# seitron
Innovation Technology

# USE AND MAINTENANCE

be safe SG ---

**Single Gas Personal Gas Detector**

## 1.0   IMPORTANT INFORMATION

### 1.1      About this manual

◊ This manual describes the features, operation, and maintenance of **be safe SG.**
◊ Read this manual before using the device. The operator must be familiar with the manual and follow its directions carefully.
◊ This manual is subject to change as a result of technical improvements-the manufacturer assumes no responsibility for any content or printing errors.

**Respect your environment, think before you print the full manual.**

### 1.2      Safety Warnings

⚠ **WARNING!**

**The be safe SG gas detectors are personal safety devices designed to detect the presence of specific gases:**

| | |
|---|---|
| **be safe SG H2S** | **Hydrogen sulfide (H2S)** |
| **be safe SG CO** | **Carbon monoxide (CO)** |
| **be safe SG SO2** | **Sulfur dioxide (SO2)** |
| **be safe SG O2** | **Oxygen (O2).** |

**For safety reasons, users must be properly trained in using the equipment and appropriate actions in case of alarm.**

**All persons who have or will have responsibility for operating or servicing the device must read and understand the contents of the User's Manual before operating. Failure to do so may result in serious injury or death.**

### 1.3      Disposal

**WARNING! Proper disposal**
**be safe SG** contains a lithium battery; arrange for proper disposal only through the appropriate containers. **be safe SG** should not be disposed of as municipal waste. The complete Waste Electrical and Electronic Equipment (WEEE) management document can be found at: **www.seitron.com/legals**

### 1.4      Warranty

The user is guaranteed against product conformity defects according to the European Directive 2019/771 as well as the Seitron warranty conditions document, which can be found at www.seitron.com. The user is invited to visit our website to consult the most up-to-date version of technical documentation, manuals and catalogs.

### 1.5      Manufacturer's address

In case of need, the builder can be contacted at the following references:

Seitron S.p.A. a socio unico
Via del Commercio, 9/11 - 36065 Mussolente (VI)
Tel. +39.0424.567842 - www.seitron.com - Email: info@seitron.it

✉ customer.care@seitron.it

🟢 +39 329 1444390

## 2.0 SAFETY

### 2.1 Safety check

- Use the equipment within the scope of what is described in the "Permitted Use of the Product" chapter.
- When using the equipment, follow the ATEX safety instructions given in the product's quick guide.
- Do not use the equipment if it appears damaged; inspect it before each use.
- For maintenance of **be safe SG**, strictly follow what is described in this manual in the "Maintenance" chapter.
- All work not specified in this manual may only be performed by Seitron service centers. Otherwise Seitron accepts no responsibility for the normal operation of **be safe SG**.

### 2.2 Permitted use of the product

This chapter describes the normal operating conditions of **be safe SG**:
- **be safe SG** is designed and certified with intrinsic safety.
- This product is classified for use in hazardous atmospheres with an O2 content of no more than 21%.
- Temperature range, with relative humidity range 5% ... 95% non-condensing:
- be safe SG H2S / be safe SG CO / be safe SG SO2      -40 .. +60 °C
- be safe SG O2                                                              -30 .. +60 °C

### 2.3 Unauthorized use of the product

The use of **be safe SG** under operating conditions other than those mentioned in Section 2.2 "Permitted Use of the Product" is at the operator's own risk and the manufacturer assumes no responsibility for the loss, damage, or costs that may result.

> ⚠ **WARNING!**
> **THE FOLLOWING PRODUCT VERSIONS ("NC") <u>ARE NOT CERTIFIED</u> FOR USE IN HAZARDOUS ENVIRONMENTS:**
> **be safe SG O2 NC**
> **be safe SG CO NC**
> **be safe SG H2S NC**
> **be safe SG SO2 NC**

## 3.0    OVERVIEW

**be safe SG** are portable personal safety devices designed to detect the presence of specific individual gases:

be safe SG H2S    Hydrogen sulfide (H2S)
be safe SG CO     Carbon monoxide (CO)
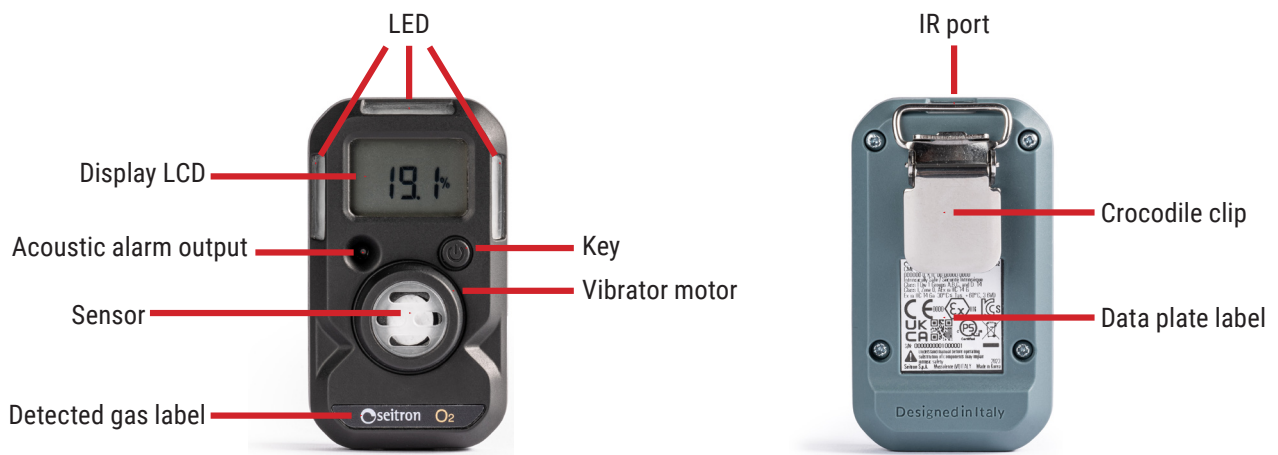be safe SG SO2    Sulfur dioxide (SO2)
be safe SG O2     Oxygen (O2)

In case an alarm condition is detected, the device alarms the user with audible, visual and vibration signals.

