

*SD Card real time data recorder, Patent
CO₂, CO, O₂, Humidity, Temp. , 6 in 1*

AIR QUALITY METER

Model : AQ-9901SD

ISO-9001, CE, IEC1010



O₂ probe



CO probe



CO₂ probe



Humidity probe



Lutron

LUTRON ELECTRONIC

The Art of Measurement

SD card real time Data Recorder
CO₂, CO, O₂, Humidity, Dew point, Temp. 6 in 1

AIR QUALITY METER

Model : AQ-9901SD

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 3 probe's data (%RH/CO₂/O₂/Temp. or %RH/CO/CO₂/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 dioxide), CO (Carbon monoxide), O₂ (Oxygen in air), Humidity, temperature measurement.
- * CO₂ range : 0 to 4,000 ppm x 1 ppm.
- * O₂ range : 0 to 30.0 % x 0.1 %.
- * CO range : 0 to 1,000 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 / °F.
- * CO₂ sensor : NDIR, long term reliability.
- * CO, O₂ sensor : Galvanic cell type.
- * Humidity sensor : Precision capacitance sensor
- * Alarm setting with the beeper sound output.
- * Sampling time for data recorder is 2 seconds to 8 hours.
- * Complete set with 4 probes : CO₂/Temp. probe, O₂/Temp. probe, CO/Temp. probe, Humidity/Temp. probe, main meter and the hard carrying case.
- * Separate probe, easy for remote measurement.
- * Meter can cooperate with 2 GB to 16 GB SD card, SD card is optional.
- * RS232/USB computer interface.
- * Patented.

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GENERAL SPECIFICATIONS

Circuit	Custom one-chip of microprocessor LSI circuit.
Display	LCD size : 62 mm x 38 mm LCD with green backlight (ON/OFF).
Measurement	CO ₂ (Carbon dioxide) CO (Carbon monoxide) O ₂ (Oxygen in air) Humidity Dew point Temp., Wet bulb Temp. Temperature
Sensor structure	CO ₂ NDIR * Nondispersive infrared sensor
	Humidity Precision capacitance sensor
	O ₂ Galvanic cell type
	CO Galvanic cell type
Datalogger	Auto
Sampling Time	2 sec to 8 hour 59 min. 59 sec. @ Sampling time can set to 1 second, but memory data may loss.
Setting range	Manual Push the data logger button once will save data one time. @ Set the sampling time to 0 second. @ Manual mode, can also select the (1 to 99 position / Location) no.
Data error no.	0.1% of total saved data max.
Memory Card	SD memory card. 1 GB to 16 GB.
Advanced setting	* 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
@ main 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-C2 will get the USB plug.
Power Supply	* Alkaline or heavy duty DC 1.5 V battery (UM3, AA) x 6 PCs, or equivalent. * DC 5V adapter input. (AC/DC power adapter is optional)
Power Current	CO ₂ measurement Normal operation (w/o SD card save data and LCD Backlight is OFF) : Approx. DC 136.5 mA. When SD card save the data and LCD Backlight is OFF) : Approx. DC 166 mA.
Humidity measurement	Humidity measurement Normal operation (w/o SD card save data and LCD Backlight is OFF) : Approx. DC 10.5 mA. When SD card save the data and LCD Backlight is OFF) : Approx. DC 40 mA.
O ₂ or CO measurement	O ₂ or CO measurement Normal operation (w/o SD card save data and LCD Backlight is OFF) : Approx. DC 12.5 mA. When SD card save the data and LCD Backlight is OFF) : Approx. DC 42.5 mA.
	* If LCD backlight on, the power consumption will increase approx. 12 mA.
Operating Temperature	0 to 50 °C. (32 to 122 °F).
Operating Humidity	Less than 80% R.H.
Weight	350 g/0.77 LB.

* Appearance and specifications listed in this brochure are subject to change without notice.

Dimension	Meter	177 x 68 x 45 mm
	Humidity probe	197 mm in length.
	CO ₂ probe	190 x 38 x 28 mm
	O ₂ probe	150 x 38 x 38 mm
Accessories Included	CO probe	150 x 38 x 38 mm
	Instruction manual	1 PC
	Hard carrying case, CA-08	1 PC
	CO ₂ probe	1 PC
	Humidity probe	1 PC
	O ₂ probe	1 PC
Optional Accessories	SD memory card (2 GB)	
	AC to DC 9V adapter.	
	USB cable, USB-01.	
	RS232 cable, UPCC-02.	
	Data Acquisition software, SW-US01-WIN.	

ELECTRICAL SPECIFICATIONS (23 ± 5 °C)

CO₂ (Carbon dioxide)

CO ₂ (Carbon dioxide)	Range	0 to 4,000 ppm
	Resolution	1 ppm
	Accuracy	± 40 ppm * ≤ 1,000 ppm ± 5 % of reading * > 1,000 ppm ≤ 3,000 ppm. ± 250 ppm typically * > 3,000 ppm, reference only
	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.

CO (Carbon dioxide)

CO * Carbon monoxide	Range	0 to 1,000 ppm
	Resolution	1 ppm
	Accuracy	± (5% + 2 ppm)
	Response time *	< 30 seconds
	Repeatability	< 2%
	Zero drift in long term	< 5 ppm
	Sensitivity	< 5% per year
	drift	
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.
		* The response time value is specified to reach the 90% reading value.

O₂ (Air oxygen)

O ₂ * Air oxygen	Range	0 to 30 %O ₂ .
	Resolution	0.1 %O ₂ .
	Accuracy	± (1 % reading + 0.2 % O ₂). @ After calibration
	Response time	15 seconds. @ 1.80
	Overload protection	100 %O ₂ .
	Environment pressure range	0.9 to 1.1 atmosphere.
	Expected life time	≥ 2 years.
	Alarm	If the measurement Air oxygen value < 18.0 %O ₂ , the buzzer will sound for warning.
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). ± 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 Wet bulb accuracy is sum accuracy value of Humidity & Temperature measurement.		