

SAQ-210plus

Outdoor Air Quality Monitoring Device -Multi-sensing solution

- ✓ Multi-Sensor(PM_{2.5}, tVOC, NO_x, Temp/RH, CO, O₃ ...)
- ✓ Smart Device Management (Real-time data, Power management...)
- ✓ Optional Accessory (Solar solution, Wind speed & direction, Air sampling canister ...)



Features

- Supports LTE wireless or RS-485/Ethernet wired transmission
- Capable of monitoring extremely low concentrations of PM_{2.5} (0~1000 µg/m³)
- Integrated with calibrated and compensated PM_{2.5}, VOC, NO_x and Temp./RH.
- Multi-Sensing solutions, such as CO, O₃, H₂S, NH₃, ...
- AC power in, 100~240 VAC
- Robust shell passed salt spary test perfect for outdoor usage
- Certified for type approval and IoT security

SAQ-210plus is designed to measure air quality at very low concentration of PM_{2.5}, tVOC, temperature, humidity and optional gas sensors, with calibrated and compensated multi-sensing solution integration, the data is ready for use.

All SAQ-series integrated high-performance MCU and wireless technology continuous uploading real-time data and the device is managed and maintained by smart remote management system, it is perfect for monitoring outdoor air quality anywhere.

RF Specifications

Model name	SAQ-Series		
Transmission types	LTE wireless		
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)

Sensor Specifications

	PM _{2.5}	VOC & NO _x	Temp./RH
Principle	OPC	CMOS	Band gap sensor / Capacitive measurement
Range	0~1000 µg/m ³	1~500 (VOC & NO _x Index points)	Temp: -40~+125°C Humidity: 0~100 %RH
Response Time (@25°C,50%RH,τ63%)	< 10 sec	<10 sec (τ63) <30 sec (τ90)	Temp: <60 sec. Humidity: <20 sec.
Accuracy (@25°C,30~70%RH)	±5% (0~100µg/m ³) / ±10% (100~1000µg/m ³)	-	Temp: ±0.7°C Humidity: ±6%RH
Repeatability (@25°C,50%RH,τ63%)	-	<±5 VOC Index points or <±5% <±10 NO _x Index points or <±10%	Temp: ±0.1°C Humidity: ±1%RH
Longterm Output Drift	±1.25µg/m ³ /year (0~100µg/m ³) ±1.25% m.v./year (100~1000µg/m ³)	-	Temp: < 0.03°C /yr Humidity: < 0.25%RH/yr
Resolution	1 µg/m ³	-	Temp: 0.01°C Humidity: 0.01%RH

Optional Gas Sensor

	CO	NO ₂	O ₃	NH ₃	SO ₂	H ₂ S
Principle	Electrochemical	Electrochemical	Electrochemical	Electrochemical	Electrochemical	Electrochemical
Range	0~20 ppm	0~2 ppm	0~1.5 ppm	0~8 ppm	0~1 ppm	0~7 ppm
Response Time	< 30 sec. at τ90	< 80 sec. at τ90	< 80 sec. at τ90	< 40 sec. at τ90	< 60 sec. at τ90	< 60 sec. at τ90
Accuracy (at25°C)	±0.1 ppm in 10 ppm	±10 ppb in 100 ppb	±10 ppb in 100 ppb	±0.25 ppm in 2.5 ppm	±15 ppb in 100 ppb	±0.1 ppm in 2.5 ppm
Repeatability	< ±5% CO equivalent	< ±5% NO ₂ equivalent	< ±5% O ₃ equivalent	< ±5% NH ₃ equivalent	< ±5% SO ₂ equivalent	< ±5% H ₂ S equivalent
Longterm Output Drift	±0.1 ppm/yr (zero drift)	±20 ppb/yr (zero drift)	±20 ppb/yr (zero drift)	< 20% /yr	±20 ppb/yr (zero drift)	±0.1ppm/yr (zero drift)
Resolution	1 ppb	1 ppb	1 ppb	1 ppb	1 ppb	1 ppb
Operating Life	24 months	18 months	18 months	18 months	18 months	18 months

* Accuracy cannot be guaranteed beyond its operating life, so calibration every six months is recommended. If visibly damaged, repair or replace it immediately to ensure proper function.

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)	3

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 ±5%
Direction	360°	±3°