These are single-use devices, which once activated operate for 24 months without charging the internal battery and without any replacement of components.

**be safe SG** is equipped with a single button, which allows activation of the device, verification of alarm settings and the possibility of performing the Autotest, and through the infrared communication port it communicates with **be safe SG IR-Link** which connected to a PC, after installation of the **be safe SG IR-Link manager** software allows the user to configure some parameters of the device..

> **Users of the device must understand what is described in this manual.**
> **For safety reasons, users must be properly trained in the use of the equipment and appropriate actions in case of an alarm.**

## 4.0    HARDWARE DESCRIPTION



LED

IR port

Display LCD

Acoustic alarm output

Sensor

Detected gas label

Key

Vibrator motor

Crocodile clip

Data plate label

## 5.0    PRODUCT ACTIVATION

To activate the be safe SG detector, press and hold the button for about 5 seconds.

Upon activation, the detector will perform the following sequences:

- All LCD display icons are displayed for 2 s.
- An audible signal is emitted.
- The LEDs flash.
- A vibration is emitted.

If activation is successful, the display will show the remaining duration (24 months) or the value of the detected gas concentration (depending on the factory setting).

> **Having activated the product, the user cannot turn off the device and it will remain on for the life of the instrument.**

## 6.0    DISPLAY LCD

| MODE | SYMBOL | DESCRIPTION |
|---|---|---|
| **ALARM** | ALARM | Alarm (HIGH / LOW) |
| | LOW | Alarm LOW |
| | HIGH | Alarm HIGH |
| **DETECTED GAS** | H2S | H2S SENSOR<br>If the writing is flashing, the Autotest execution is required. |
| | CO | CO SENSOR<br>If the writing is flashing, the Autotest execution is required. |
| | O2 | O2 SENSOR<br>If the writing is flashing, the Autotest execution is required. |
| | SO2 | SO2 SENSOR<br>If the writing is flashing, the Autotest execution is required. |
| **WARNING!** | ⚠ | Autotest / Bump Test / Calibration Failed. |
| | max | A gas concentration above the HIGH alarm threshold has been detected (ALARM HIGH). |
| | ☐◉ | Flashing: bump test is required to be performed. |
| | CAL | Flashing: performing calibration is required |
| **MEAS. UNIT** | % | O2 sensor unit of measurement |
| | ppm | H2S/CO/SO2 sensors unit of measurement |
| **TIME** | ⊘ | Remaining life time of the device |
| | months | Remaining life time in months (over 1 month) |
| | days | Remaining life time in days (over 24 h) |

During normal operation and without gas in the environment, the display, depending on the settings, will show:
- The type of sensor and the sensor reading only
- The type of sensor and the remaining life of the device
- The type of sensor and the remaining life of the device or the gas concetration (if detected)

**Note: The display mode can be changed through the PC software "be safe SG IR-Link manager".**

Example of display during normal operation of be safe SG:

When gas is present, the display will automatically show the detected gas concentration, in addition to alarm-related displays.

⚠ **WARNING!**
**If the display has no icons or is not clearly readable, please contact the Seitron service center.**

## 7.0 OPERATION

### 7.1 User's Guide

> ⚠️ **WARNING!**
> **For safety, the detector must be positioned near the user (as close to the head as possible), for example, by attaching it to the top of clothing, taking care not to cover the device. This requirement is crucial to enable the product to effectively detect any gas leaks and to distinguish alarms in case the device detects a concentration of toxic gas and/or oxygen deficiency above the set alarm threshold. Ignoring or failing to perceive a device alarm condition can lead to serious injury or death of the user.**

Before using **Be Safe SG**, ensure that the self-test has been performed successfully (confirmation of display functionality, audible alarm, visual alarm, and vibration device). During normal operation, **Be Safe SG** will automatically detect gas and alert the user if an alarm condition is detected (exceeding the alarm threshold).

### 7.2 Self-test

Before daily use, it is recommended to perform the self-test procedure to verify the activation of the audible alarm, visual alarm, and vibration. You can initiate the self-test procedure if the display shows the sensor type blinking. If the text does not blink, the self-test procedure cannot be performed. The self-test procedure is activated on the device automatically every 20 hours (factory setting) from the last successful self-test.

The interval setting for the self-test execution can be changed via the PC software '**Be Safe SG IR-Link manager**' from 8 hours to 7 days. Alternatively, the self-test procedure can be manually initiated. See Appendix A.

Below is the step-by-step procedure for performing the test:

> **Note: To ensure safe operation perform self-test before daily use.**

1. When it is necessary to perform device self-test, the sensor type icon will flash; press the button present on **be safe SG**.



2. After pressing the button, the following screen will appear, and the device will execute the indicated sequence:
   - The right and left LEDs light up after the audible signal and vibration.
   - All LCD display icons appear.



3. Subsequently, the display shows the low alarm (LOW ALARM) and high alarm (HIGH ALARM) settings. These data can be set using the PC software '**Be Safe SG IR-Link manager**' (see Appendix A):



   When the HIGH and LOW alarm settings are displayed, pressing the button will cause the device to perform step 2.
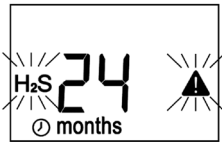
4. After the self-test procedure is finished, the device will notify the user whether the self-test was successful or unsuccessful:

   **POSITIVE RESULT**
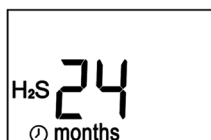
   The beep sound will be short, then **be safe SG** will return to the normal operation screen.

**NEGATIVE RESULT**

If **be safe SG** fails the self-test, the warning icon " ⚠ " will appear flashing and the icon of the type of the sensor will start flashing. **be safe SG** will then have to repeat the self-test.

