour/Minute/Second in the lower Display.

6-5 Check sampling time information

During the normal measurement screen (not execute the Datalogger), If press " Sampling Button " (3-8, Fig. 1) once , the lower LCD display will present the Sampling time information in second unit.

6-6 SD Card Data structure

- 1) When the first time, the SD card is used into the meter, the SD card will generate a route :

C2B01

- 2) If the first time to execute the Datalogger, under the route C2B01\, will generate a new file name C2B01001.XLS.
After exist the Datalogger, then execute again, the data will save to the C2B01001.XLS until Data column reach to 30,000 columns, then will generate a new file, for example C2B01002.XLS
- 3) Under the folder C2B01\, if the total files more than 99 files, will generate anew route, such as C2B01\
- 4) The file's route structure :
C2B01\
 C2B01001.XLS
 C2B01002.XLS

 C2B01099.XLS

C2B01\
C2B01001.XLS
C2B01002.XLS

.....
C2B01099.XLS

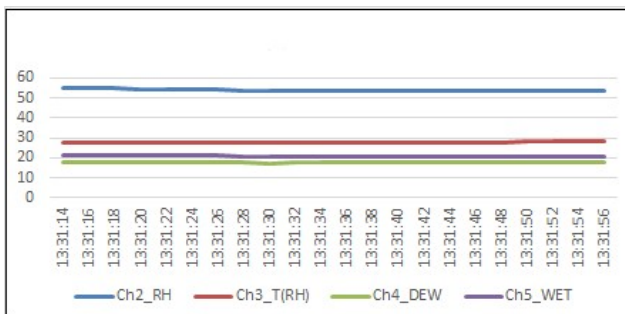
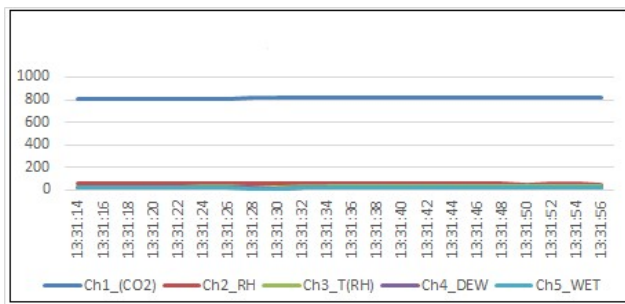
C2BXX\
.....
.....

Remark :
XX : Max. value is 10.

7. Saving data from the SD card to the computer (EXCEL software)

- 1) After execute the Data Logger function, take away the SD card out from the " SD card socket " (3-13, Fig. 1).
- 2) Plug in the SD card into the Computer's SD card slot (if your computer build in this installation) or insert the SD card into the " SD card adapter ". then connect the " SD card adapter " into the computer.
- 3) Power ON the computer and run the " EXCEL software ".
Down load the saving data file (for example the file name : C2B01001.XLS, C2B01002.XLS) from the SD card to the computer. The saving data will present into the EXCEL software screen (for example as following EXCEL data screens) , then user can use those EXCEL data to make the further Data or Graphic analysis usefully.

EXCEL graphic screen (for example, graphic)



EXCEL data screen (for example)

