



READ BEFORE OPERATION

The SST1 and SST1E Gas Detectors are personal safety devices designed to detect the presence of certain toxic gases, such as: Hydrogen Sulphide (H₂S), Carbon Monoxide (CO), Sulfur Dioxide (SO₂), Oxygen (O₂) deficiency, Methyl mercaptan (CH₃S), Hydrogen (H₂), Ammonia (NH₃), Phosphine (PH₃), and others. For safety reasons, users need to be properly trained in the use of the equipment and appropriate actions in the event of an alarm condition.

WARNING

- Do not attempt to replace the internal components. This will void the intrinsic safety rating and will void the warranty of the product. Unless replaced with original WatchGas parts.
- Periodically test the response of the sensor by exposing the detector to a target gas concentration that exceeds the alarm setpoint. Manually verify that the audible, vibration and visual alarms are activated.
- Ensure the monitor is switched on, sensor and audible port are clean prior to use.

CAUTION / SPECIAL CONDITIONS

- All inspection should be performed in a clean and hazardous free environment.
- The detector can be cleaned with a soft damp cloth using a neutral cleaner (e.g. ACL Staticide). NOTE: Do not use solvents, soaps or polishes.
- Bump test the response of the sensor by exposing the detector to a target gas concentration that exceeds the alarm setpoint. Manually verify that the audible, vibration and visual alarms are activated.
- This product is a gas detector, not a measuring device.
- Ensure the monitor is switched on, sensor and audible port are clean prior to use.

- For optimal performance, periodically zero the sensor in a normal atmosphere (20.9% v/v O₂) that is free of hazardous gas.
- Activate the detector one year after purchase at the latest, or validate battery function.
- The equipment is intended for use in hazardous atmosphere in air with normal oxygen content not exceeding 21% v/v (typical value).
- The end-user shall contact the equipment manufacturer if the antistatic film applied on the equipment is damaged.
- The internal battery is non-replaceable. The internals must not be accessed by the end-user by any means.

AVERTISSEMENT

- N'essayez pas de remplacer les composants internes. Cela affectera la cote de sécurité intrinsèque et annulera la garantie du produit. Sauf si elles sont remplacées par des pièces d'origine WatchGas.
- Testez périodiquement la réponse du capteur en exposant le détecteur à une concentration de gaz cible qui dépasse le point de consigne d'alarme. Vérifiez manuellement que les alarmes sonores, vibratoires et visuelles sont activées.
- Assurez-vous que le moniteur est allumé, que le capteur et le port sonore sont propres avant utilisation.

MISE EN GARDE / CONDITIONS PARTICULIÈRES D'UTILISATION

- Toutes les inspections doivent être effectuées dans un environnement sans danger.
- Le détecteur peut être nettoyé avec un chiffon doux et humide à l'aide d'un nettoyant neutre (par exemple ACL Staticide). REMARQUE: N'utilisez pas de solvants, de savons ou de produits à polir.
- Testez la réponse du capteur en exposant le détecteur à une concentration de gaz cible qui dépasse le point de consigne d'alarme. Vérifiez manuellement que les alarmes sonores, vibratoires et visuelles sont activées.
- Ce produit est un détecteur de gaz et non un appareil de mesure.
- Assurez-vous que le moniteur est allumé, que le capteur et le port sonore sont propres avant utilisation.
- Pour des performances optimales, mettez périodiquement à zéro le capteur dans une atmosphère normale (20,9 % v/v O₂) exempte de gaz dangereux.
- Activer le détecteur au plus tard un an après l'achat, ou valider le fonctionnement de la batterie.
- L'équipement est destiné à être utilisé dans une atmosphère dangereuse dans l'air avec une teneur normale en oxygène ne dépassant pas 21 % v/v (valeur typique).
- L'utilisateur final doit contacter le fabricant de l'équipement si le film antistatique appliqué sur l'équipement est endommagé.

- La batterie interne n'est pas remplaçable. Les composants internes ne doivent en aucun cas être accessibles par l'utilisateur final.

AVISO

- Não tente substituir os componentes internos. Isso anulará a classificação de segurança intrínseca e anulará a garantia do produto. A menos que sejam substituídos por peças WatchGas originais.
- Teste periodicamente a resposta do sensor expondo o detector a uma concentração de gás alvo que exceda o ponto de ajuste do alarme. Verifique manualmente se os alarmes sonoro, vibratório e visual estão ativados. Certifique-se de que o monitor esteja ligado e que o sensor e a porta audível estejam limpos antes do uso.

CUIDADO / CONDIÇÕES ESPECIAIS

- Todas as inspeções devem ser realizadas em um ambiente limpo e livre de riscos. O detector pode ser limpo com um pano macio e úmido usando um produto de limpeza neutro (por exemplo, ACL Staticide). NOTA: Não use solventes, sabões ou polidores.
- Faça um teste geral da resposta do sensor expondo o detector a uma concentração de gás alvo que exceda o ponto de ajuste do alarme. Verifique manualmente se os alarmes sonoro, vibratório e visual estão ativados. Este produto é um detector de gás, não um dispositivo de medição.
- Certifique-se de que o monitor esteja ligado, o sensor e a porta audível estejam limpos antes do uso.
- Para um desempenho ideal, zere periodicamente o sensor em uma atmosfera normal (20,9% v/v O₂) livre de gases perigosos.
- Ative o detector no máximo um ano após a compra ou valide a função da bateria. O equipamento é destinado para uso em atmosfera perigosa no ar com teor normal de oxigênio não superior a 21% v/v (valor típico).
- O usuário final deve entrar em contato com o fabricante do equipamento se o filme antistático aplicado no equipamento estiver danificado.
- A bateria interna não é substituível. Os componentes internos não devem ser acessados pelo usuário final por nenhum meio.

The toxic gas sensors (CO, H₂S, SO₂) do not require calibration for the life of the product (2&3 year model), however we recommend bump testing. See our bump test recommendations below:

- Bump Test if the detector has been subjected to physical impact, liquid immersion, an Over Limit alarm event, custody changes, or anytime the detector's performance is in doubt.
- Bump Test by exposing the detector to a known concentration of target gas that exceeds the low alarm set points. The Bump Test must be performed manually and make sure to test in a clean air environment.

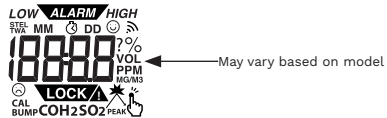
- If a unit fails Bump Test, please calibrate the detector. If the unit fails Calibration, please discontinue use of the detector (locks after 10 failed calibrations).
- The accuracy of the SST1 is dependent upon the quality of target gases. The toxic gas sensors do not need to be calibrated if in warranty, but we recommended a regular Bump Test.
- The SST1 is a gas detector, and not an analyser or gas measuring device.
- The SST1 contains a lithium battery that must be disposed of in the correct manner, check local requirements.
- SST1 2&3 year model: do not attempt to replace the battery or sensor, this product is designed to be disposable. Changing these components will void the warranty.
- If you suspect any malfunction or have any technical problems please contact WatchGas or a local verified partner.

1. DEVICE OVERVIEW

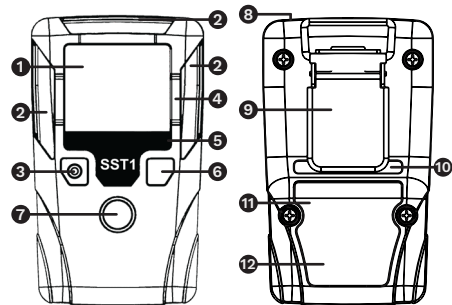
The SST1 is a portable, single gas device which is available in Disposable or Serviceable models. The disposable version operates for 2 or 3 years (O₂ and SO₂ are available in 2-year only, and the SST1E O₂ battery runs for 1 to 1.5 years, depending on the alarm) and are designed to be maintenance free devices. There is no need to replace sensors, batteries, or any other key components. The SST1 Serviceable model has a battery life of at least 2 years - except the SST1E O₂, whose battery run time will be 1 to 1.5 years, depending on the alarm. Dependent on the model chosen, the SST1 can detect the presence of the following gases: H₂S (Hydrogen Sulphide), CO (Carbon Monoxide), SO₂ (Sulfur Dioxide), Oxygen (O₂) deficiency, Methyl mercaptan (CH₃S), Hydrogen (H₂) high and low, Ammonia (NH₃), Phosphine (PH₃), Ethylene oxide (ETO), Hydrogen cyanide (HCN), Chlorine gas (Cl₂), Nitrogen dioxide (NO₂), Nitrogen monoxide (NO), Hydrochloric acid (HCl), and Xs. It then gives a low and high alarm indication to alert users of gas presence (STEL and TWA on the SST1 Serviceable). The SST1 is designed for ease of use. With its one button operation and use of NFC, it is easy to configure the device and gives full compliance. Its rugged design can handle the toughest of industrial environments and protects users against gas exposure.

DISPLAY

CAUTION: If the display is missing icons or cannot be clearly read, please contact WatchGas or local authorized partner. The detector utilizes a LCD to visually display its status. In the absence of gas, real time mode will display real-time reading. In those cases where gas is present, the display will automatically shift to a display that shows gas concentration.



ALARM	Alarm Notification
LOW	Low Alarm
HIGH	High Alarm
STEL	Short Term Exposure Alarm
TWA	Time Weighted Average Alarm
SENSOR EXAMPLES	
H₂S	Hydrogen Sulphide Sensor
CO	Carbon Monoxide Sensor
O₂	Oxygen Sensor
SO₂	Sulphur Dioxide Sensor
WARNINGS	
LOCK	Unit Expired / Circuit Fault
▲	Compliance / diagnostic failure
▲	Peak alarm seen last 24 Hrs
INFORMATION	
Ⓢ	Product Compliant
Ⓢ	Product Non-Compliant
CAL	Calibration Required
BUMP	Bump Required
NFC	NFC in Communication
Ⓢ	Button Prompt
UNIT OF MEASUREMENT	
%	Percent Volume (O ₂)
PPM	Parts Per Million (H ₂ S / CO/ SO ₂)
MG/M3	Milligrams per Cubic Meter
TIME	
⌚	Real Time Clock
MM	Months Remaining on Device
DD	Days Remaining on Device



- LCD display
- Visual alarm bars
- Audible alarm
- Screen scratch protectors
- Gas identification
- Button
- Sensor
- Housing
- Alligator clip
- Serial number
- NFC antenna
- Certification label

2. ACTIVATING THE DETECTOR

To activate the detector within the validity period indicated on the box, press and hold down button for approximately 5 seconds. On activation the detector will sound the audible alarm, flash and will enable stabilization in sequence. At this time, the maintenance free detectors will display the remaining time on the screen. A successful activation will display the life remaining as 24 or 36 months (O₂ & SO₂: 24 months). The Serviceable detectors will display the reading value for the sensor on the detector if configured for real time monitoring

3. DAILY USAGE INFORMATION SCREEN



A short button press allows for the review of the device information

- Months Remaining or real time reading
- Peak Exposure
- RTC - Time Hrs and Mins
- Low Alarm set point
- High Alarm set point
- STEL Alarm set point (only in real time mode)
- TWA Alarm set point (only in real time mode)
- Clear Peak/STEL/TWA with button press
- Clear Confirmed

EVENT LOG

SST1 stores the last 100 alarm events. The log system stores events by first in first out (FIFO). For example, the 101st event will replace the first event. These events are stored in the detector and can be downloaded using the WatchGas Device Link App and reviewed. The stored information is the following:

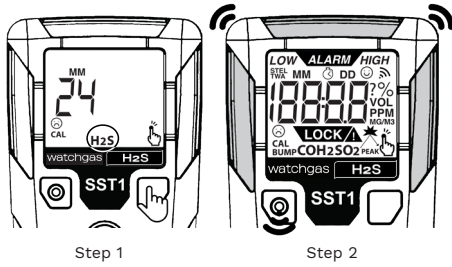
- The detector serial number
- Number of events
- Time elapsed since the gas alarm occurred
- Duration of the alarm
- Type of alarms - Low / High or TWA or STEL
- Compliance status
- Calibration / Bump test results

BUMP TEST

Bump Test intervals can be changed using the WatchGas Device Link App. If the detector is due the bump-test, the BUMP icon on the bottom left of screen will be visible. The bump-test can be performed manually with Bump gas and the WatchGas Device Link App, or by using the SST Dock. If switching off the bump toggle in the app, the detector will not display the bump-test request.



SELF TEST



Prior to daily use, the user must perform a self-test to ensure the device is safe for operation.

STEP 1: When a self-test is required the gas icon will flash at the bottom of the screen.

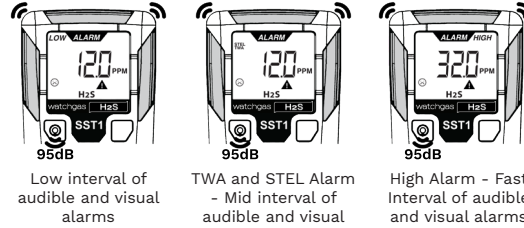
STEP 2: Press and hold the button for more than 3 sec. First the unit will give a single beep indicating NFC is on. Keep the button pressed until you hear a double beep then release. The above screen (step 2) will display and the unit will perform the following operations: (1) The right and left side LEDs light up after emitting audible beep and vibration. (2) All LCD display icons appear. (3) It will diagnose the sensor. Self Test is then completed. The period of self-test can be changed in the WatchGas Device Link App.

BUTTON FUNCTION

Short press – to step through the menu
1 sec press single beep – release NFC activated and NFC Icon on
3 sec press double beep – release and self test activated

Serviceable model in real time mode only:
Press more than 5 sec to zero calibrate.
Press more than 10 sec to reset STEL/TWA alarm.

ALARM TYPES



Low interval of audible and visual alarms
TWA and STEL Alarm - Mid interval of audible and visual alarms
High Alarm - Fast Interval of audible and visual alarms

ALARM SET POINTS

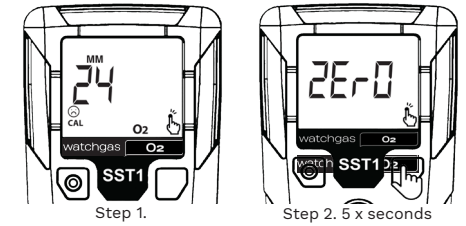
Default factory alarm set points:

Gas	Range	Low	High	STEL	TWA
SST1 H ₂ S	0 - 500 ppm	10 ppm	15 ppm	15 ppm	10 ppm
SST1E H ₂ S	0 - 300 ppm	10 ppm	15 ppm	15 ppm	10 ppm
SST1 CO	0 - 2000 ppm	35 ppm	200 ppm	100 ppm	20 ppm
SST1E CO	0 - 1500 ppm	35 ppm	200 ppm	100 ppm	20 ppm
SST1 SO ₂	0 - 100 ppm	5 ppm	10 ppm	5 ppm	2 ppm
SST1E SO ₂	0 - 40 ppm	5 ppm	10 ppm	5 ppm	2 ppm
SST1 O ₂	0 - 25%	19.5%	23.5%	N/A	N/A
SST1E O ₂	0 - 25%	19.5%	23.5%	N/A	N/A
SST1 PH ₂	0 - 20 ppm	1 ppm	2 ppm	1 ppm	0.3 ppm
SST1 CH ₄ S	0 - 100 ppm	2 ppm	5 ppm	1 ppm	0.5 ppm
SST1 H ₂ low	0 - 1000 ppm	100 ppm	400 ppm	N/A	N/A
SST1 H ₂ high	0 - 20000 ppm	4000 ppm	8000 ppm	N/A	N/A
SST1E ETO	0 - 100 ppm	2 ppm	5 ppm	2 ppm	1 ppm
SST1 NH ₃	0 - 100 ppm	25 ppm	50 ppm	35 ppm	25 ppm
SST1E NH ₃	0 - 100 ppm	25 ppm	50 ppm	35 ppm	25 ppm
SST1E HCN	0 - 50 ppm	5 ppm	10 ppm	4 ppm	4 ppm
SST1E HCN F	0 - 50 ppm	5 ppm	10 ppm	4 ppm	4 ppm
SST1E Cl ₂	0 - 50 ppm	0.5 ppm	1 ppm	1 ppm	0.5 ppm
SST1E NO ₂	0 - 20 ppm	2 ppm	5 ppm	5 ppm	3 ppm
SST1E NO	0 - 100 ppm	25 ppm	50 ppm	50 ppm	25 ppm
SST1E HCl	0 - 50 ppm	2 ppm	5 ppm	5 ppm	1 ppm
SST1E Xs	0 - 100 ppm	25 ppm	50 ppm	50 ppm	25 ppm

These set points can be changed using the WatchGas Device Link App. To display the detector alarm set points, press the button on the front of the detector.

NOTE: Disposable devices do not include STEL/TWA alarms.

CALIBRATION FOR O₂ DETECTOR



The SST1 O₂ detector is set up to prompt for a calibration every day. When the calibration icon and the button prompt icon are displayed (Step 1), it is an indication to perform an O₂ sensor calibration.

At this time, press the button for more than 5 seconds and the O₂ calibration starts (Step 2). If the button is released during the calibration, the calibration will be aborted and the calibration request icon is once again displayed.

NOTE: The SST Range products can only be calibrated with the WatchGas Device Link App or an SST Dock. Download the free iOS and Android app by scanning the QR code below.



SPECIFICATIONS

SIZE
SST1: 83 × 49 × 20 mm (3.3 × 1.9 × 0.8 in) SST1E: 83 × 49 × 24 mm (3.3 × 1.9 × 0.9 in)
WEIGHT
SST1: 88 g (3.1 oz) SST1E: 90 g (3.2 oz)
OPERATING TEMPERATURE
CO, H ₂ S, O ₂ & SO ₂ : -40°C to +60°C (-40°F to +140°F) Others: -20°C to +50°C (-4°F to +122°F)
HUMIDITY
5 ~ 95 %RH (Non-condensing)
INGRESS PROTECTION
IP65 / IP68
AUDIO ALARM
Buzzer (~ 95 dB @30 cm)
VISUAL ALARM
LED
VIBRATING ALARM
Vibrator (Operate more than -8°C) 3.6Vdc, 1.65Ah, Lithium battery (primary battery)
BATTERY LIFE
24/36 months of operation (O ₂ /SO ₂ : 24 months / SST1E O ₂ : 12-18 months) 2 minutes of alarm per day
EVENT LOG STORAGE
Last 100 events
SHELF LIFE
1 year

5. LIMITED WARRANTY

Where a product within the warranty period has a defect or a quality issue, WatchGas provides the buyer with a repair or a replacement free of charge either direct from WatchGas or through an authorized Partner / Service Center. This warranty is only applicable to the original purchaser of the product. Also, this warranty is valid only if the detector is activated by the date on the package.

This warranty does not include:

- fuses, disposable batteries, or routine replacement of parts due to the normal wear and tear of the product arising from use.
- any product which, in WatchGas's opinion, has been misused, altered, neglected or damaged by accident or abnormal conditions of operation, handling, or use.
- any damage or defects attributable to repair of the product by any person other than an authorized dealer, or the installation of unapproved parts on the product.

The obligations specified this warranty are conditional on:

- proper storage, installation, calibration, use, maintenance and compliance with the product manual instructions and any other applicable recommendations of WatchGas;
- the purchaser promptly notifying WatchGas of any defect. No products shall be returned to WatchGas until receipt by the purchaser of shipping instructions from WatchGas; and
- the right of WatchGas to require that the purchaser provide proof of purchase such as the original invoice, bill of sale or packing slip to establish that the product is within the warranty period.

In no event shall WatchGas liability hereunder exceed the purchase price actually paid by the buyer for the product.

The buyer agrees that this warranty is the buyer's sole and exclusive remedy and is in lieu of all other warranties, expressed or implied, including but not limited to any implied warranty or merchantability or fitness for a particular purpose. WatchGas shall not be liable for any special, indirect, incidental, or consequential damages or losses, including loss of data, whether arising from breach of warranty or based on contract, tort, or reliance on any other theory. Some countries or states do not allow limitation of the term of an applied warranty, or exclusion or limitation of incidental or consequential damages, the limitations and exclusions of this warranty may not apply to every buyer. If any provision of this warranty is held invalid or unenforceable by a court of competent jurisdiction, such holding will not affect the validity or enforceability of any other provision.

Intrinsic Safety:

II 1 G Ex ia IIC T4 Ga

I M1 Ex ia I Ma

IECEx EXV 22.0030X ExVeritas 22ATEX1314X

ExVeritas 22UKEx1315X

EU conformity www.watchgas.com

RoHS compliant

Standard

IEC 60079-11:2011

IEC 60079-0:2017

EN IEC 60079-0:2018

EN 60079-11:2012

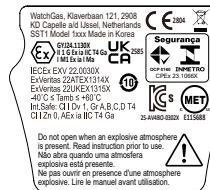
EN 50270:2015+AC:2016

Inmetro:

CPEX 231066X

ABNT NBR IEC 60079-11:2013

ABNT NBR IEC 60079-0:2020



North America:

UL 60079-0 7th Edition

UL 60079-11 6th Edition

CSA C22.2 NO. 60079-0:19

CAN/CSA C22.2 NO. 60079-11:14

UL 61010-1 Safety Requirements

CAN/CSA-C22.2 NO. 61010-1:12/A1:18

Cl I, Zn 0, AEx ia IIC T4 Ga

Int.Safe: Cl I Dv 1, Gr A,B,C,D T4

-40°C ≤ Tamb ≤ +60°C

KTIL:

25-AV4BO-0302X

적용규격: 방호장치 안전인증

고시 2021-22호

설치에 관한 모든 사항은 KS C

IEC 60079-14를 따라야 한다.

PESO:

Approval No : A/P/HQ/

MH/104/8564 (P639849)

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