## 7.3 Display main configurations (alarm - user ID)

From the normal operation screen of the device and with no gas in the environment, pressing the button will successively display the High and Low alarm thresholds and if configured the user name associated with the **be safe SG**.
Through the PC software '**Be Safe SG IR-Link manager**' (see Appendix A), you can modify the alarm thresholds (High and Low) and associate/modify a username with the device. The 'User ID' consists of a maximum of 6 alphanumeric characters and will be displayed on the display in two screens, each with 3 characters.
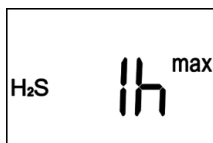
Push the button

## 7.4 Peak value display

If **be safe SG** is exposed to a gas concentration above the ALARM HIGH threshold, the display will show the "max" icon and the peak (maximum) value detected:

The next screen will sequentially display the date (time, day, month) of when the High alarm occurred and the elapsed time since the peak value was detected.

As the last screen, the display shows "CLP" (CLear Peak): pressing the **be safe SG** button while CLP is displayed will clear the stored peak value and the "max" icon will not be displayed.

## 7.5 Display BUMP TEST EXECUTION

Through **be Safe SG IR-Link manager** (see Appendix A), **be Safe SG** can be configured to perform periodic Bump Tests. If **be Safe SG** requires a Bump Test to be performed, the flashing icon "⬜⊙" will be displayed. Additionally, the upper LED + left LED and upper LED + right LED will start flashing alternately at intervals of 32 seconds.
For performing the Bump Test, refer to the 'Bump Test Execution' chapter.
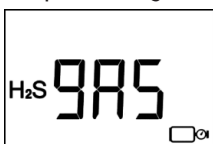
## 7.6 Display CALIBRATION EXECUTION

Through **be Safe SG IR-Link manager** (see Appendix A), **be Safe SG** can be configured for periodic sensor calibration. If **be Safe SG** requires calibration to be performed, the display will alternate between showing "CAL" and the main product screen.
For performing the calibration, refer to the chapter 'Calibration Execution'.
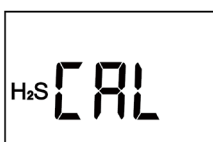
## 8.0 GAS ALARM SIGNAL

Below are the factory settings for gas alarms:

| Alarm | $H_2S$ | CO | $SO_2$ | $O_2$ |
|---|---|---|---|---|
| HIGH | 15 ppm | 200 ppm | 10 ppm | 23,5% |
| LOW | 10 ppm | 35 ppm | 5 ppm | 19,5% |

It is possible to change the factory settings of gas alarm thresholds using the PC software "**be safe SG IR-Link manager**" (see Appendix A).
To view the alarm settings of **be safe SG**, press the detector button and wait for the screens to scroll.

### 8.1 LOW alarm status (LOW ALARM)

A gas concentration higher than the LOW ALARM level set has been detected for CO, $H_2S$, $SO_2$ sensors, or a lower gas concentration for the $O_2$ sensor:
1) Acoustic alarm (1 time/second)
2) LED flashing (1 time/second)
3) Vibrating alarm (0.5 time/second)

### 8.2 HIGH alarm status (HIGH ALARM)

A gas concentration above the set HIGH ALARM level was detected:
1) Acoustic alarm (2 times/second)
2) LED flashing (2 times/second)
3) Vibrating alarm (1 time/second)

## 9.0 STOP DETECTOR ALARM

If one of the STOP alarms occurs in **be Safe SG**, the detector will generate an audible alarm, flashing LED alarm, and vibrating alarm every 5 seconds.
The alarms will continue until the user presses the button. By pressing the button, **be Safe SG** will turn off the alarm signals, while keeping the error code visible on the display.
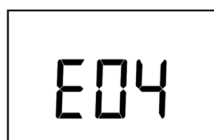
### 9.1 ALARM remaining life under 8 hours

The remaining life of **be safe SG** is less than 8 hours.
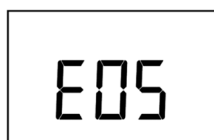
### 9.2 ALARM low battery

After 3 hours of operation since the "EOL" message, the voltage of the internal battery at **be safe SG** is too low or below a certain level.

### 9.3 Self-test failed

The self-test has failed for three consecutive times.
If the self-test fails for three consecutive times, the unit will issue a warning as HIGH ALARM.

## 10.0 EVENTS LOG

**be Safe SG** stores the last 30 alarms. The logging system stores alarm events according to FIFO (First In First Out) logic. For example, the 31st event will replace the first event, and the 32nd event will replace the second, and so on.
Alarm events stored on **be Safe SG** can be confirmed and downloaded using the PC software '**be Safe SG IR-Link manager**' (see Appendix A).
The stored information includes:
· Serial number of the detector
· Remaining life of the detector
· Number of self-tests performed
· Number of alarms occurred and cumulative duration
· Event log data:
    · Time elapsed since the last alarm
    · Alarm duration
    · Alarm level(s) in ppm or %.
    · Type of alarms
    · Bump test (yes or no)

## 11.0 BUMP TEST AND CALIBRATION

This section contains important information on the proper calibration and Bump test performance for **be safe SG**. These procedures are essential to ensure proper operation and accuracy of device readings. Performing Bump Test of all detectors and calibration of **be safe SG O2** should only be performed directly from the instrument, while calibration of toxic gas detectors is carried out from PC via "**be safe SG IR-Link**" interface after installing "**be safe SG IR-Link manager**" software on PC (See Appendix A).

