

# ***GasAlertMicroClip***

H<sub>2</sub>S, CO, O<sub>2</sub>, Combustibles

1, 2, 3, and 4-Gas Detector

Quick Reference Guide

**BW**  
Technologies  
by Honeywell

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- c) 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; or

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# GasAlertMicroClip

## Introduction

This quick reference guide provides basic information for the GasAlertMicroClip. Refer to the user manual on the accompanying CD-ROM for complete operating instructions. The GasAlertMicroClip gas detector (“the detector”) warns of hazardous gas at levels above user-selectable alarm setpoints.

The detector is a personal safety device. It is your responsibility to respond properly to the alarm.

### Note

*The detector is shipped with English as the default displayed language. Additional languages provided are Portuguese, Spanish, German, and French. The screens for the additional languages are displayed on the detector and in the corresponding Quick Reference Guide.*

## Safety Information - Read First

Use the detector only as specified in this guide, otherwise the protection provided by the detector may be impaired.

Read the following **Cautions** before using the detector.

### Cautions

- ⇒ **Warning: Substitution of components may impair Intrinsic Safety.**
- ⇒ **Caution: For safety reasons, this equipment must be operated and serviced by qualified personnel only. Read and understand the user manual completely before operating or servicing.**
- ⇒ **Charge the detector before first-time use. BW recommends the detector be charged after every workday.**
- ⇒ **Calibrate the detector before first-time use and then on a regular schedule, depending on use and sensor exposure to poisons and contaminants. BW recommends at least once**

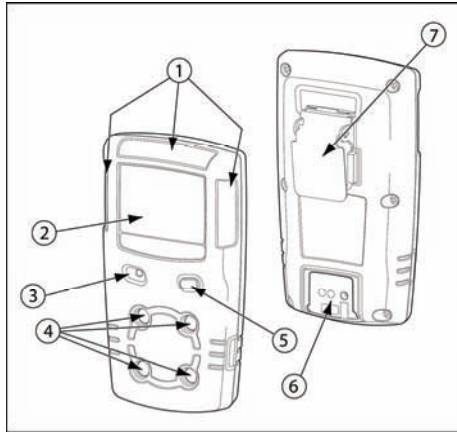
every 180 days (6 months).

- ⇒ The combustible sensor is factory calibrated to 50% LEL methane. If monitoring a different combustible gas in the % LEL range, calibrate the sensor using the appropriate gas.
- ⇒ Only the combustible gas detection portion of this instrument has been assessed for performance by CSA International.
- ⇒ Calibrate only in a safe area that is free of hazardous gas.
- ⇒ It is recommended that the combustible sensor be checked with a known concentration of calibration gas after any known exposure to contaminants/poisons (sulfur compounds, silicon vapors, halogenated compounds, etc.).
- ⇒ BW recommends to “bump test” the sensors, before each day’s use, to confirm their ability to respond to gas by exposing the detector to a gas concentration that exceeds the alarm setpoints. Manually verify that the audible and visual alarms are activated. Calibrate if the readings are not within the specified limits.
- ⇒ Caution: High off-scale readings may indicate an explosive concentration.
- ⇒ Any rapid up-scaling reading followed by a declining or erratic reading may indicate a gas concentration beyond upper scale limit, which

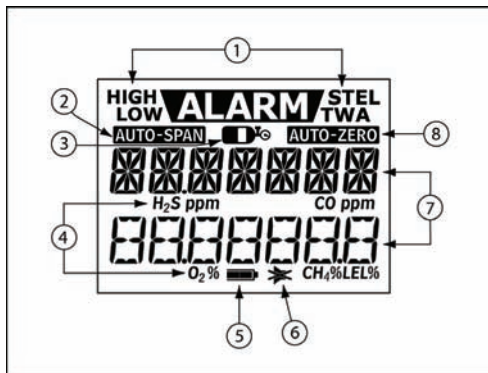
may be hazardous.

