

ES80A-S10

ONLINE AIR QUALITY MONITORING SYSTEM

Multi-gas • Particulate • Weather Monitoring

Safewill
INDUSTRIAL
ENVIRONMENTAL
MONITORING

PRODUCT OVERVIEW

The ES80A-S10 is a compact, modular monitoring station designed for ambient air quality networks and fugitive-emission monitoring. It integrates active-sampling gas sensors, a laser-scattering particulate sensor and an ultrasonic weather station. With wireless connectivity and a cloud platform, it supports continuous monitoring and remote data management.



MULTI-PARAMETER	ACTIVE SAMPLING	WEATHER READY	REMOTE ACCESS
Up to 10 gas types, PM and weather data.	Independent sampling paths for gases and particles.	Ultrasonic wind measurement and outdoor enclosure.	4G/LTE, cloud dashboard and mobile access.

MONITORING PARAMETERS

Category	Parameters
Particulate Matter	PM2.5, PM10, TSP
Gas Options (up To 10)	SO2, NO2, O2, CO, H2S, CH3SH, TVOC, NH3, CO2, HCL, etc.
Core Weather Sensor	Wind Speed, Wind Direction, Temperature, Relative Humidity, Atmospheric Pressure
Optional Weather Sensor	Noise, Illuminance, Solar Radiation, Rainfall

Gas types and ranges can be configured to customer requirements. Optional weather parameters depend on configuration.

PARTICULATE MATTER

Parameters	Principle	Range	Resolution
PM2.5 / PM10 / TSP	Laser Scattering	0-5,000 mg/m³	1 mg/m³

TECHNICAL SPECIFICATIONS

Parameters	Principle	Range	Resolution	T90
SO2	Electrochemical	0-5 ppm	1 ppb	<120 s
NO2	Electrochemical	0-5 ppm	1 ppb	<120 s
O2	Electrochemical	0-5 ppm	1 ppb	<120 s
CO	Electrochemical	0-10 ppm	0.015 ppm	<120 s
H2S	Electrochemical	0-10 ppm	0.002 ppm	<120 s
CO2	NDIR	0-5000 ppm	1 ppm	<120 s
NH3	Electrochemical	0-10 ppm	0.001 ppm	<120 s
HCL	Electrochemical	0-100 ppm	0.001 ppm	<120 s
CH3SH	Electrochemical	0-10 ppm	0.001 ppm	<120 s
TVOC	PID	0-10 ppm	0.001 ppm	<120 s

Gas types and measurement ranges are customizable.

WEATHER MEASUREMENT

Parameters	Principle	Range	Resolution
Wind Speed	0-40 M/s	± (0.5 + 2% Fs) M/s	0.1 M/s
Wind Direction	0-360°	± 3°	1°
Temperature	-30 To +60 °c	± 0.5 °c	0.1 °c
Relative Humidity	0-99% Rh	± 3% Rh	0.1% Rh
Atmospheric Pressure	0-120 Kpa	± 0.1 Kpa	0.1 Kpa
Noise	30-120 dB	± 3 dB	1 dB
Illuminance	0-200,000 Lux	± 5%	1 Lux
Solar Radiation	0-1,800 W/m²	± 3%	1 W/m²
Optical Rainfall	Max. Instantaneous 24 Mm/min	± 3%	0.1 Mm

Languages: Arabic, French, Portuguese, Spanish, Russian, English, Chinese

GENERAL SPECIFICATIONS

Item	Specification
Enclosure	Galvanized steel with outdoor UV-resistant powder coating
Protection Rating	IP55 (monitoring station) / IP54 (weather sensor)
Display	4.3-inch TFT color touchscreen
Operating Temperature	-30 to +60 °C
Operating Humidity	10–95% RH, non-condensing
Atmospheric Pressure	86–106 kPa
Power Supply	85–264 VAC, 47–63 Hz; optional solar power + 12 V battery
Power Consumption	≤40 W (including heater/dehumidifier at full load)
Wired Interfaces	RS485 / TTL
Wireless Communication	4G/LTE
Protocols	Modbus RTU; China environmental protection HJ212-2017
Local Data Storage	≥1 year at a sampling interval of 1 minute
Mounting	Pole mounting with U-bolts or flange-mounted pole
Dimensions	545 × 527 × 185 mm
Weight	9.5 kg

CLOUD PLATFORM

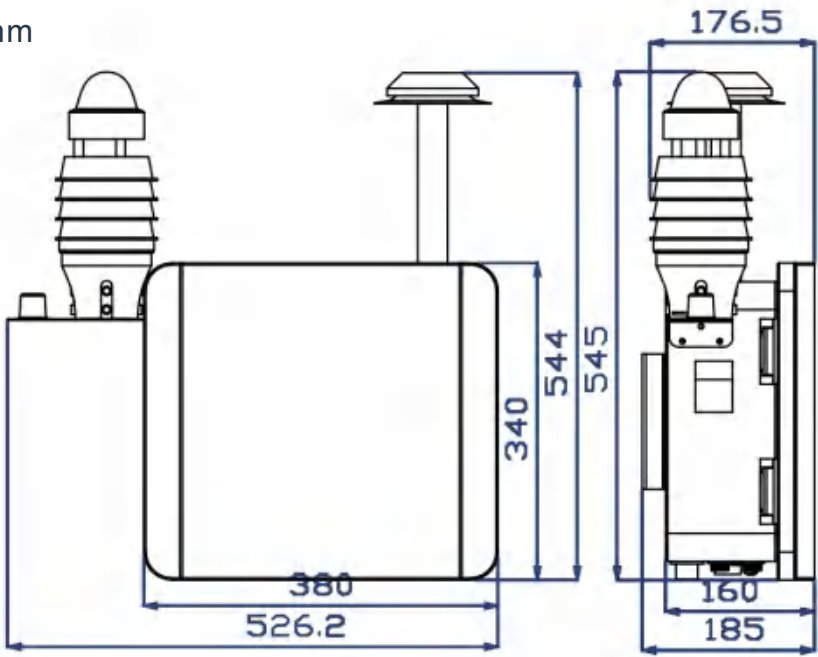
Gis Overview	Live Monitoring	Reports & Analysis	Device Management
Map-based station locations and AQI status.	Real-time values, trends and historical comparison.	Automatic daily, monthly and annual reports; wind-rose and pollution-source analysis.	Online status, power, signal and remote parameter configuration.

TYPICAL APPLICATIONS



DIMENSIONAL DRAWING

Unite: mm



KEY FEATURES

- 1. **10-Parameter Display** – Displays 10 parameters simultaneously with real-time updates.
- 2. **Audible Alarm** – Built-in buzzer alerts when concentrations exceed preset limits.
- 3. **AQI Classification** – Built-in national standard AQI algorithm for air quality grading.
- 4. **Auto Calibration** – Automatic calibration at startup after sensor warm-up.
- 5. **Manual Zero Calibration** – Helps maintain long-term measurement accuracy.
- 6. **Flexible Installation** – Wall-mounted or desktop placement.
- 7. **Low Power Consumption** – Designed for extended operation and routine inspections.
- 8. **Easy Operation** – Plug-and-play design with no professional setup required.