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**WARNING**

- **"be safe SG O2" detectors require periodic calibration to 20.9% Oxygen. Therefore, calibration can be performed in fresh air without the need for a certified test gas cylinder.**
- **Conducting the Bump Test for "be safe SG O2" detectors should be done in fresh air without the aid of a certified test gas cylinder.**
- **Before starting the Calibration/Bump test procedure, make sure that the device is not in an alarm or fault condition.**
- **Check and resolve any alarms or faults before proceeding with calibration or the Bump test.**
- **At altitudes above 2,000 meters, calibration may result in lower readings; calibration performed at high altitudes may lead to less accurate or underestimated readings compared to conditions at lower altitudes. This is important to consider because altitude can influence gas properties and, consequently, the effectiveness of calibration.**

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### 11.1 Tools and equipment needed

- Certified gas mixtures recommended for performing Bump Test / Calibration:
    H2S    25 ppm   complementary gas: Air
    CO     100 ppm complementary gas: Air
    SO2   10 ppm   complementary gas: Air
    O2     18%      complementary gas: Air (to be used if calibrating via "**Be Safe SG IR-Link manager**")
- Use the compatible adapter supplied with the instrument, mounted on the nose of the sensor.
- Use a flowmeter and T-tubing to connect the gas cylinder, flowmeter, and instrument.

## 11.2    Connection diagram

**PRESSURE REGULATOR**

0,5 l/m

**GAS CYLINDER**

**APPLY THE SUPPLIED CALIBRATION CAP**
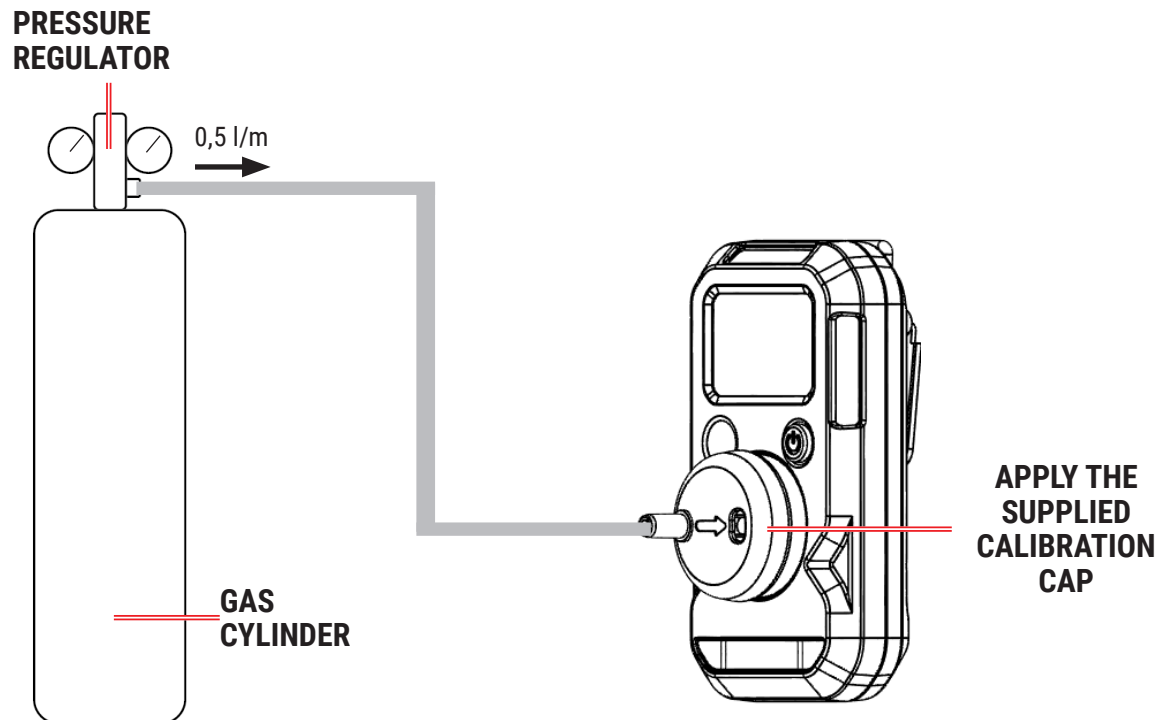
## 11.3    Performing the Bump Test

Through the PC software '**Be Safe SG IR-Link manager**' (see Appendix A), you can adjust the frequency of performing the Bump Test, which can be set from 1 to 365 days. If the interval is set to zero, **be Safe SG** will not prompt for the Bump Test
NOTE: The device comes from the factory set to zero (Bump test not required).

NOTE: Seitron recommends performing the bump test before each use to verify the device's reliability.

**PROCEDURE**

1. If **be Safe SG** requires the Bump Test to be performed, the flashing icon "⬜☉" will be displayed on the display. Additionally, the upper LED + left LED and upper LED + right LED will start flashing alternately at intervals of 32 seconds.

2. Connect the adapter and gas cylinder as described in the previous section.

3. **Press the button** to switch to the inspection screen; the display shows the alarm and user ID configuration sequence and finally settles on the "GAS" screen:

   H₂S **GAS**

4. From the inspection screen, expose the instrument to the relevant gas for 45 seconds.
   **If the button is pressed without exposing the instrument to the gas for 45 seconds, the bump test will stop. The detector will then continue to indicate the bump test status, prompting the user to repeat the procedure if necessary.**

5. The bump test is completed when the detector displays the applied gas concentration on the inspection screen after being exposed to the gas.
   Note: during the bump test, it is normal for the instrument to activate the LOW and HIGH alarm thresholds if the detected gas concentration matches the set alarm thresholds.

6. Stop the gas flow and remove the calibration adapter.

7. Place the instrument in fresh air. The alarms will automatically reset as the detected gas concentration decreases. The alarm log will be automatically stored in the detector.

## 11.4 Performing the calibration of "be safe SG O2"

Through the PC software 'Be Safe SG IR-Link manager' (see Appendix A), you can adjust the frequency of performing the calibration, which can be set from 1 to 365 days. If the interval is set to zero, Be Safe SG O2 will not prompt for calibration. The factory default setting for Be Safe SG O2 is to calibrate the detector every 30 days.