- ⇒ Extended exposure of the GasAlertMicroClip to certain concentrations of combustible gases and air may stress a detector element, which can seriously affect its performance. If an alarm occurs due to high concentration of combustible gases, recalibration should be performed, or if needed, the sensor replaced.
- ⇒ Protect the combustible sensor from exposure to lead compounds, silicones, and chlorinated hydrocarbons. Although certain organic vapors (such as leaded gasoline and halogenated hydrocarbons) may temporarily inhibit sensor performance, in most cases, the sensor will recover after calibration.
- ⇒ For use only in potentially explosive atmospheres where oxygen concentrations do not exceed 20.9% (v/v).

**Parts of the GasAlertMicroClip**




Item	Description
1	Visual alarm bars (LED)
2	Liquid crystal display (LCD)
3	Audible alarm
4	Sensors
5	Pushbutton
6	Charging connector / IR interface
7	Alligator clip





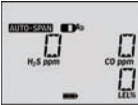


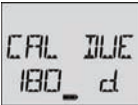

**Display Elements**

Item	Description
1	Alarm condition
2	Automatically span sensor
3	Gas cylinder
4	Gas identifier bars
5	Battery life indicator
6	Stealth mode
7	Numeric value
8	Automatically zero sensor

## Pushbuttons

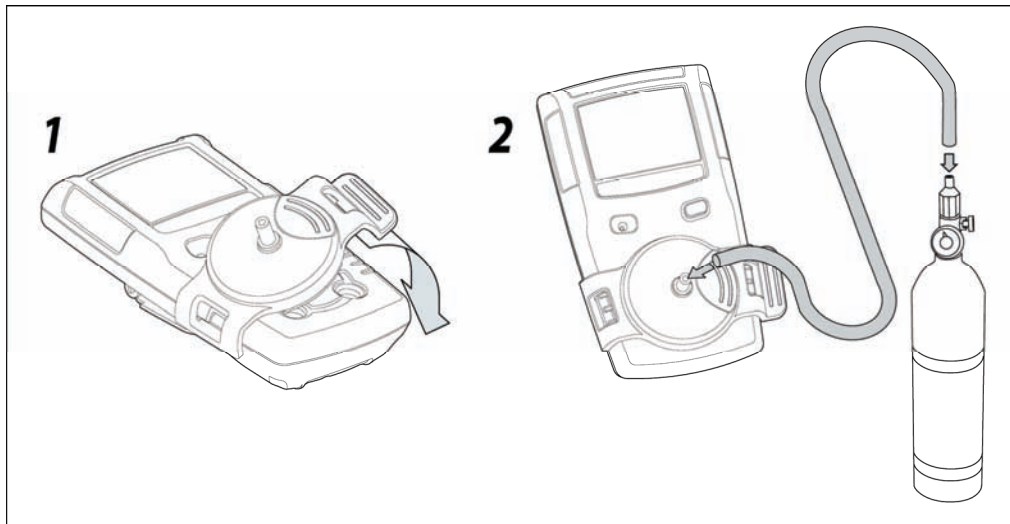
Pushbutton	Description
	<ul style="list-style-type: none"><li>● To activate the detector press ○.</li><li>● To deactivate the detector, press and hold ○ until the <b>OFF</b> countdown is complete and the LCD deactivates.</li><li>● To view the TWA, STEL, and maximum (MAX) hold readings, press ○ twice. To clear the TWA, STEL, and MAX readings, press ○ when the LCD displays <b>RESET</b>.</li><li>● To initiate calibration, press and hold ○ as the detector executes the <b>OFF</b> countdown and continue to hold ○ as the LCD briefly deactivates and then executes the <b>CAL</b> countdown. Release ○ when the <b>CAL</b> countdown is complete.</li><li>● To activate the backlight, press ○.</li><li>● To acknowledge latched alarms, press ○.</li><li>● To acknowledge a low alarm and disable the beeper, press ○ (if Low Alarm Acknowledge user option is enabled).</li></ul>