#	1	2	3	4	5	6	7	8	9	10	11	12	13
1	Position	Date	Time	Ch1_CO2	Ch1_unit	Ch2_RH	Ch2_unit	Ch3_TORH	Ch3_unit	Ch4_DEW	Ch4_unit	Ch5_WET	Ch5_unit
2	1	2019/10/3	13:31:14	812	CO2_ppm	54.8	%RH	27.8	Degree C	17.8	Dew_C	20.9	Wet_C
3	2	2019/10/3	13:31:16	812	CO2_ppm	54.8	%RH	27.8	Degree C	17.8	Dew_C	20.9	Wet_C
4	3	2019/10/3	13:31:18	811	CO2_ppm	54.7	%RH	27.8	Degree C	17.8	Dew_C	20.9	Wet_C
5	4	2019/10/3	13:31:20	811	CO2_ppm	54.6	%RH	27.8	Degree C	17.8	Dew_C	20.9	Wet_C
6	5	2019/10/3	13:31:22	812	CO2_ppm	54.5	%RH	27.8	Degree C	17.7	Dew_C	20.9	Wet_C
7	6	2019/10/3	13:31:24	812	CO2_ppm	54.2	%RH	27.9	Degree C	17.7	Dew_C	20.9	Wet_C
8	7	2019/10/3	13:31:26	812	CO2_ppm	54.2	%RH	27.9	Degree C	17.7	Dew_C	20.9	Wet_C
9	8	2019/10/3	13:31:28	813	CO2_ppm	53.7	%RH	27.8	Degree C	17.5	Dew_C	20.7	Wet_C
10	9	2019/10/3	13:31:30	813	CO2_ppm	53.5	%RH	27.8	Degree C	17.4	Dew_C	20.7	Wet_C
11	10	2019/10/3	13:31:32	814	CO2_ppm	53.6	%RH	27.9	Degree C	17.6	Dew_C	20.8	Wet_C
12	11	2019/10/3	13:31:34	814	CO2_ppm	53.7	%RH	27.9	Degree C	17.6	Dew_C	20.8	Wet_C
13	12	2019/10/3	13:31:36	814	CO2_ppm	53.7	%RH	27.9	Degree C	17.6	Dew_C	20.8	Wet_C
14	13	2019/10/3	13:31:38	814	CO2_ppm	53.7	%RH	27.9	Degree C	17.6	Dew_C	20.8	Wet_C
15	14	2019/10/3	13:31:40	814	CO2_ppm	53.7	%RH	27.9	Degree C	17.6	Dew_C	20.8	Wet_C
16	15	2019/10/3	13:31:42	815	CO2_ppm	53.7	%RH	27.9	Degree C	17.6	Dew_C	20.8	Wet_C
17	16	2019/10/3	13:31:44	815	CO2_ppm	53.7	%RH	27.9	Degree C	17.6	Dew_C	20.8	Wet_C
18	17	2019/10/3	13:31:46	815	CO2_ppm	53.6	%RH	27.9	Degree C	17.6	Dew_C	20.8	Wet_C
19	18	2019/10/3	13:31:48	816	CO2_ppm	53.6	%RH	27.9	Degree C	17.6	Dew_C	20.8	Wet_C
20	19	2019/10/3	13:31:50	817	CO2_ppm	53.4	%RH	28	Degree C	17.6	Dew_C	20.8	Wet_C

8. ADVANCED SETTING

Under do not execute the Datalogger function, press the " SET Button " (3-8, Fig. 1) continuously at least two seconds will enter the " Advanced Setting " mode. then press the " SET Button " (3-8, Fig. 1) once a while in sequence to select the eight main function, the display will show :

General advanced setting

- SD Format.....** SD memory card Format
- Date Time.....** Set clock time (Year/Month/Date, Hour/Minute/Second)
- Sample Time.....** Set sampling time (Hour/Minute/Second)
- Auto off** Auto power OFF management
- Beep Sound.....** Set beeper sound ON/OFF
- Decimal.....** Set SD card Decimal character
- Temp. unti.....** Set the Temp. unit to °C or °F
- Alarm.....** Set the alarm value
- Altitu.....** Set the altitu value
- Escape.....** Escape from the advanced setting

General advanced setting

8-1 SD memory card Format

When the lower display show " SD Format "

- 1) Use the " ▲ Button " (3-5, Fig. 1) or " ▼ Button " (3-6, Fig. 1) to select the upper value to " Yes " or " NO ".

Yes - Intend to format the SD memory card

NO - Not execute the SD memory card format

- 2) If select the upper to " Yes ", press the " Enter Button " (3-4, Fig. 1) once again, the Display will show text " Yes Enter " to confirm again, if make sure to do the SD memory card format, then press " Enter Button " once will format the SD memory clear all the existing data that already saving into the SD card.

8-2 Set clock time (Year/Month/Date, Hour/Minute/ Second)

When the upper display show " Date Time "

- 1) Display Screen appear flash place, Use the " ▲ Button " (3-5, Fig. 1) or " ▼ Button " (3-6, Fig. 1) to adjust the value (Setting start from Year value). After the desired value is set, press the " Enter Button " (3-4, Fig. 1) once will going to next value adjustment (for example, first setting value is Year then next to adjust Month, Date, Hour,Minute, Second value) Sequentially cycle.

Remark :

The adjusted value will be flashed.