**PROCEDURE**

1. If **be safe SG** O2 requires Calibration to be performed "$_{O_2}2r0$" and gas concentration will be alternately shown on the display.

2. **Press and hold the button for 5 seconds; be safe SG** O2 performs calibration and the display shows the following screen with O2 flashing:
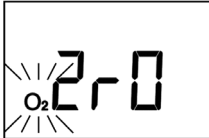


3. **Calibration is successfully completed** when the detector displays the gas concentration with sequential activation of the buzzer, vibration and flashing of the LEDs.

> **If, on the contrary, the calibration was unsuccessful, the device will go into alarm status by activating the audible alarm and the LEDs will flash. If the calibration fails, contact Seitron service center.**

**Note: If the sensor calibration procedure is successful but the O2 indicator remains flashing, it means that the self-test must be performed.**

## 12.0   FAULTS

| PROBLEM | CAUSE |
|---|---|
| The detector emits an acoustic signal, the LEDs flashes for 10 times and on the display the signaling icon "⚠" appears flashing and the sensor type icon will start flashing. | The self-test outcome is negative.<br>Repeat the self-test. |
| An E05 STOP alarm has occurred; the detector has generated an audible alarm, flashing LED alarm, and vibrating alarm every 5 seconds.<br>The display shows "E05" | The self-test failed three consecutive times.<br>By pressing the button, Be Safe SG will turn off the alarm signals while keeping the error code visible on the display. In case this notification occurs, please contact Seitron support center for assistance. |
| An EOL STOP alarm has occurred; the detector has generated an audible alarm, flashing LED alarm, and vibrating alarm every 5 seconds.<br>The display shows "EOL". | The battery is continuously monitored throughout the entire duration of the detector's operation.<br>If the remaining life of Be Safe SG is less than 8 hours, the detector has reached the end of its operational life. Please discontinue use and contact Seitron support center for assistance. |
| An E04 STOP alarm has occurred; the detector has generated an audible alarm, flashing LED alarm, and vibrating alarm every 5 seconds. The display shows "E04". | After 3 hours of operation since the "EOL" message, the voltage of the internal battery in **be Safe SG** is too low or below a certain level: the detector has reached the end of its operational life. Please discontinue use and contact Seitron support center for assistance. |
| The detector restarts shortly after firmware download, and the display shows "E01" or "E02".<br>"E01" or "E02" can also occur due to firmware or power supply issues. | Press the button to stop the alarm. If this error occurs, please contact Seitron support center for assistance. |
| After updating the firmware, Be Safe SG restarts, and the display shows "E03". | Download the firmware again and repeat the firmware update procedure.<br>If the error persists, please contact Seitron support center. |

## 13.0   MAINTENANCE

### 13.1      Repair

There is no provision for repairing the device.

### 13.2      Cleaning

Clean the detector with a soft cloth dampened with a neutral, anti-static detergent. Do not use solvents, soaps, or polish products.

## APPENDIX A - be safe SG IR-Link & be safe SG IR-Link manager

**Be Safe SG IR-Link** is an IR device (available separately) that, when connected to the PC via a USB cable, can communicate with the single gas detector **be Safe SG** after installing the "**be Safe SG IR-Link Manager**" software on the PC, which can be downloaded from the website www.seitron.com.

The main operations that can be performed through the PC software "**be Safe SG IR-Link Manager**" include:
- Modifying alarm threshold values;
- Setting the interval for Calibration execution;
- Setting the interval for Bump Test execution;
- Setting the interval for Autotest execution;
- Associating the device with a User ID;
- Display mode selection;
- Firmware update for gas detectors;
- Checking the alarm history.

## Overview



IR communication port

USB connector type Mini-B
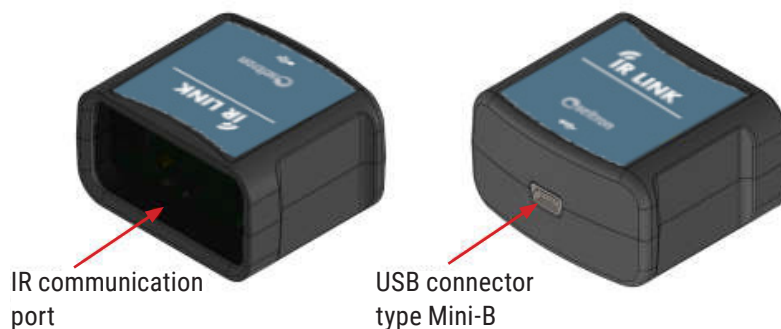
**USB Type A / Mini B Cable**



## Technical features

| | |
|---|---|
| PC connection: | Via USB type A connector |
| Communication: | Infrared |
| | Communication speed: 115200 bps |
| Connector: | USB Mini-B (5 pins) |
| Supported operating system: | Windows XP and later |
| Operating temperature: | 10 .. 50 °C |
| Relative humidity: | 5 .. 95 % RH (non-condensing) |
| Dimensions: | 46×39×26 mm |
| Weight: | 21g |

## Software installation instructions

1. Access the website www.seitron.com and select the DOWNLOAD => Apps and Software section.
2. Scroll down the page until you find the section dedicated to the "**Be Safe SG IR-Link Manager**" software.
3. Click on "Download: version X.XX" where X.XX is the current version of the software.
4. A .zip file download will start. Once the download is complete, click on the button at the top right of your browser to access the "Downloads" folder.
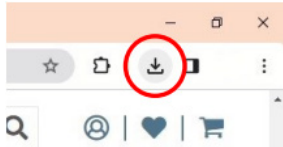


CAUTION: The symbol may vary depending on the browser being used.

