

OPERATE IN THE **SUCCESS ZONE**



SGSSMARTSENSE



Real-Time Indoor Air Quality Monitoring

SGS



VOLATILE ORGANIC COMPOUNDS



PARTICULATES
(PM1 – PM2.5 – PM10)



DETECTABLE GASES
(NO – CO – CO₂ – NO₂ – SO₂ – O₃ – H₂S)



TEMPERATURE



RELATIVE HUMIDITY



ATMOSPHERIC PRESSURE



WIND SPEED DIRECTION



REPLACEABLE SENSOR CARTRIDGES



REMOTE DATA REVIEW



SOUND LEVEL METER



OPERATE IN THE SUCCESS ZONE – SAMPLE THERE WHEN YOU ARE HERE

FEATURES

WHY SGS SMARTSENSE?

Around the world, people are deploying SGS SmartSense for:

- Investigating known or suspected air quality issues, in both indoor and ambient environments, including:
 - Vapour intrusion studies
 - Fenceline monitoring studies
- Supplementing traditional and regulatory defined monitoring methods with continuous monitoring data of site conditions
- Remotely and automatically capturing physical samples for lab analysis based on continuous data trends, when combined with the SGS SmartSampler
- Providing a hyper-local network of monitoring points across an urban area for real-time assessments of air quality within Smart Cities programmes

KEY FEATURES

- Continuous monitoring with readings every minute
- Interchangeable parameter configuration – unlimited selection of air quality parameters in addition to temperature, humidity and pressure (standard sensor board accommodates up to 6 air quality sensors, expansion board allows limitless configurations)
- Ability to integrate SGS SmartSense data into third-party applications with API data feed
- Capture validation samples for accredited lab analysis with the SGS SmartSampler, an integrated sample initiation system

REMOTE MONITORING AND SAMPLING IN REAL TIME, FROM ANYWHERE

CLOUD PLATFORM FEATURES

- Access, analyze, download sensor data at anytime, anywhere in the world via any connected device
- View device locations on a map and see the latest real-time data feeds via SmartSense LiveView
- Customize sensor alarm thresholds to be notified via text and email
- Take autonomous grab samples when paired with the SGS SmartSampler

SENSOR SPECIFICATIONS¹

PARAMETER	DISPLAY UNIT	MEASUREMENT RANGE	ACCURACY	SENSOR TYPE
Temperature	°F or °C	-20 – 130°F	+/- .3 degrees	Thermal Substrate
Humidity	%	0 – 99%	0.04%	Conductivity
Pressure	hPa	950 – 1050 hPa	+/- 1 hPa	Silicon Pressure
Ammonia	ppm	0 – 100 ppm	+/- 0.5 ppm	Electrochemical
Nitrogen Dioxide	ppb or µg/m ³	0 – 5 ppm	+/- 50 ppb	Electrochemical
Sulphur Dioxide	ppb or µg/m ³	0 – 5 ppm	+/- 50 ppb	Electrochemical
Ozone	ppb or µg/m ³	0 – 5 ppm	+/- 50 ppb	Electrochemical
Carbon Dioxide	ppm	0 – 5000 ppm	+/- 40 ppm	Nondispersive Infrared
Carbon Monoxide	ppm	0 – 50 ppm	+/- 100 ppb	Electrochemical
Hydrogen Sulphide	ppb or µg/m ³	0 – 20 ppm	+/- 50 ppb	Electrochemical
Nitric Oxide (NO)	ppb or µg/m ³	0 – 5 ppm	+/- 15 ppb	Electrochemical
Hydrogen (H ₂)	ppb or µg/m ³	0 – 150 ppm	+/- 600 ppb	Electrochemical
Hydrogen Peroxide (H ₂ O ₂)	ppm	0 – 3 ppm	Inquire	Electrochemical
Volatile Organic Compounds (VOC) eq. isobutylene	ppb or µg/m ³	0 – 2000 ppm	+/- 400 ppb	Photoionization Detector (10.6 eV)
Particulates (PM1, PM2.5, PM10)	µg/m ³	0 – 2000 µg/m ³	+/- 4 µg/m ³	Optical

1. Specifications are guaranteed provided that sensors are calibrated per manufacturer's recommendations.

POWER OPTIONS

- Mains power (100-240 V 50/60 Hz)
- External battery (supports any voltage)
- Solar panel

COMMUNICATIONS

- Cellular SIM module
- Wi-Fi
- Ethernet
- Other
- External 3G/4G hotspot
- IoT networks (LoRaWan, Zigbee, Sigfox, etc.)

LIVE VIEW

SGS LIVE VIEW WITH SMARTSENSE: THE VISION OF DATA

SGS Live View is an intuitive, SQL-compliant web based relational database application designed for environmental professionals and managers who need to assess and manage streaming real time environmental conditions, analytical data at one or more sites. SGS Live View software helps you organize and assemble both historical and current data streams into a single, accurate data set. Once the data passes our electronic verification process and is imported, users can view, query or import/export their data from various physical locations. With your existing internet access, a database filled with accurate, up-to-date environmental data can be shared among your organizations users no matter where they are located or what hardware/software configuration they are using. Live View has the unique capability to efficiently manage up to four levels of analytical data quality to obtain the most reliable data.

SMARTSENSE - LIVE VIEW COMPATIBILITY GIVES YOU THE LONG VIEW

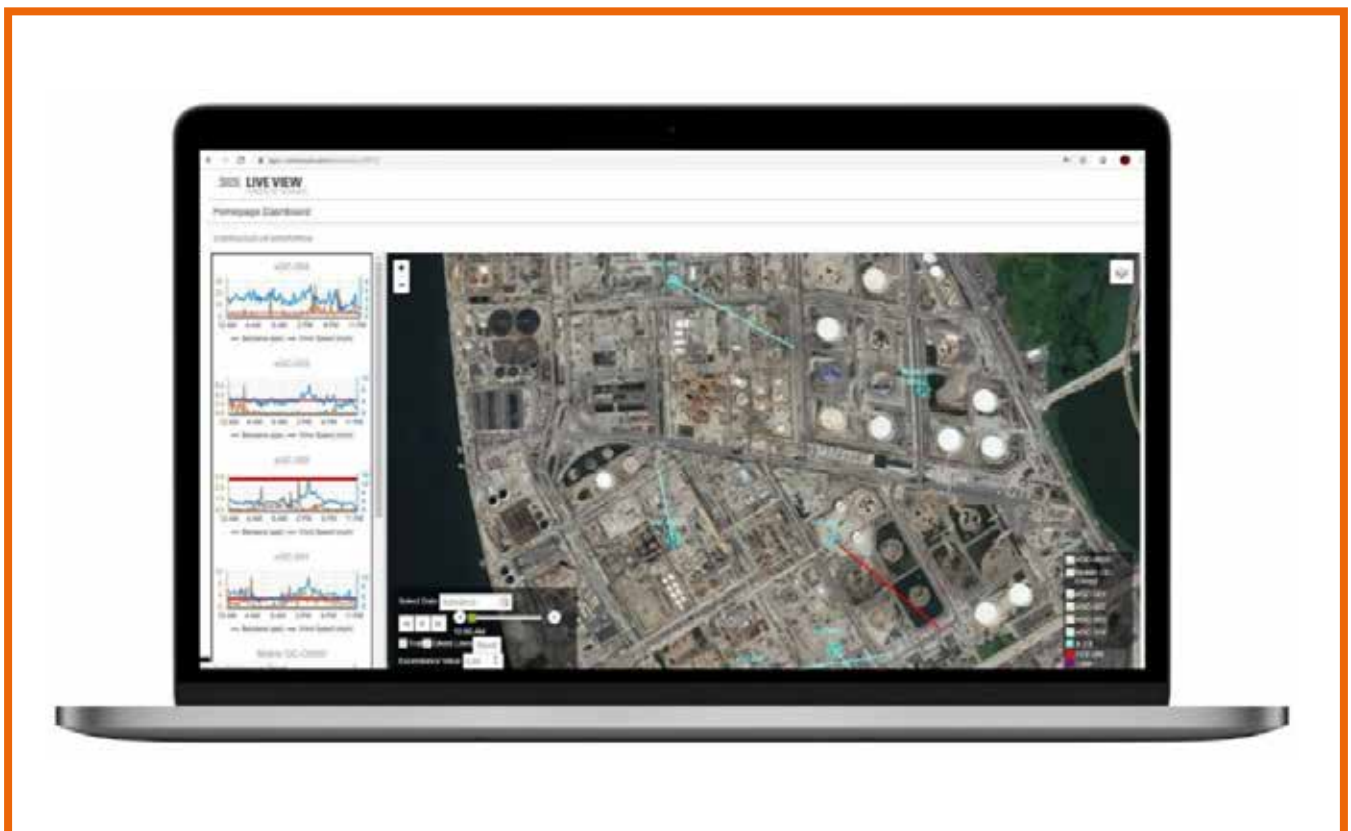
SmartSense is easy to install and connects automatically to Live View to view your data with drill-down features so you can see exactly what's going on at each sensor, location or region. Easily get air quality profiles, downloads, warnings and reports. It can remotely or automatically use pre-set triggering concentrations, actuate switches that control sampling pumps, whole air solenoid valves and other electrical devices. And you can manage it all from any connected computer.

SGS LIVE VIEW IS THE BEST FIT FOR YOUR APPLICATION IF YOU:

- Need a single location for real time and collected environmental data
- Want a single view of environmental status of multiple locations and monitors
- Access public environmental data in conjunction with your own private data (comparative analysis)
- Looking at manually recording or datalogging multiple devices in multiple locations for extended time periods (savings can be extreme)
- Want Quality Checks applied to data to ensure accuracy and validity or sensor failure
- Desire the largest third-party certification and testing company in the world on your team.

SGS LIVE VIEW PROVIDES:

- Text and email alerts for data set point exceedances
- Faster application deployment and trouble-free upgrades
- Access from anywhere, anytime with just an internet connection
- Enhanced security and redundancy
- Best of all, SGS Live View can be run from virtually any operating system platform (i.e., Windows, Macintosh, Unix, etc.) and keep all of your critical environmental data literally a "click" away.



SGS SMARTSENSE AND SGS SMARTSAMPLER

SGS SmartSense can be combined with the SGS SmartSampler to capture validation samples for laboratory analysis.

Sampling is initiated automatically, based on data-driven air quality events (e.g. above threshold concentrations), or it can be triggered remotely by an engineer.

SYSTEM FEATURES

- SGS SmartSampler can be configured to:
 - Collect an instantaneous air sample with a Summa Canister
 - Initiate a pump system to collect a time-delineated sample
- Trigger levels can be defined for multiple parameters and can be duration weighted – e.g. trigger a sample when the concentration exceeds 1000 ppm for 30 minutes
- Samples can be initiated:
 - Automatically based on pre-defined trigger criteria
 - After client authorisation – the system sends an e-mail to the client when exceedance criteria are met, client logs into dashboard, reviews live data and can then remotely trigger the sample collection
- Samples can be retrieved by a local technician, with the replacement of new sampling media, and the samples are dispatched to an SGS laboratory under a standard CoC



SGS SMARTSENSE CASE STUDY

Investigating potential vapour intrusion.

ISSUE

Complaints of hydrocarbon odors in gas station shop building, with toilet plumbing identified as a potential pathway. Previous on-site inspections failed to align with an odor event, and installation of Photoionization Detector (PID) could not distinguish between possible vapor events and regular cleaning schedule.

SOLUTION

Installation of SGS SmartSense unit with SGS SmartSampler for one month. VOC trigger alert set at 600 ppb to send e-mail alert to an engineer who reviews data online, confirms with shop staff that cleaning is not in progress and can then remotely fire a validation sample.

RESULT

Three validation samples collected for lab analysis during the month, and they all clearly indicate that hydrocarbon related vapors are present. Confirmation that vapor intrusion is occurring and site progressed to a remedial action plan.



OPERATE IN THE SUCCESS ZONE

OUR VALUE TO SOCIETY

Responding to global drivers, our services add significant value to our customers and stakeholders, so they can add exponential value to theirs. We do this by empowering smarter long-term decision-making throughout entire supply chains.

Present in every region around the globe, we provide innovative solutions for every part of the environmental industry. Our dedicated network of global and local offices is highly flexible and focused on meeting our customers' needs irrespective of the scale of the project.

We have won a number of awards for our own sustainability performance, as we try to lead by example and demonstrate our deeply held belief that business success and creating value to society go hand-in-hand.

We can help you achieve the same double positive transformation, giving you a competitive advantage and helping you get, and stay, in the Success Zone.

**TO FIND OUT MORE ABOUT SGS
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WWW.SGSGALSON.COM/SMART-SENSE**



CLOSURE

INCIDENT

RISK

COMPLIANCE

SUCCESS ZONE

OUR SMARTSENSE
SOLUTIONS HELP
**YOUR BUSINESS,
CUSTOMERS
AND EMPLOYEES**
TO OPERATE,
AND STAY, IN THE
SUCCESS ZONE.

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WHEN YOU NEED TO BE SURE

SGS