## Calibration

Procedure	Display	Procedure	Display
<p><b>⚠ Caution</b></p> <p><b>Calibrate only in a safe area and in an area that is free of hazardous gas. Do not calibrate the detector during or immediately after charging is complete.</b></p> <p>1. In a clean atmosphere, press and hold  as the detector performs the <b>OFF</b> countdown. Continue to hold  when the detector briefly deactivates.</p>		<p>4.  flashes when you connect the gas cylinder and apply gas at a flow rate of 250-500 ml/min.</p> <p>After a sufficient amount of gas has been detected (approximately 30 seconds) the detector emits a beep and <b>AUTO-SPAN</b> flashes while the detector completes the span.</p>	
<p>2. The detector then activates again and performs the <b>CAL</b> countdown. Continue to hold  until the countdown is complete to enter calibration.</p>		<p>5. The LCD then displays <b>CAL DUE</b>. It then displays the number of days remaining before the next calibration is due above each gas. Then the LCD displays the days until the next calibration due date before completing the calibration.</p>	
<p>3. <b>AUTO-ZERO</b> flashes while the detector zeroes all of the sensors and calibrates the oxygen sensor. If a sensor failed to auto zero, it cannot be spanned. Once auto zero is complete, the LCD displays <b>APPLY GAS</b>.</p>		<p style="text-align: center;"><i>Note</i></p> <p><i>The calibration cap should only be used during the calibration span process.</i></p> <p><i>Wind currents may cause false readings and poor calibrations.</i></p> <p><i>Do not calibrate the detector during or immediately after charging is complete.</i></p>	



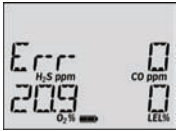


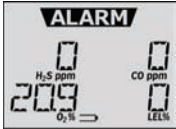

**Attach the Gas Cylinder to the Detector**



## Alarms

The following table lists the numerous alarms of the detector.


Alarm	Display	Alarm	Display
<p><b>Low Alarm:</b></p> <ul style="list-style-type: none"> <li>• Slow siren</li> <li>• Slow alternating flash</li> <li>• <b>ALARM</b> and target gas bar flash</li> <li>• Vibrator alarm activates</li> </ul>		<p><b>TWA Alarm:</b></p> <ul style="list-style-type: none"> <li>• Slow siren</li> <li>• Slow alternating flash</li> <li>• <b>ALARM</b> and target gas bar flash</li> <li>• Vibrator alarm activates</li> </ul>	
<p><b>High Alarm:</b></p> <ul style="list-style-type: none"> <li>• Fast siren</li> <li>• Fast alternating flash</li> <li>• <b>ALARM</b> and target gas bar flash</li> <li>• Vibrator alarm activates</li> </ul>		<p><b>STEL Alarm:</b></p> <ul style="list-style-type: none"> <li>• Fast siren</li> <li>• Fast alternating flash</li> <li>• <b>ALARM</b> and target gas bar flash</li> <li>• Vibrator alarm activates</li> </ul>	
<p><b>Multi-Gas Alarm:</b></p> <ul style="list-style-type: none"> <li>• Alternating low and high alarm siren and flash</li> <li>• <b>ALARM</b> and target gas bars flash</li> <li>• Vibrator alarm activates</li> </ul>		<p><b>Over Range (OL) Alarm:</b></p> <ul style="list-style-type: none"> <li>• Fast siren and alternating flash</li> <li>• <b>ALARM</b> and target gas bar flash</li> <li>• Vibrator alarm activates</li> </ul>	

Alarm	Display	Alarm	Display
<p><b>Sensor Alarm:</b></p> <ul style="list-style-type: none"> <li>Displays Err</li> </ul>		<p><b>Automatic Shutdown Alarm:</b></p> <ul style="list-style-type: none"> <li>Eight beeps and eight flashes</li> <li><b>LOW BAT</b> and <b>ALARM</b> display</li> <li>Vibrator alarm temporarily activates</li> <li>Displays <b>OFF</b> before turning off</li> </ul>	
<p><b>Low Battery Alarm:</b> (Confidence beep disabled)</p> <ul style="list-style-type: none"> <li>One beep and one flash every 5 seconds</li> <li> and <b>ALARM</b> flashes</li> </ul>		<p><b>Confidence Beep:</b></p> <ul style="list-style-type: none"> <li>One beep every 10 seconds</li> </ul>	

*Note*

Alarms can be set to be latching or non-latching. To confirm this setting, access the latching alarms option in the GasAlertMicroClip Soft Tools software. Local regulations may require a latching alarm.