- 2) After set all the time value (Year, Month, Date, Hour, Minute, Second), press the " SET Button " (3-8, Fig. 1) once will save the time value, then the screen will jump to " Sampling time " setting screen (Chapter 8-3).

Remark :

After the time value is setting, the internal clock will run precisely even Power off if the battery is under normal condition (No low battery power).

8-3 Set sampling time (Second)

When the upper display show " sampling time "

- 1) Use the " ▲ Button " (3-5, Fig. 1) or " ▼ Button " (3-6, Fig. 1) to adjust the value (Setting start from Hour value). After the desired value is set, press the " Enter Button " (3-4, Fig. 1) once will going to next value adjustment (for example, first setting value is 0,1,2,5,10,30,60,120,300,600,1800,3600 Second value).

Remark :

The adjusted value will be flashed.

- 2) After set all the sampling time value (Hour, Minute, Second), press the " SET Button " (3-8, Fig. 1) once will save the sampling value with default then the screen will jump to " Auto power OFF " setting screen (Chapter 8-4).

8-4 Auto power OFF management

When the lower display show " Auto off "

- 1) Use the " ▲ Button " (3-5, Fig. 1) or " ▼ Button " (3-6, Fig. 1) to select the upper value to " Yes " or " NO ".

Yes - Auto Power Off management will enable.

NO - Auto Power Off management will disable.

- 2) After select the upper text to " Yes " or " NO ", press the " Enter Button " (3-4, Fig. 1) will save the setting function with default.

8-5 Set beeper sound ON/OFF

When the lower display show " Beep Sound "

- 1) Use the " ▲ Button " (3-5, Fig. 1) or " ▼ Button " (3-6, Fig. 1) to select the upper value to " Yes " or " NO ".

Yes - Meter's beep sound will be ON with default.

**NO - Meter's beep sound will be OFF with default.
is power ON.**

- 2) After select the upper text to " Yes " or " NO ", press the " Enter Button " (3-4, Fig. 1) will save the setting function with default.

8-6 Decimal point of SD card setting

The numerical data structure of SD card is default used the "." as the decimal, for example "20.6" "1000.53". But in certain countries (Europe ...) is used the ",", as the decimal point, for example "20,6" "1000,53".

Under such situation, it should change the Decimal character at first.

When the lower display show " Decimal Dot "

- 1) Use the " ▲ Button " (3-5, Fig. 1) or " ▼ Button " (3-6, Fig. 1) to select the upper text to " USA " or " EURO ".

USA - Use "." as the Decimal point with default.

EURO - Use ",", as the Decimal point with default.

- 2) After select the upper text to " USA " or " EURO ", press the " Enter Button " (3-4, Fig. 1) will save the setting function with default.

8-7 Select the Temp. unit to °C or °F

When the lower display show " Temp. UNIT "

- 1) Use the " ▲ Button " (3-5, Fig. 1) or " ▼ Button " (3-6, Fig. 1) to select the upper Display text to " °C " or " °F ".

°C - Temperature unit is °C

°F - Temperature unit is °F

- 2) After Display unit is selected to " °C " or " °F ", press the " Enter Button " (3-4, Fig. 1) will save the setting function with default.

8-8 Set the alarm value

When the lower display show " Alarm "

- 1) Use the " ▲ Button " (3-5, Fig. 1) or " ▼ Button " (3-6, Fig. 1) to adjust the Alarm value.
- 2) After set the Alarm value, press the " Enter Button " (3-4, Fig. 1) will save the Alarm value with default.

8-9 Set the altitu value

When the lower display show " Altitu "

- 1) Appear Altitu text then press Enter will appear Meter, Use the " ▲ Button " (3-5, Fig. 1) or " ▼ Button " (3-6, Fig. 1) to select Meter or Feet then press Enter.
- 2) After use " ▲ " or " ▼ "Button set the Altitu value, press the " Enter Button " (3-4, Fig. 1) will save the Alarm value with default.

8-10 ESC

When the display show " ESC "

When the Display show the text " ESC ", then press the " SET Button " (3-8, Fig. 1) or " ESC Button " (3-3, Fig. 1) will finish the Advanced Setting procedures.


Remark :

During execute the " Advanced Setting " function, if press " ESC Button " (3-3, Fig. 1) will exit the " Advanced Setting " function, the LCD will return to normal screen.

