BW TECHNOLOGIES

GasAlertClip Extreme
2 or 3 Year Gas Detector

Instruction Sheet

Introduction

The GasAlertClip Extreme gas detector (the detector) is a personal safety device that warns when hazardous gas exceeds factory set alarm setpoints. The detector stores and transmits gas alarm event data. It is your responsibility to respond properly to the alarms.

Gas Detected	Unit of Measure
Oxygen (O_2)	Percent by volume (%)
Carbon monoxide (CO)	Parts per million (ppm)
Hydrogen sulfide (H_2S)	Parts per million (ppm)
Sulfur dioxide (SO_2)	Parts per million (ppm)

⚠ Safety Information - Read First

*Warning:* **Substitution of components may impair Intrinsic Safety.**

Warning: **To prevent ignition of flammable or combustible atmospheres, disconnect power before servicing.**

⇒ **Do not activate the detector after the date on the package.**
⇒ **This product is a gas detector, not a measurement device.**
⇒ **Perform a self-test each day prior to use.**
⇒ **Ensure the sensor grill is free of dirt and debris.**
⇒ **Ensure the sensor grill is not obstructed.**
⇒ **Periodically test the response of the sensor to gas by exposing the detector to a target gas concentration that exceeds the low alarm setpoint. Manually verify that the audible and visual alarms are activated.**
⇒ **Periodically calibrate the GasAlertClip Extreme O_2.**

♻🗑 *Note:*

This instrument contains a lithium battery. Do not mix with the solid waste stream. Spent batteries should be disposed of by a qualified recycler or hazardous materials handler.

Parts of the GasAlertClip Extreme
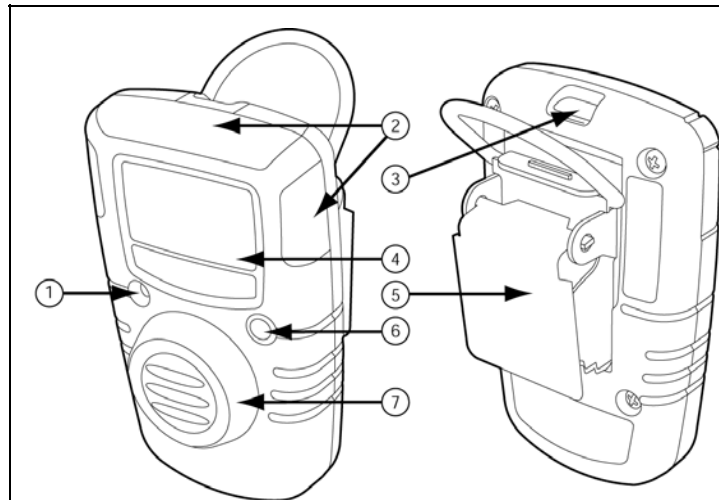
1	Audible alarm
2	Visual alarm
3	Infrared download port
4	Liquid crystal display (LCD)
5	Alligator clip
6	Start/test button
7	Sensor and sensor grill

Display Elements

1	Maximum exposure in alarm
2	Data transmission
3	High and low alarm setpoints
4	Self-test status
5	Gas type
3 / 6	Alarm condition
7 / 8	Detector life-remaining indicators
1 / 8	Months/hours/days since last maximum exposure

Pushbutton

Pushbutton	Description
◯	• To activate the detector, press and hold ◯ for 5 seconds. • Press ◯ within 24 hours of receiving a gas alarm to view the maximum gas exposure. • When **Test** displays, press and hold ◯ for approximately 1 second to activate the self-test. • To calibrate the O_2 detector, press and hold ◯ for approximately 3 seconds. • To display the gas alarm setpoints, press ◯. • To transmit the data, press ◯ when **Prn** and 📶 display.

Activating the Detector

Press and hold ◯ for 5 seconds.

Note: Once activated the detector cannot be deactivated, except after a battery life-ending alarm. Refer to Safety Shutdown Mode.

The self-test must be performed in an atmosphere that is free of background gas.