If the detector is in stealth mode, it only vibrates in alarm mode (the audible and visual alarms are disabled). If the detector is in IR stealth mode, the IR LEDs and vibrator activate in alarm mode (the audible alarm is disabled).

If the Low Alarm Acknowledge option is enabled, the beeper can be disabled only during a low alarm by pressing . The vibrator and LEDs will function normally. If the alarm escalates to a high, STEL, or TWA alarm, the beeper reactivates.

The backlight activates during any alarm condition.

## Options

To access the user options, connect the detector to the IR Link adapter and use the GasAlertMicroClip Soft Tools software. Refer to the *GasAlertMicroClip Soft Tools manual* for complete instructions.

The following are the available user options:

1. **Sensors** (H<sub>2</sub>S, CO, O<sub>2</sub>, and LEL)
  - **Disabled:** Disables the sensor.
  - **Cal Gas:** Changes the span gas concentration for each sensor.
  - **Cal Interval:** Number of days remaining before the next calibration.
  - **Bump Interval:** Number of days remaining before the next bump check.
  - **Low Alarm:** The low alarm setpoint (all sensors).
  - **High Alarm:** The high alarm setpoint (all sensors).
  - **TWA Alarm:** The time-weighted average (TWA) alarm setpoint (toxic sensors only).
  - **STEL Alarm:** The short-term exposure limit (STEL) alarm setpoint (toxic sensors only).

- **STEL Interval:** Changes the short-term exposure limit (5-15 minutes; applicable to toxic sensors only).
- **Auto-Zero on Startup:** Auto zeroes the chosen sensor during activation (H<sub>2</sub>S, CO, and LEL sensors only).
- **O<sub>2</sub> Auto-Calibration on Startup:** Enables automatic oxygen calibration upon start-up.
- **LEL By Vol CH<sub>4</sub>:** Shows the LEL reading in % vol. assuming a methane environment.

2. **User Options**

- **Confidence Beep:** Enables the confidence beep.
- **Latching Alarms:** This option allows an alarm to remain active until the user acknowledges the alarm.
- **Safe Mode:** Enables the LCD to display **Safe** if the detector does not enter an alarm.
- **Stealth Mode:** When enabled, the beeper, backlight, and alarm LEDs are disabled. Only the vibrator activates.
- **IR Stealth Mode:** When enabled, the beeper and backlight are disabled. Only the vibrator and IR LEDs activate.

- **Low Alarm Acknowledge:** When enabled, the beeper can be disabled during low alarm if  $\bigcirc$  is pressed. The vibrator and alarm LEDs will function normally (H<sub>2</sub>S, CO, and LEL sensors only);
- **Force Calibration When Overdue:** Forces the detector into mandatory calibration if a sensor is overdue for calibration upon start-up;
- **Cal Lock:** It allows the detector to auto zero, but span needs to be conducted with an IR device;
- **Force Bump When Overdue:** Forces a bump check if the sensor has exceeded its bump check interval;
- **Bump Due Lock:** Forces the detector to search for an IR device to execute a bump check.

### 3. Language

Enables the LCD's language in English, French (**Français**), German (**Deutsch**), Spanish (**Español**), or Portuguese (**Português**).

## **Charging the Detector**

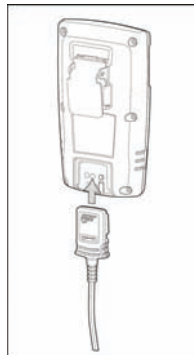
### **⚠ Warning**

**The battery can only be replaced by the manufacturer. Not complying with this might cause explosion danger.**

The battery should be charged after each workday. To charge the battery, deactivate the detector and insert the GasAlertMicroClip charging adapter (as shown in the following figure). Allow it to charge for 2-3 hours.

The detector must be charged in a non-hazardous atmosphere of 0°C-45°C (32°F-113°F).

To reach full battery capacity, allow the battery to fully charge and fully discharge three times.



**Maintenance**

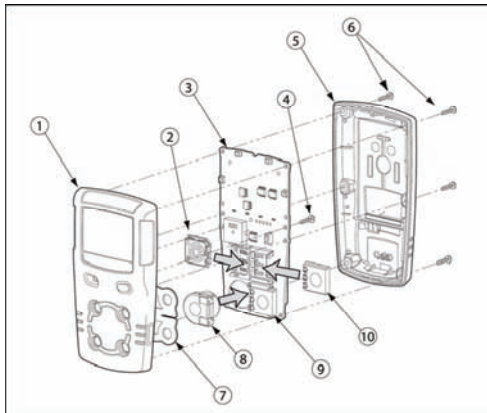
To keep the detector in good operating condition, perform the following basic maintenance as required:

- Calibrate, bump check, and inspect the detector at regular intervals.
- Keep an operations log of all maintenance, bump checks, calibrations, and alarm events.
- Clean the exterior with a soft damp cloth. Do not use solvents, soaps, or polishes.

**Replacing a Sensor or Sensor Filter****⚠ Warning**

To avoid personal injury, use only sensors specifically designed for the detector.

To replace a sensor or sensor filter, refer to the following figure, table, and set of instructions.



Item	Description
1	Front shell
2	LEL sensor
3	PCB
4	PCB screws (2)
5	Rear shell
6	Machine screws (6)
7	Sensor filter
8	O <sub>2</sub> sensor
9	H <sub>2</sub> S sensor
10	CO sensor

1. If the detector is activated, deactivate it.
2. Remove the six machine screws on the rear shell and remove the back cover.

*Note*

*Note the orientation of the battery PCB (bent up or laid flat).*

3. Remove the two screws on the PCB and remove the PCB.

*Note*

*Ensure the battery does not get damaged once the PCB is removed.*

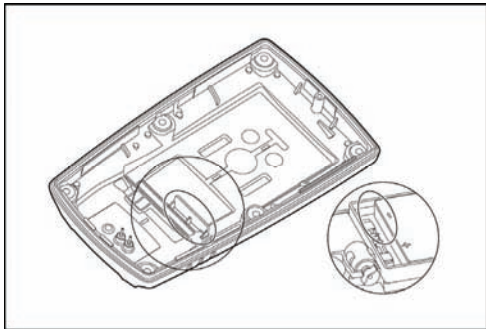
4. Remove the old sensor filter or slide/pull out the old sensor(s).
5. Insert a new sensor filter or sensor(s).

*Note*

*Detectors that are configured for 1, 2, or 3 gases may contain a dummy sensor in one of the four sensor locations.*

6. Re-assemble the detector. When assembling the detector, be aware of the following:
  - Ensure the charging contact pins inside the rear shell are aligned with the corresponding hole before inserting the rear shell in place. If the contact pins are bent, the battery will not charge properly.

- Verify that the battery PCB is in the same position as when the rear shell was removed (refer back to step #2).
- Visually inspect the battery to ensure that it has not been damaged before replacing the rear shell.
- Ensure the rib on the interior of the rear shell fits between the battery pack and the PCB (as shown in the following figure).



## Specifications

**Instrument dimensions:** 10.75 x 6.00 x 2.73 cm  
(4.2 x 2.4 x 1.1 in.)

**Weight:** 160 g (5.7 oz.)

**Operating temperature:** -20°C to +58°C (-4°F to +136°F)  
+50°C to +58°C is certified by CSA-International on the combustible sensor with  $\pm 5\%$  accuracy

**Storage temperature:** -40°C to +50°C (-40°F to +122°F)

**Operating humidity:** 0% to 95% relative humidity  
(non-condensing)

**Alarm setpoints:** May vary by region and are user-settable

### Detection range:

H<sub>2</sub>S: 0 – 100 ppm (1 / 0.1 ppm increments)