9. POWER SUPPLY from DC ADAPTER

The meter also can supply the power supply from the DC 9V Power Adapter (optional). Insert the plug of Power Adapter into " DC 9V Power Adapter Input Socket " (3-16, Fig. 1). The meter will permanent power ON when use the DC ADAPTER power supply (The power Button function is disable).

10. BATTERY REPLACEMENT

- 1) When the left corner of LCD display show "  ", it is necessary to replace the battery. However, in-spec. measurement may still be made for several hours after low battery indicator appears before the instrument become inaccurate.
- 2) Loose the screws of the " Battery Cover " (3-11, Fig. 1) and take away the " Battery Cover " from the instrument and remove the battery.
- 3) Replace with DC 1.5 V battery (UM3, AA, Alkaline/heavy duty) x 6 PCs, and reinstate the cover.
- 4) Make sure the battery cover is secured after changing batteries.

11. SYSTEM RESET

If the meter happen the troubles such as :

CPU system is hold (for example, the key button can not be operated...).

Then make the system RESET will fix the problem.
The system RESET procedures will be either following method :

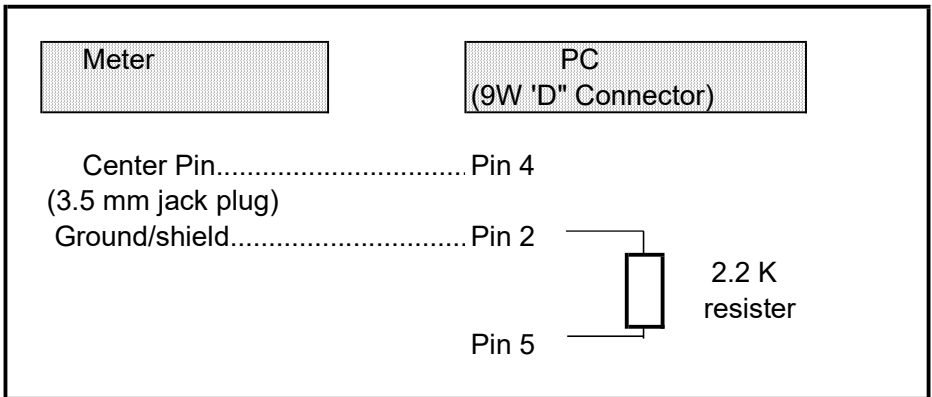
During the power on, use a pin to press the " Reset Button " (3-17, Fig. 1) once a while will reset the circuit system.

12. RS232 PC SERIAL INTERFACE

The instrument has RS232 PC serial interface via a 3.5 mm terminal (3-18, Fig. 1).

The data output is a 16 digit stream which can be utilized for user's specific application.

A RS232 lead with the following connection will be required to link the instrument with the PC serial port.



The 16 digits data stream will be displayed in the following format :

D15 D14 D13 D12 D11 D10 D9 D8 D7 D6 D5 D4 D3 D2 D1 D0

Each digit indicates the following status :

D15	Start Word		
D14	4		
D13	When send the %RH data = 1		
	When send the Temp./%RH. data = 2		
D12, D11	When send the Dew point data = 3		
	When send the Wet bulb data = 4		
	When send the CO2 data = 5		
	When send the Temp./CO2 data = 6		
D12, D11	Annunciator for Display		
	°C = 01	PPM_CO2 = G4	% RH = 04
	°F = 02	°C_DEW = G5	°F_DEW = G6
	°C_WET = G7	°F_WET = G8	
D10	Polarity 0 = Positive 1 = Negative		
D9	Decimal Point(DP), position from right to the left 0 = No DP, 1= 1 DP, 2 = 2 DP, 3 = 3 DP		
D8 to D1	Display reading, D1 = LSD, D8 = MSD For example : If the display reading is 1234, then D8 to D1 is : 00001234		
D0	End Word		

RS232 FORMAT : 9600, N, 8, 1

Baud rate	9600
Parity	No parity
Data bit no.	8 Data bits
Stop bit	1 Stop bit

13. PATENT

The meter (SD card structure) already get patent or patent pending in following countries :

Germany	Nr. 20 2008 016 337.4
JAPAN	3151214
TAIWAN	M 358970
	M 359043
CHINA	ZL 2008 2 0189918.5
	ZL 2008 2 0189917.0
USA	Patent pending