After a self-test is performed, wait 30 seconds before using to ensure the detector accurately detects gas.

Prior to each days use, a self-test of the detector must be performed. When **Test** displays on the LCD, a self-test is required. When the self-test is performed and passes, ☑ displays to confirm the tests are successful. Confirm that the following tests (1-5) are performed.

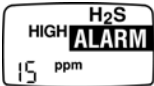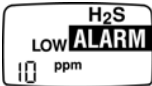Press ◯ and release (approximately 1 second) to initiate the self-test. The tests are as follows:

1. The detector emits one beep, one flash, and one vibration.
2. The detector sets the battery life-remaining clock.
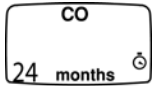
3. All LCD elements display.

4. **Test** flashes while the sensor integrity and battery life are tested.
5. The low and high alarm setpoints display.

Self-Test Pass

When the self-test is successful, the detector emits a short beep and a single vibration.

☑ then displays to verify that the self-test has passed.

Twenty hours after performing the self-test, **Test** again displays to indicate that a self-test is required.

Self-Test Fail

If the self-test fails, the detector emits five short beeps and flashes before displaying a blank screen. The LCD then returns to the normal operating screen and again displays **Test**.

Repeat the self-test.

Note: If the self-test fails three consecutive times, the LCD displays a blank screen and the detector deactivates (safety shutdown mode).

Automatic Battery Test

The battery is automatically tested every 2 hours. If the battery test fails, another automatic test is initiated 30 minutes later.

Note: After five consecutive battery test failures, the LCD displays a blank screen and the detector deactivates (safety shutdown mode).

Detector Life-Remaining Clock

The detector life-remaining clock indicates how much longer the detector will operate. The LCD displays the countdown value of remaining months, days, and then hours.

The detector continues to operate for a maximum of 8 hours after the detector life-ending alarm initiates. Press ◯ to deactivate the detector. For more information, refer to Alarms.

Safety Shutdown Mode

The LCD displays a blank screen when initiating safety shutdown mode. The detector beeps, flashes, and vibrates rapidly (twice per second) until the battery loses power. To deactivate the detector before the battery loses power, press ◯. Contact BW Technologies.

The detector initiates safety shutdown mode if the

- self-test fails three consecutive times,
- automatic battery test fails five consecutive times, or
- detector has not been manually deactivated within 8 hours of initiating the detector life-ending alarm.
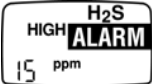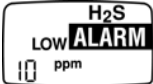
Gas Alarm Setpoints

The following is a list of the factory alarm setpoints.

Model	Low Alarm Setpoint	High Alarm Setpoint
GasAlertClip Extreme O_2	19.5%	23.5%
GasAlertClip Extreme CO	35 ppm	200 ppm
GasAlertClip Extreme H_2S	10 ppm	15 ppm
GasAlertClip Extreme SO_2	5 ppm	10 ppm

Note: Detector may be configured with customer specified alarm setpoints.

Displaying the Gas Alarm Setpoints

Press ◯ to display the alarm setpoints.

Alarm setpoints are factory configured and cannot be modified.

Alarms

Display	Audible Alarm	Visual Alarm	Vibration Alarm
Low Gas Alarm 	One slow beep every second	One slow flash every second	One slow vibration every second
High Gas Alarm 	Two fast beeps every second	Two fast flashes every second	Two fast vibrations every second
Life-Ending Alarm 	Eight slow beeps per minute	Eight slow flashes per minute	Eight slow vibrations per minute

Note: When the gas level returns to the acceptable range, the gas alarm stops.

The life of the battery decreases rapidly when in alarm conditions.

*The battery life-ending alarm occurs when the battery life-remaining clock displays **0 hours**. The detector will continue to operate for 8 hours before automatically deactivating.*
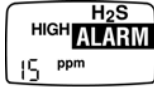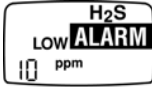
Maximum Gas Exposure

The detector records the maximum gas exposure that is in alarm and begins calculating the number of hours from when the maximum exposure occurred.