H<sub>2</sub>S: 0 – 200 ppm (1 ppm increments)

CO: 0 – 500 ppm (1 ppm increments)

CO: 0 – 1000 ppm (1 ppm increments)

O<sub>2</sub>: 0 – 30.0% vol. (0.1% vol. increments)

Combustible (LEL): 0 – 100% (1% LEL increments) or  
0 – 5.0% v/v methane

### Sensor type:

H<sub>2</sub>S, CO, O<sub>2</sub>: Single plug-in electrochemical cell

Combustibles: Plug-in catalytic bead



**O<sub>2</sub> measuring principle:** Capillary controlled concentration sensor

**Alarm conditions:** TWA alarm, STEL alarm, low alarm, high alarm, multi-gas alarm, over range (OL) alarm, low battery alarm, confidence beep, automatic shutdown alarm

**Audible alarm:** 95 dB+ at 30 cm (100 dB typical) variable pulsed beeper

**Visual alarm:** Red light-emitting diodes (LED)

**Display:** Alphanumeric liquid crystal display (LCD)

**Backlight:** Activates when the pushbutton is pressed and deactivates after 5 seconds. Also activates during an alarm condition.

**Self-test:** Initiated at activation

**Calibration:** Automatic zero and automatic span

**Oxygen sensor:** Automatic span on activation (selectable)

**User field options:** Confidence beep, latching alarms, enable/disable safe display mode, oxygen measurement, combustible sensor measurement, sensor disable, set calibration interval, force calibration, calibration lock, force bump, bump interval, bump due lock, stealth mode, IR stealth mode, language selection, enable/disable automatic oxygen calibration, enable/disable auto zero at start-up, set alarm setpoints, set span concentration values, and set STEL calculation period.

**Battery operating time:**

1 rechargeable lithium polymer: 10-12 hours (typical)

**Year of manufacture:** The detector's year of manufacture is determined from the serial number. The second and third number after the first letter determines the year of manufacture. E.g., H304-Y000001 = 2004 year of manufacture

**Approved batteries:**

**North America**

Approved batteries for product (standards EN50020, UL913, C22.2 No. 157)

**Rechargeable battery**

Lithium polymer

**Temperature code**

T4

**Battery charger:** GasAlertMicroClip charging adapter

**First-time charge:** 2-3 hours

**Normal charge:** 2-3 hours


**Warranty:** 2 years including sensors

**Approvals:**

Approved by CSA to both U.S. and Canadian Standards  
CAN/CSA C22.2 No. 157 and C22.2 152

ANS/UL – 913 and ANSI/ISA – S12.13 Part 1

**CSA** Class I, Division 1, Group A, B, C, and D



**ATEX** CE 0539  II 1 G EEx ia IIC T4

KEMA 06ATEX0056

**IECEx** Ex ia IIC T4

This equipment has been tested and found to comply with the limits for a Class B digital device, pursuant to Part 15 of the FCC Rules and ICES-003 Canadian EMI requirements. These limits are designed to provide reasonable protection against harmful interference in a residential installation. This equipment generates, uses and can radiate radio frequency energy and, if not installed and used in accordance with the instructions, may cause harmful interference to radio communications. However, there is no guarantee that interference will not occur in a particular installation. If this equipment does cause harmful interference to radio or television reception, which can be determined by turning the equipment off and on, the user is encouraged to try to correct the interference by one or more of the following measures:

- Reorient or relocate the receiving antenna.
- Increase the separation between the equipment and receiver.
- Connect the equipment into an outlet on a circuit different from that to which the receiver is connected.
- Consult the dealer or an experienced radio/TV technician for help.




D5867/2 English

iERP: 124030

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## DAILY BUMP TEST

iERP: 125538



### IMPORTANT NOTE

**BW recommends to “bump test” the sensor(s), before each day’s use to confirm their ability to respond to gas by exposing the detector to a gas concentration that exceeds the alarm setpoints. Manually verify that the audible and visual alarms are activated.**

**If any sensor fails the bump test, contact your local BW service department immediately.**