5) Right-click on the recently downloaded .zip file. Select "Extract All" from the dropdown menu.
   In the window that opens, select the location where you want to extract the contents of the .zip folder and click "Extract."
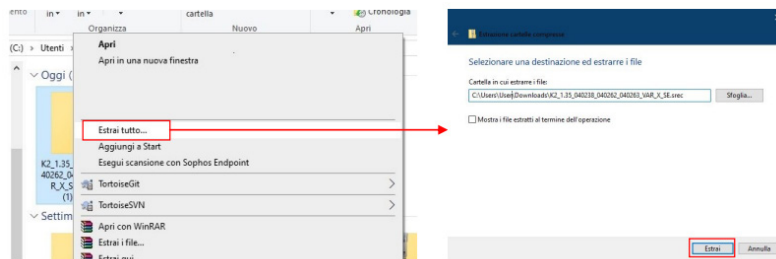


6) Double-click on the extracted folder.
7) Double-click on the previously downloaded "beSafeSGDockManager.exe" file (step 5).
   The main screen of the **be Safe SG IR-Link Manager** software will appear.
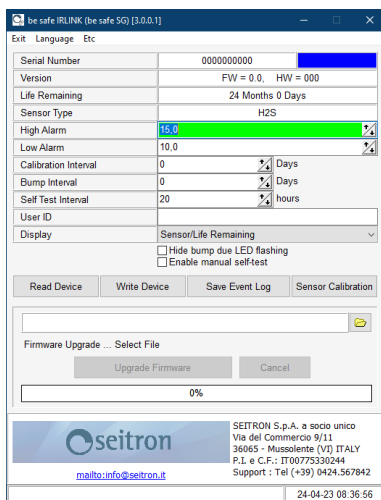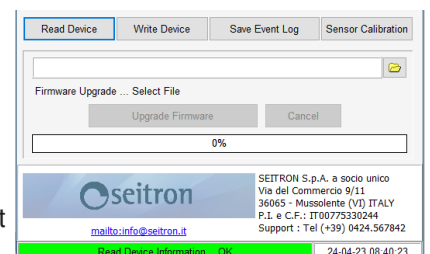


## Connect be safe SG

**Be Safe SG IR-Link** and the single gas detector **be Safe SG** communicate with each other through an IR interface by placing them as shown in the image below. **Be Safe SG IR-Link** can communicate with only one instrument at a time.
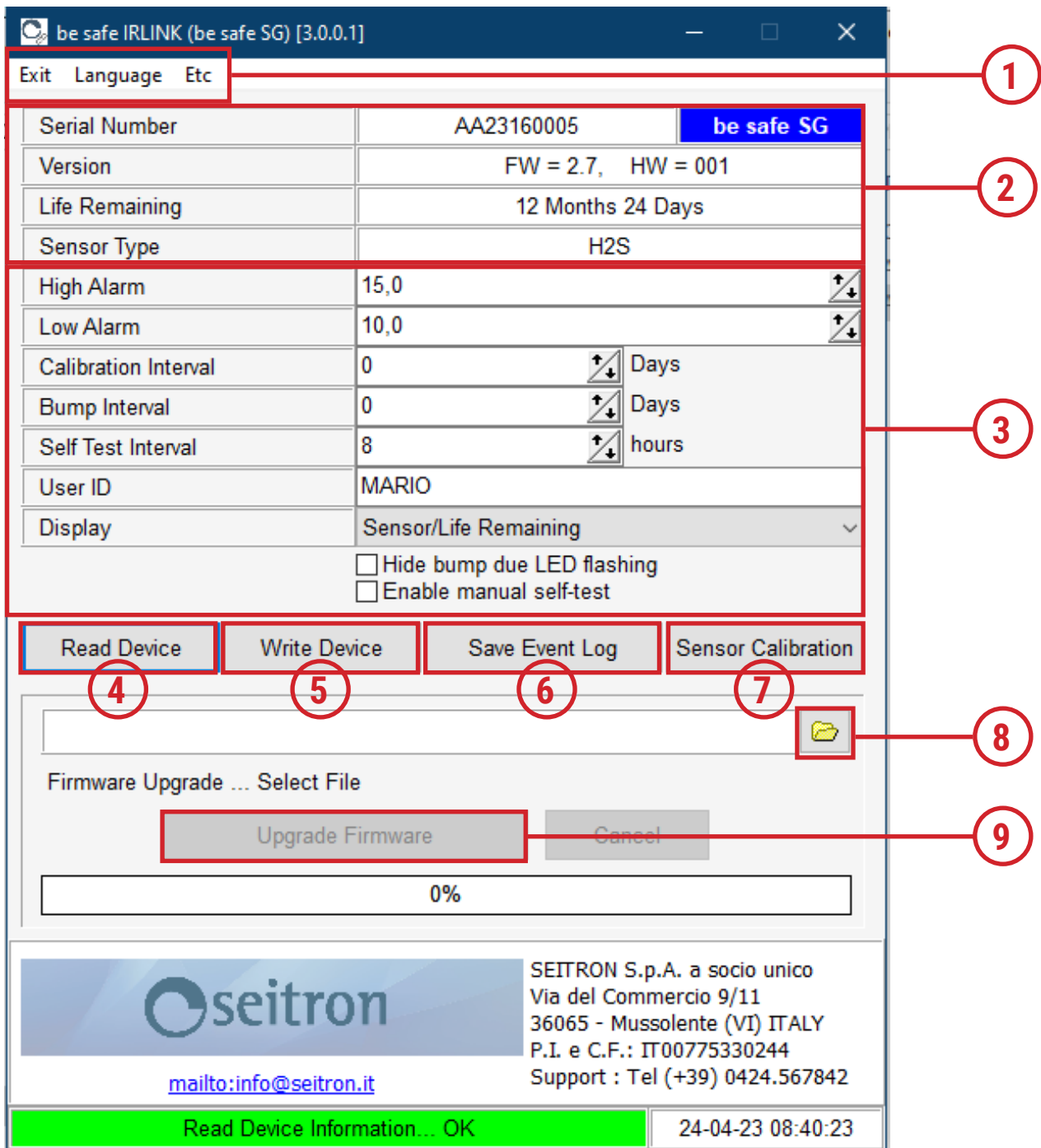