For each new exposure greater than the current maximum exposure, the detector resets the maximum gas exposure to the new level and resets the **hours** to **0**. After 24 hours of gas readings in the acceptable range, the detector resets both values to **0**.
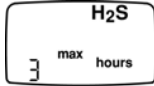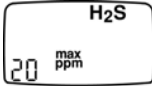
Viewing the Maximum Gas Exposure

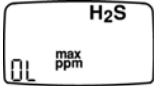Press ◯ within 24 hours of receiving a gas alarm. The LCD displays the following:

The low and high alarm setpoints.

If a maximum gas exposure has occurred within the last 24 hours, the maximum gas exposure screens display.
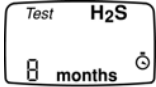

For exposures beyond the detection range, over limit (**OL**) displays.

Performing a Self-Test

When **Test** displays, the self-test must be performed.

The self-test is activated prior to any other function. Press ◯ to initiate.

Note: The self-test must be performed in an atmosphere that is free of background gas.

After a self-test is performed, wait 30 seconds before using to ensure the detector accurately detects gas.

To perform a self-test, press and hold ◯ for approximately 1 second. Confirm that the following tests are performed.

1. The detector emits one beep, one flash, and one vibration.
2. All LCD elements display.
3. **Test** flashes while the sensor integrity and battery life are tested.
4. The low and high alarm setpoints display.
5. If an alarm has occurred in the last 24 hours, the LCD displays the maximum gas exposure value and the hours that have lapsed since the exposure.
6. **Prn** and 📶 flash.

Note: If ◯ is pressed when the self-test pass (☑) icon displays, steps 1-3 will be bypassed.

For information regarding a self-test pass or fail, refer to the Self-Test Pass and Self-Test Fail.

Calibrating the Oxygen (O_2) Detector

Every 30 days when the O_2 detector is due to be calibrated, the LCD flashes **CAL** and the detector life-remaining value to indicate that calibration is due.

To calibrate the O_2 detector, complete the following:

1. Calibrate the detector only in a normal atmosphere (20.9% O_2) that is free of hazardous gas.
2. Press and hold ◯ for approximately 3 seconds.
3. The detector emits one beep, one flash, and displays the following screen:

Successful Calibration: The detector emits one vibration and one extended beep to indicate that calibration is successful.

Unsuccessful Calibration: If the detector does not beep or vibrate after a calibration, repeat steps 1 and 2 again. If the second attempt is unsuccessful, contact BW Technologies.

Gas Event Data Transmission

The detector stores the last ten alarm events. The recorded data includes the

- serial number,
- detector life-remaining values (months/days/hours),
- self-tests that have been performed,
- total number of events that have occurred,
- event type,
- duration of all events encountered,
- gas type,
- alarm level(s) (ppm or %),
- time elapsed since the alarm occurred (days/hours/minutes), and
- duration of the alarm (minutes/seconds).

Two options are provided to transmit the gas event data: 1) Transfer data to a PC using an IR data link or 2) Print the data using the handheld IR printer.

Transfer Data
Transferring Data to a PC

To transfer the data to a PC, complete the following:

1. Connect the IR data link to the PC. Activate the IR datalink.
2. Position the detector and the device as shown in the following illustration.
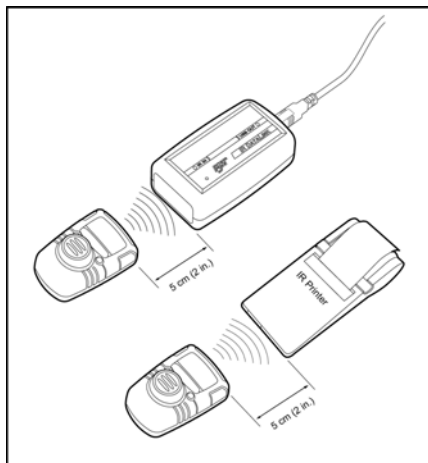
3. From the detector, press ◯ to access the transmission screen.
4. **Prn** and 📶 flash on the detector LCD. