OPERATE IN THE **SUCCESS ZONE**

SGSSMARTSENSE

SGS

VOLATILE ORGANIC
COMPOUNDS

PARTICULATES
(PM1 – PM2.5 – PM10)

DETECTABLE GASES
$(NO - CO - CO_2 -$
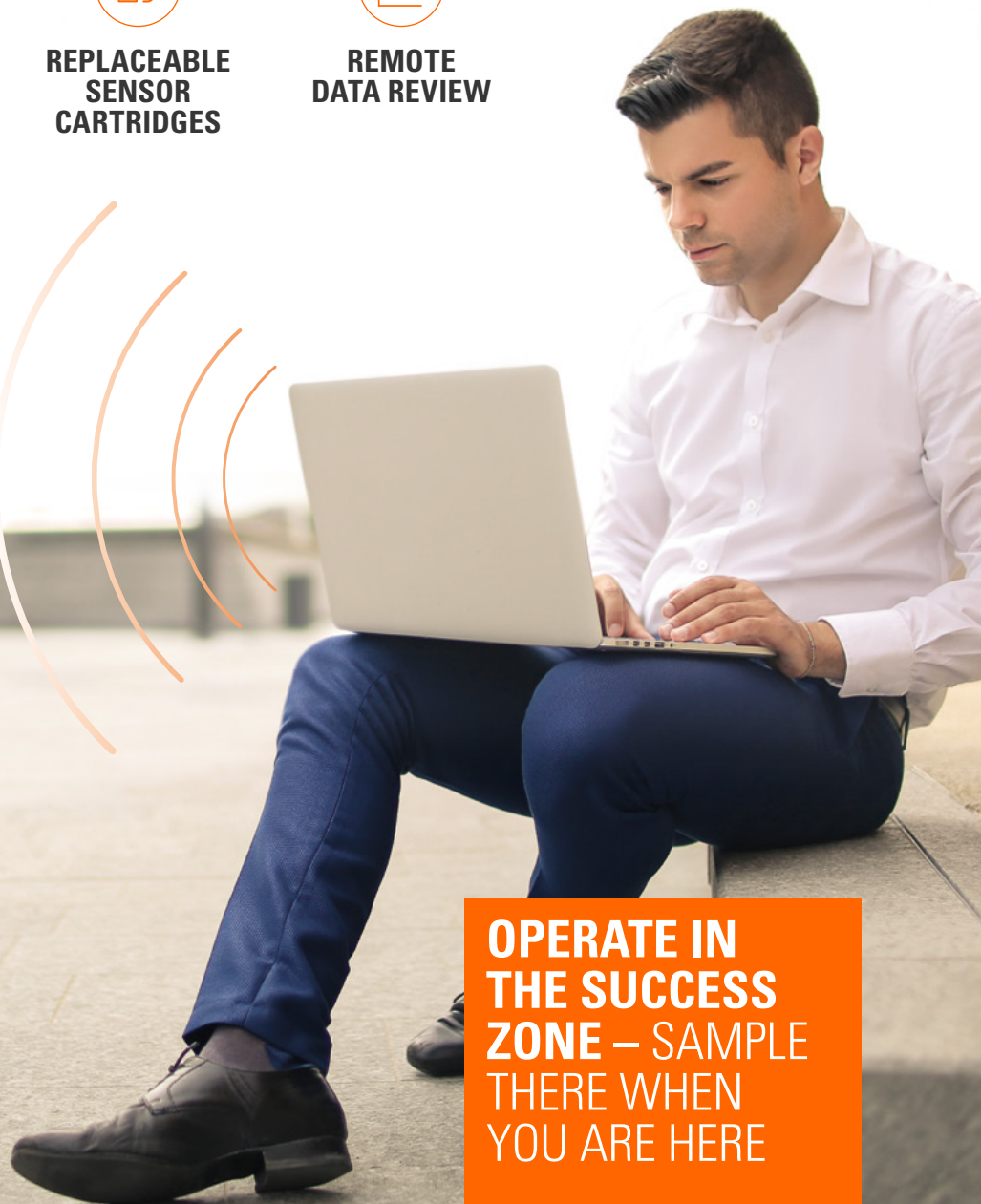$NO_2 - SO_2 - O_3 - H_2S)$

SGSSMARTSENSE

TEMPERATURE

RELATIVE
HUMIDITY

ATMOSPHERIC
PRESSURE

REPLACEABLE
SENSOR
CARTRIDGES

REMOTE
DATA REVIEW

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

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 – select up to six air quality parameters in addition to temperature, humidity and pressure
- 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, trend, compare and export device data via a dedicated SGS SmartSense web dashboard
- View device locations on a map and see the latest real-time data feeds
- Create personal e-mail and text message notifications to flag when particular devices exceed certain air quality parameter thresholds
- Monitor and activate sample collection when paired with the SGS SmartSampler

SENSOR SPECIFICATIONS[1]

PARAMETER	DISPLAY UNIT	MEASUREMENT RANGE	ACCURACY	SENSOR TYPE
Temperature	°F or °C	0 – 120°F	0.02°F	–
Humidity	%	0 – 100	0.04%	–
Pressure	hPa	950 – 1050 hPA	1 hPa	–
Particulates (PM1, PM2.5, PM10)	$\mu g/m^3$	0 – 3000 µg/m3	4 $\mu g/m^3$	Optical
Nitrogen Dioxide	ppb or $\mu g/m^3$	0 – 5 ppm	10 ppb	Electrochemical
Sulphur Dioxide	ppb or $\mu g/m^3$	0 – 5 ppm	10 ppb	Electrochemical
Ozone	ppb or $\mu g/m^3$	0 – 5 ppm	6 ppb	Electrochemical
Carbon Dioxide	ppm	0 – 5000 ppm	40 ppb	Nondispersive Infrared
Carbon Monoxide	ppm	0 – 50 ppm	10 ppb	Electrochemical
Hydrogen Sulphide	ppb or $\mu g/m^3$	0 – 20 ppm	50 ppb	Electrochemical
Nitric Oxide (NO)	ppb or $\mu g/m^3$	0 – 5 ppm	10 ppb	Electrochemical
Hydrogen (H_2)	ppb or $\mu g/m^3$	0 – 150 ppm	600 ppb	Electrochemical
Volatile Organic Compounds (VOC) eq. isobutylene	ppb or $\mu g/m^3$	0 – 20 ppm	20 ppb	Photoionization Detector (10.6 eV)

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

POWER OPTIONS

- Mains power supply (100-240 V 50/60 Hz)
- External battery
- Solar panel
- Street light columns

COMMUNICATIONS

- Ethernet
- Direct Wi-Fi connection
- Internal cellular SIM module
- External 3G/4G hotspot
- IoT networks (LoRaWan, Zigbee, Sigfox, etc.)

CLOSURE

INCIDENT

RISK

COMPLIANCE

SUCCESS ZONE

OUR EHS
SOLUTIONS HELP
DECISION-MAKERS
**ADD LONG-TERM
VALUE – NOW.**
SO WE CAN ALL
**FOCUS ON BIG
DREAMS, CRAZY
AMBITIONS AND
GRAND PLANS
FOR THE FUTURE.**

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 odours in
gas station shop building, with toilet
plumbing identified as a potential
pathway. Previous on-site inspections
failed to align with an odour event, and
installation of Photoionisation Detector
(PID) could not distinguish between
possible vapour 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 vapours are
present. Confirmation that vapour
intrusion is occurring and site
progressed to a remedial action plan.

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 ENVIRONMENT HEALTH AND SAFETY SERVICES CONTACT EHS@SGS.COM OR VISIT WWW.SGS.COM/EN/ENVIRONMENT

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SOLUTIONS HELP
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WHEN YOU NEED TO BE SURE

SGS