Max. distance 5 cm
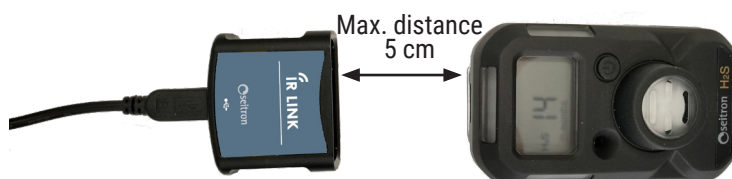
**From the software screen, click on "Read Device."**
At the bottom left, the "Read Device Information" bar turns green,
with the indication "OK," indicating that the instrument is connected to the PC.
If the bar turns red, the instrument is not connected. Move the instrument and
reposition it close to **be Safe SG IR-Link**. After several unsuccessful attempts, contact
Seitron support center.

PM1G000001SE 043172 110324

## Further information

When the instrument is connected and the reading is successful, the instrument can be configured.

| be safe IRLINK (be safe SG) [3.0.0.1] | — □ ✕ | |
|---|---|---|

Exit    Language    Etc    ①

| Serial Number | AA23160005 | be safe SG |
|---|---|---|
| Version | FW = 2.7,    HW = 001 | |
| Life Remaining | 12 Months 24 Days | |
| Sensor Type | H2S | |

②

| High Alarm | 15,0 | |
|---|---|---|
| Low Alarm | 10,0 | |
| Calibration Interval | 0 | Days |
| Bump Interval | 0 | Days |
| Self Test Interval | 8 | hours |
| User ID | MARIO | |
| Display | Sensor/Life Remaining | |

☐ Hide bump due LED flashing
☐ Enable manual self-test

③

| Read Device | Write Device | Save Event Log | Sensor Calibration |
|---|---|---|---|
| ④ | ⑤ | ⑥ | ⑦ |

📂 ⑧

Firmware Upgrade ... Select File

| Upgrade Firmware | Cancel |
|---|---|

⑨

0%

seitron

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| Read Device Information... OK | 24-04-23 08:40:23 |
|---|---|

| | | |
|---|---|---|
| **1** | "Exit" Button | Closes the App. |
| | "Language" Button | Set the App language. |
| **2** | Information about the connected **be Safe SG** | Users can view information about the connected device.<br>This section is not editable.<br>Serial number.<br>Firmware version and hardware version of the connected device.<br>Remaining life of the device.<br>Gas type detected by the device. |
| **3** | User-configurable data | High Alarm: Configures the gas concentration at the HIGH alarm limit. |
| | | Low Alarm: Configures the gas concentration at the LOW alarm limit. |
| | | Calibration Interval: Specifies how often the device requires calibration (0 to 365 days). |
| | | Bump Test Interval: Specifies how often the device requires a Bump test (0 to 365 days). |
| | | Autotest Interval: Specifies how often the device requires an Autotest (8 to 168 hours). |
| | | User ID: Customized ID for the device. Up to 6 characters. |
| | | Display: Device display mode.<br>**Sensor/Remaining Life**: When a gas concentration is detected, the sensor reading or the remaining life of the device is displayed.<br>**Sensor reading**: sensor reading is always displayed.<br>**Remaining life**: Remaining life is always displayed. |
| | | Hide Bump Test LED flashing: checked, hides the flashing of the LEDs when performing the Bump Test. |
| | | Enable manual self-test: checked, enables manual self-test. |
| **4** | "Read" button | Allows to read device information and settings. |
| **5** | "Write" button | Transmits the new configuration on the device. |
| **6** | Button "Save Event Log" | Reads and exports in .csv format the event logs stored on the device. |
| **7** | Pulsante "Calibrazione" | Starts the sensor calibration procedure. |
| **8** | Seleziona file | Select the Firmware update file from the PC. |
| **9** | Button "Firmware Update" / "Cancel" | Start / Cancel the firmware update. |

## Language configuration

1. Click on the "language" button.
2. Select one of the available languages.
3. Click on "Font" to set font details.
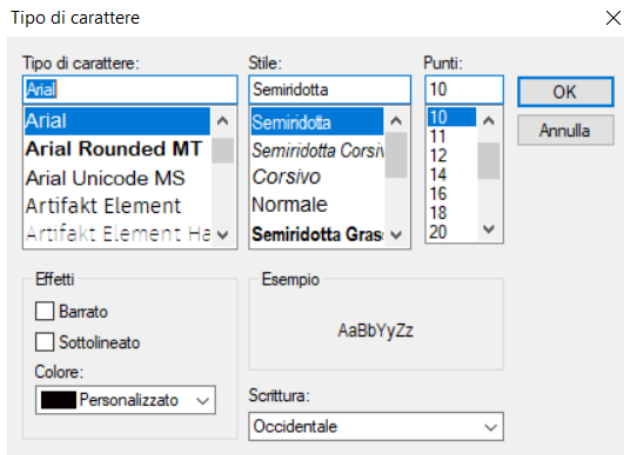


## Features

### Read device information and settings

- Click on "Read".

### Change device settings

1. After clicking on "Read Device" and reading the imformation and setting of the device, you can change the settings the device by clicking on the "⤢" and/or "☐" icons or directly typing in the value.
2. Click on "Write device" to save the changed settings to the **be safe SG**.

### Save event log

1. Click "Save Event Log."
2. The pop-up to save the .csv file will be displayed.
   Specify the folder and file name and save the document.

## Sensor calibration

Through the **be safe SG IR-Link PC software**, Calibration of **be safe SG** gas detectors can be performed, regardless of whether the instrument requires calibration or not, using certified gas cylinders.

### Procedure:

1. Place the device in an environment with fresh air.
2. **Click on the "Sensor Calibration" button** the screen appears through which you can set the gas concentration contained in the certified gas cylinder, which you will use to perform the calibration and start the calibration (example referred to **be safe SG H2S**):



Exits the screen
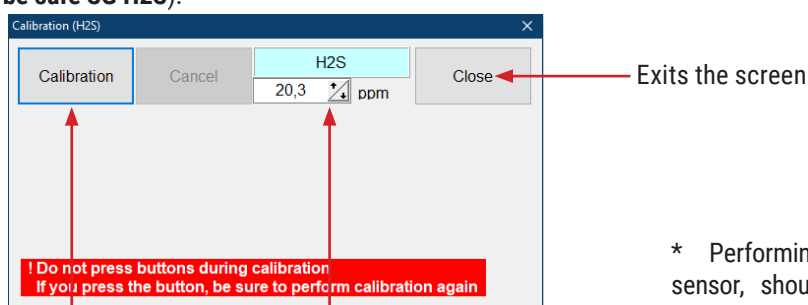
Set the gas concentration*

Start sensor calibration

\* Performing the calibration for the Oxygen sensor, should only be done with a certified gas concentration of 18% that cannot be changed. For other sensors, a different certified gas concentration can be used, within the range allowed by the App.

3. Click on "Calibration" to start calibration.

4. The device will perform the calibration of ZERO.

   Details on the progress of calibration, are displayed on the lower left corner of the App.

5. When the "OK" result of the Zero calibration is displayed on the App screen, proceed to the SPAN calibration.
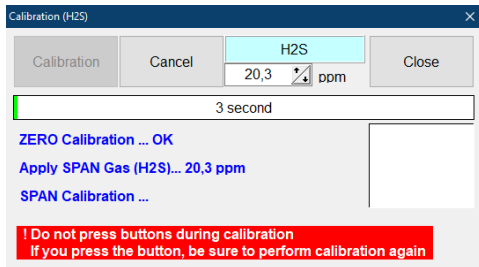
6. Connect the adapter and the certified gas cylinder. See the details in sections "11.1 Tools and necessary equipment" and "11.2 Wiring diagram".

7. Supply gas to the instrument. The instrument's display will show the message "C 90" ("C 20" for the O2 sensor) indicating the duration in seconds for which the instrument should be exposed to the calibration gas. The countdown starts when the sensor begins to detect the calibration gas.

8. After 90 seconds (20 seconds for the O2 sensor), the calibration will be completed.

   **To stop the calibration, click on "Cancel".**

   **If you start the SPAN calibration without exposing the instrument to the gas, the calibration will stop. The detector will continue to indicate the Calibration status, so the user can repeat the procedure.**

9. Wait for the calibration result:
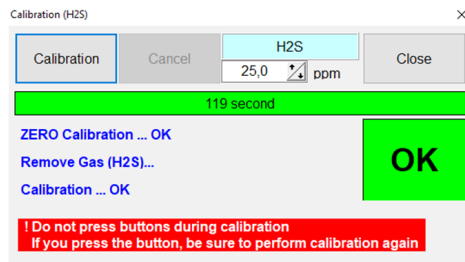
Result:

 - OK: Positive result indicated by the green square "".

 - Fail: Negative result indicated by the red square "" containing the error that caused the calibration to fail.

> **If the calibration fails, the device's display will show "CAL" and the flashing "⚠" icon.**
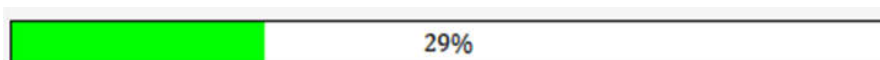> **Repeat the calibration, and if it fails again, contact Seitron support center.**

6. Stop the gas flow and remove the calibration adapter.

## Firmware Update

The manufacturer periodically updates the firmware to correct or improve the instrument's performance or to add additional features.

The update can be performed by the user following the simple instructions below:

1. Connect to the website www.seitron.com and download the firmware file available in the "Download - Firmware" section; this file is compressed with a .zip extension.

2. Open the compressed folder with a .zip extension and extract the file.

3. Click on the " " button to select the firmware update file previously downloaded from the website.

4. Click on the "Upgrade Firmware" button.

5. The progress of the firmware update is displayed in the progress bar. The firmware update will take from 5 to 10 seconds.

6. At the end of the update, the device will be restored.

## TROUBLESHOOTING

| SYMPTOM | |
|---|---|
| More than one **be safe SG IR-Link** connected to the PC is detected. | Make sure that only one **be safe SG IR-Link** is connected to the PC. |
| **be safe SG IR-Link** is not installed on the PC. | Delete the existing driver or program and reinstall it. If this symptom recurs after reinstallation, contact the Seitron service center. |
| The USB communication port of the PC to which **be safe SG IR-Link** is connected is not installed. | Make sure that **be safe SG IR-Link** is connected to the PC. Delete the existing driver or program and reinstall it. If this symptom recurs after reinstallation, contact Seitron service center. |
| **be safe SG IR-Link** is not detected by the PC. | Make sure that **be safe SG IR-Link** is connected to the PC. Make sure that the smooth surface of **be safe SG IR-Link** and the top of the **be safe SG** instrument are facing each other at a distance of about 5 cm. |
| Operating system not supported. | The operating system of the PC in use is not supported by **be safe SG IR-Link** or its driver. The operating system supported by **be safe SG IR-Link** is Windows XP or later. |
| An error occurred on **be safe SG IR-Link**. | Delete the existing driver or program and reinstall it. If this symptom recurs after reinstallation, contact the Seitron service center. |
| Connection error of **be safe SG IR-Link**. | Make sure that **be safe SG IR-Link** is connected to the PC. Make sure that the smooth surface of **be safe SG IR-Link** and the top of the **be safe SG** instrument are facing each other at a distance of about 5 cm. |
| Communication error | Make sure that the smooth surface of **be safe SG IR-Link** and the top of the **be safe SG** instrument face each other at a distance of about 5 cm. |