gb services

watchgas detection

SST RANGE™

SST1: Single gas detector

The *new* standard in gas detection

we watch gas
where you can’t

SST1: *2 & 3 year* model

The SST1 single gas detector provides up to three years of maintenance-free operation and is available in H_2S, SO_2, CO, or O_2 (2-year only) models. Its simple design makes it perfect for users looking for ultimate protection while being easy to use, durable, and cost-effective.

SST1: *Serviceable*

The SST1 Serviceable offers one of the most cost-effective solutions on the market. With its 3-year replaceable battery and solid polymer sensor technology the SST1 offers a compact and modular design, while not compromising on its ruggedness.

H_2S | SO_2 | O_2 | CO | Ch_4S

PH_3 | NH_3 | H_2

Key features

- ***Rugged housing*** designed for harsh environment and reduces warranty and service claims.
- ***Display protection bumper*** to prevent screen scratching and allows for clearer viewing of the gas values.
- ***Largest display*** in its class, allowing for fast viewing and determination of gas hazard.
- ***Protected serial number label*** behind polycarbonate to ensure full traceability of device.
- ***Replaceable battery and sensor*** on the serviceable device allowing for sustainability and lower 5-year costs.
- Compact design due to the use of the ***latest sensor technology*** the protruding nose found on other devices has been removed. This allows for better wearability and easier reading of device.
- ***Optional external filter*** for high dirt and dust environments. Saves time and money in maintenance, allowing for the quick changing of filters.
- ***Extreme temperature range*** for those harsh environments like the cold in Alberta Canada to the heats of the UAE. -40 to 60°C.
- ***95db at 30cm*** ideal for high noise environment and wearing ear protection. Other manufactures only test to 10cm's.
- ***360 LED alarm*** allowing for clear indication of gas alarm or warning indications.
- ***Strong vibration motor*** allowing the user to feel when wearing heavy winter clothing. Best in class.
- Multiple options depending on application. ***2 to 3 years*** for contractors and turnaround and ***a serviceable option*** for those customers that want a 5-year.ownership of devices.
- ***Built-in NFC*** for quick data and event log download or to change configurations of devices if regulations or site policies change. No need to buy completely new units.

SST RANGE™
SST1: The industry standard.
95 dB @ 30cm
Others only validate to 95 dB @ 10cm.
20 centimeters is the difference between hearing and missing it.
Don't settle for anything less.

SST1 – *Sensor* Technology

Solid Polymer Technology

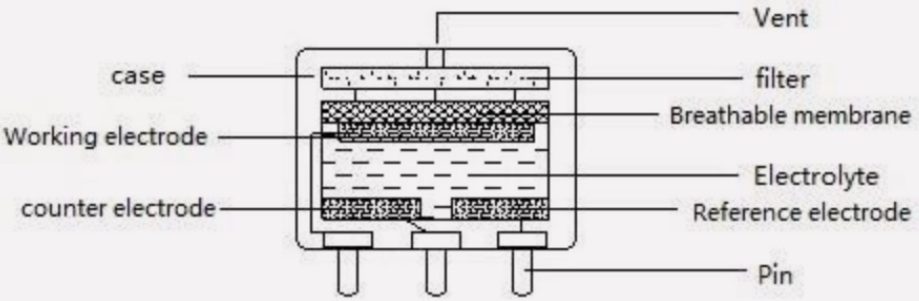
Electrochemical sensor technologies continue to be increasingly used for many different analytical gas detection applications, such as personal monitoring. A low-cost sensor with a simple user interface, small size, and minimal power consumption is in high demand. The majority of these sensors are amperometric sensors that have measuring and counter-reference electrodes and liquid electrolytes.

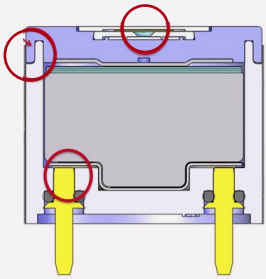
An electrochemical gas sensor works in a similar way to a fuel cell. For instance, The fuel cell converts hydrogen into water. This generates a large amount of power and currents in the ampere range. In the amperometric gas sensor, the target gas diffuses to a measuring electrode where it is oxidized or reduced. However, the output signal is very small in the nA or µA range, but measurable, due to the low concentration of ppm or ppb and due to a diffusion limitation of the sensor.

Modern fuel cells no longer work with liquid electrolytes, but now contain so-called SPE (Solid Polymer Electrolyte) membranes, which have ionic conductivity to transport the current inside the fuel cell.

For more than 40 years, most commercially available electrochemical gas sensors still contain liquid electrolytes such as H_2SO_4, H_3PO_4 or salt solutions. Our goal and dream was to apply polymer electrolyte technology to sensors. In this paper, we highlight the advantages that were achieved with WatchGas's polymer electrolyte sensors.

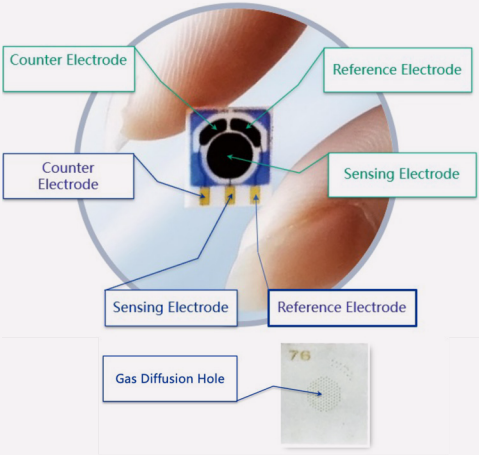
Liquid Electrochemical Gas Sensors





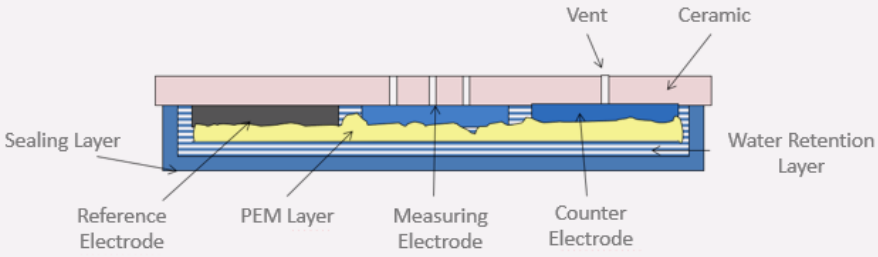
Traditional "*old* style" Liquid Electrochemical Gas Sensors are larger in size since they must contain a liquid reservoir and expansion tank to compensate for moisture absorption by the hygroscopic electrolyte or to serve as a water source in the event of a dry environment. Basically, there is always a risk of leakage or drying out, depending on the environmental conditions.

Electrochemical Gas Sensor *Advantages*



Electrochemical sensors are sensitive to various gas molecules such as CO, NH_3, SO_2, NO, NO_2, O_2, HCN, O_3, PH_3, SiH_4, HF and H_2. They offer one of the most *energy-efficient approaches* combined with analytical performance that includes *sensitivity* and *selectivity* at relatively *low cost*.

Solid Polymer Sensor Design



The basic structure of our polymer electrolyte sensor is shown in the figure. A ceramic wafer contains holes next to a measuring electrode and next to the counter electrode. On the contact side, a measuring electrode, a reference electrode and a counter electrode are printed on the ceramic wafer in a specific design. Depending on the application, we can design the structure in different variants.

First the electrodes with a novel metal-containing slurry are printed onto the ceramic using an automatic screen-printing process, then a polymer electrolyte layer and finally a water-retaining layer that stabilizes the water balance inside the sensor, acts as a proton transport material and also functions as an ion-conducting layer. Finally, a layer of silicone rubber is added, which seals the sensor from the environment.

The automated printing processes allow a large number of sensors to be manufactured at the same time, which means that the sensors can be produced at consistently high quality and low cost, allowing the sensors to be used in applications that were previously impossible for economic reasons.

Our variety of electrochemical sensors are now used in high volumes in both stationary and portable applications. Polymer electrolytes in combination with ionic liquid polymer electrolytes are typically used for operation at low temperatures and in humid or dry conditions.

Gas sensors using polymer electrolytes are not yet as thermally robust as the devices that can be made using solid-state materials such as semiconductor sensors or high-temperature zirconia electrolyte sensors. However, amperometric and potentiometric devices typically provide higher selectivity than semiconductor sensors and do not consume electricity.

Solid Polymer Electrochemical Technology offers flexibility in design and size since the core is dry and contains no liquid electrolytes. Traditionally, electrochemical sensors are used to detect toxic gases in industrial settings. The concept of a dry electrochemical cell based on a solid polymer electrolyte challenges not only the design restrictions of the gas sensor, but also the traditional applications for electrochemical cells. This revolutionary technology enables new and innovative mechanical designs for the finished cell.

H_2S *warning* signs

Question: do you know what your level of H_2S your employee has been exposed to, if your conventional device only reads from 0-100ppm?

SST1 measure from ***0-500ppm.***

0ppm

100ppm,
then shows OL*

500ppm

*Others show OL over 100ppm, we show H_2S readings from 0-500ppm

<1ppm

Most people smell "rotten eggs".

3-5ppm

Odour is strong.

20-150ppm

Nose and throat feel dry and irritated. Eyes sting, itch, or water. "Gas eye" symptoms may occur. Prolonged exposure may cause coughing, hoarseness, shortness of breath, and runny nose.

150-200ppm

Sense of smell is blocked (olfactory fatigue).

200-250ppm

Major irritation of the nose, throat, and lungs occurs, along with headache, nausea, vomiting, and dizziness. Prolonged exposure can cause fluid buildup in the lungs (pulmonary edema), which can be fatal.

300-500ppm

Symptoms are the same as above, but more severe. Death can occur within 1 to 4 hours of exposure.

>500ppm

Immediate loss of consciousness.
Death is rapid, sometimes immediate.

SST1 *Functions*

- ***Scan Protect*** allows the user to set a password so the unit cannot be scanned by unauthorized device link.
- ***Bump and Calibration*** reminders can be set, and this can be easily done through the WatchGas App or through the SST Dock or SST Kiosk.
- ***Bump Test Speed*** has three test threshold that can be set to fast at 50%, medium at 70% or slow at 90% of the gas exposed during testing.
- ***Tap Compliance*** allows the user to confirm unit functionality and transfer any events and health data in to the WatchGas Compliance Watch Software.
- ***Compliance Indicator*** is a led that will show the status of the device. Green light indicates good health of the device and no actions required.
- ***Event Logs*** are captured in the device and up to 100 events are stored at a device level. Any time the device is docked into the SST Dock or Kiosk the information is downloaded.
- ***Peak alarms*** are stored for review later or if needed in an incident report.
- ***TWA and STEL*** can be set in the SST1 serviceable device, and this can be reset with a 10 second button press. This is ideal for shift changes.
- ***Hibernation Mode*** is easy and can be done via the WatchGas Application or via the SST Dock or SST Kiosk. This allows for longer use of the device and saves battery life for later use.
- ***Maintenance Overview*** can be viewed via the WatchGas Application or via the Compliance Watch Software and shows the health of your fleet allowing for a proactive service schedule.
- ***Assign and Unassign*** users fast and easily with the WatchGas Application or via the SST Kiosk. This allows for full fleet traceability, ideal for shutdowns or rental fleets.
- ***Bump and Calibration*** certificates stored in the WatchGas Application for easy sharing and site auditing.
- ***Easy Configuration*** via WatchGas Application. No need for wires or setting up PC, now it is easily done via NFC and phone, kiosk or docking station.

0.0 ppm
watchgas
H2S
SST1
watchgas
detection
Device link
WatchGas
SST-H-104512654
To start please
tap the unit
Exit setup

WatchGas *Application*

This intuitive app allows you to carry out traditional time-consuming tasks with ease and speed. Quickly and easily download gas events and if required these can be easily sent via SMS or email for fast reporting. Easily configure devices without the need of costly software and the hassle of cables and initial set up.

Also, with the Tap Compliance you have the ability to tap in and out devices for full fleet traceability and see the health of your fleet with the health status feature. This is all done with extreme ease using NFC (*Near Field Communication*) in conjunction with the WatchGas Application. The WatchGas Application is fully compatible with the SST Range™ so need for different software platforms for a mix of single and multi-gas devices.

NOTE: The WatchGas Application is available on all phones and can be found for free at the following links. For hazardous environment we recommend the use of i.safe MOBILE devices.

GET IT ON Google Play

Download on the App Store

Coming soon

i.safe MOBILE

Configure Device

Using NFC you can quickly and easy configure devices. Change alarm set Points or enable a new feature. No need for additional PC's and cables and can be done remotely if required.

Health Status

Quickly see the health and compliance Of your device. This is a perfect solution For service centres and safety managers. The Status Shows the health of the sensors and main components all in a simple to understand star rating.

Event Logs

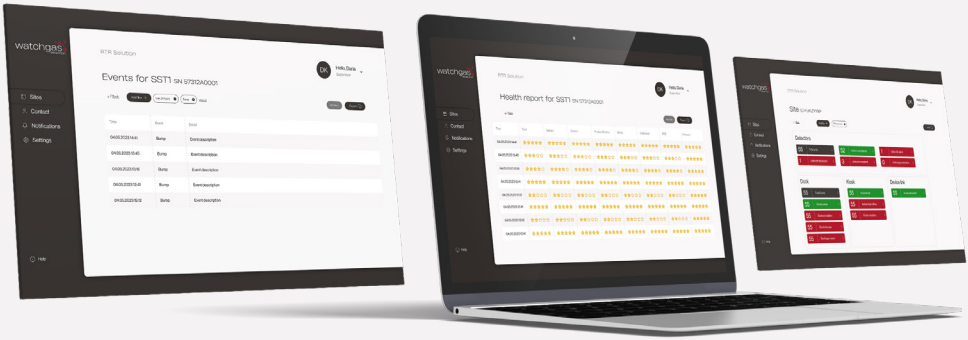
If you are working remotely there is No need to drive back to a central location. Simply download the event logs using the Built in NFC coupled with WatchGas application and send the event is a PDF Format via SMS, WhatsApp or email.

Breast Cancer Awarness *Month*

We are releasing the unit in Pink to support Breast Cancer Awareness. This unit will be part of the portfolio and we will put a percentage of sales towards this great cause.

Starts on ***October 1st - 31st***

watchgas
detection
THINKING PINK
means
STAYING SAFE
#support



Compliance Watch

RTR Software Solution

RTR (Record to Report) Solution is a cost-effective fleet management solution. Managing a large fleet of devices can be complex and through up questions like, are they calibrated, and bump tested, have they seen gas and who are they assigned to? Well all of that can be easily viewed with the Compliance Watch RTR Software. Whatever your application and focus areas the software can be tailored to show you dashboards and reports making it easier than ever to manage your fleet of gas detectors.

Key features

- ***Compliance Overview*** showing general health and status of your fleet of SST devices.
- ***Infrastructure Overview***, showing the status of readers, kiosks, and docks on site.
- ***Gas Level Management*** showing the age and levels of each dock and location.
- ***Fleet Health*** to give proactive rather than reactive maintenance.
- ***User Alert Notifications*** Easy to allow for alert notifications on SMS and email for usage models.
- ***Partner Proactive Service*** can be set up to allow partners to manage multiple sites and offer management of the fleet of devices as a service.
- ***Rental Solution*** allows for easy set up and manages the rental fleet and agreements. Coupled with the SST Kiosk this allows for quick usage reports and product health.
- ***Multi Site Access*** allows Companies multiple sites to see gas events and health of units. Ideal for company reporting and understanding of areas for improvement.
- ***User Assign*** for full traceability and record keeping. If not checked in then this will be captured in the reporting, reducing costs associated with lost or missing devices.

Part Number Structure

SST1 – Single Gas Device

Part Number	Description	Sensor Range
Category 1		
2 Year Fixed Life Single Gas Device		
SST1-H-24	H_2S (Hydrogen Sulphide) 2 Year Fixed Life	500 PPM
SST1-M-24	CO (Carbon Monoxide) 2 Year Fixed Life	2000 PPM
SST1-O-24	O_2 (Oxygen) 2 Year Fixed Life	25% Vol
SST1-S-24	SO_2 (Sulphur Dioxide) 2 Year Fixed Life	100 PPM
3 Year Fixed Life Single Gas Device		
SST1-H-36	H_2S (Hydrogen Sulphide) 3 Year Fixed Life	500 PPM
SST1-M-36	CO (Carbon Monoxide) 3 Year Fixed Life	2000 PPM
SST1-S-36	SO_2 (Sulphur Dioxide) 3 Year Fixed Life	100 PPM
Category 2		
Serviceable Single Gas Device		
SST1-H	H_2S (Hydrogen Sulphide) Serviceable	500 PPM
SST1-M	CO (Carbon Monoxide) Serviceable	2000 PPM
SST1-O	O_2 (Oxygen) Serviceable	25% Vol
SST1-S	SO_2 (Sulphur Dioxide) Serviceable	100 PPM
Category 3		
SST1-A	NH_3 (Ammonia) Serviceable	100 PPM
SST1-P	PH_3 (Phosphine) Serviceable	20 PPM
SST1-H2	H_2 (Hydrogen) Serviceable	1000 PPM
SST1-H2HR	H_2 High (Hydrogen) Serviceable	20,000 PPM/2% Vol.
Category 4		
SST1-MM	CH_4S (Methanethiol) Serviceable	100 PPM

Accessories

Gas cylinder

Demand flow regulator

External filter

SST Dock

SST Dock Kit

Compliance Kiosk

WatchGas Application

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