

SAQ-210_SLM

Smart Outdoor Sound Level Meter with Air Quality Monitoring

- ✓ Multi-Sensor (Noise, PM_{2.5}, tVOC, Temp/RH, CO, NO₂,...)
- ✓ Smart Device Management (Real-time data, Power management,...)
- ✓ Optional Accessory (Solar solution, Wind speed & direction,...)



Features

- LTE compliant, optional upload frequency 1 min or 5sec(per sec. data); or Modbus RS485
- A-weighted(dBA) and Z-weighted(dBZ) included
- Optional multi-sensing solution such as PM_{2.5}, tVOC, Temp/RH and CO, NO₂, O₃, SO₂, NH₃,...
- AC power-in, 100~240VAC
- Robust shell suits for outdoor usage
- All in one solution(solar system, wind speed & direction,...)

SAQ-210_SLM is designed to monitoring environmental sound level with A and Z frequency weighting, device integrated with air quality sensor PM_{2.5}, tVOC, temperature and relative humidity and optional gas sensors Carbon Monoxide, Nitrogen Dioxide, Ozone , Ammonia, Sulfur Dioxide.

It is integrated wireless technology, sensor knowhow and high-performance MCU solution for various IoT markets usage. With calibrated and compensated multi-sensing solution integration, the data is ready for use.

It is perfect for monitoring outdoor sound level and air quality anywhere.

RF Specifications

Model name	SAQ-210_SLM		
Wireless	LTE		
Standard/ Protocol	Up to non-CA CAT1 with 1.4 to 20 MHz RF bandwidth		
Frequency	FDD-LTE	WCDMA	GSM
	B1/B3/B7/B8/B20/B28A	B1/ B8	B3/ B8
Sensitivity	B1: -101.5dBm (10M) B3: -101.5dBm (10M) B7: -99.5dBm (10M) B8: -101dBm (10M) B20: -102.5dBm (10M) B28: -102dBm (10M)	B1: -110dBm B8: -110.5dBm	-109dBm
Data rate	Max 10 Mbps(DL) Max 5 Mbps (UL)	Max 384 Kbps (DL) Max 384 Kbps (UL)	Max 107 Kbps (DL) Max 85.6 Kbps (UL)

PM Sensor Specifications

Sensing Item	PM _{2.5}	tVOC	Temp. / RH
Principle	OPC	CMOS	Band gap sensor/ Capacitive measurement
Range	0~1000 µg/m	0~60000ppb	Temp: -40~+125°C Humidity: 0~100 %RH
Response time	< 10 sec	-	Temp: > 2sec. at τ63% Humidity:<8sec.at τ63%
Accuracy(at 25°C)	±10 (0~100µg/m3) / ±10%(100~1000µg/m3)	-	Temperature: ±1°C Humidity: ±5%RH
Repeatability	-	-	Temp:±0.24°C Humidity:±0.25%RH
Long Term Output Drift	-	-	Temp: < 0.03°C/yr Humidity:<0.25%RH/yr
Resolution	1 µg/m ³	-	Temp:0.01°C Humidity:0.01%RH

Sound Level Meter Specifications

Range	30~130 dB
Freq. Fange	20Hz~20kHz
Resolution	0.1dB
Accuracy	≤ ±1.5dB
Freq. Weighting	dBA, dBZ
Microphone Type	MEMS
Temperature	-10~+60 °C

Optional Gas Sensor

Sensor Operation	Principle	Range	Response time	Accuracy (at 25°C)	Repeatability	Long Term Output Drift	Resolution
Carbon Monoxide (CO)	Electrochemical	0~40 ppm	< 60 sec. at τ_{90}	± 0.5 ppm / $\pm 5\%$	< $\pm 5\%$ CO equivalent	< 5% (per year)	< 0.5 ppm typical
Nitrogen Dioxide (NO₂)	Electrochemical	0~400 ppb	< 60 sec. at τ_{90}	± 50 ppb / $\pm 10\%$	< $\pm 5\%$ NO ₂ equivalent	< 20% (per year)	< 50 ppb typical
Ozone (O₃)	Electrochemical	0~350 ppb	< 60 sec. at τ_{90}	± 50 ppb $\pm 10\%$	< $\pm 5\%$ O ₃ equivalent	< 20% (per year)	< 50 ppb typical
Ammonia(NH₃)	Electrochemical	0~100 ppm	< 60 sec. at τ_{90}	± 2 ppm $\pm 10\%$	< $\pm 5\%$ NH ₃ equivalent	< 20% (per year)	< 1 ppm typical
Sulfur Dioxide(SO₂)	Electrochemical	0~400 ppb	< 60 sec. at τ_{90}	± 50 ppb $\pm 10\%$	< $\pm 5\%$ SO ₂ equivalent	< 15% (per year)	< 50 ppb typical
Hydrogen Sulfide(H₂S)	Electrochemical	0~2.00 ppm	< 60 sec. at τ_{90}	± 50 ppb $\pm 10\%$	< $\pm 5\%$ H ₂ S equivalent	< 20% (per year)	< 50 ppb typical

Optional information

• Solar Specifications

Solar Panel		Battery	
Output Power	30 W	Number of cells	16 cell (2S8P)
Max power voltage	17.3V	Battery Max Voltage	8.4 V
Max power current	1.78A	Standard Discharge Capacity	26.4 AH
Dimensions	345 x380 x35 mm	Increment Type(External Battery Box)	
Weight	3kg	Number of cells	32 cell (2S16P)
		Battery Max Voltage	8.4 V
		Standard Discharge Capacity	52.8 AH

• Wind Speed & Direction

DAVIS	Range	Accuracy
Speed	0 to 200 mph	± 2 mph or $\pm 5\%$
Direction	360°	$\pm 3^\circ$

Operational Specifications

System Operation	
Operating Temperature	-10~+55 °C
Operating Humidity	15~85%RH, Non-condensing
Storage temperature	-40 ~ 85°C.
Warm-up time	≤ 1 min. (at full specs ≤ 15 minutes)
Power supply	AC power-in, 110V or 220V
Power consumption	3.5 W
Installation	wall-mount and pole-mount
Dimension (cm)	30(L) x 27(W) x 18(H)
Weight (kg)	3kg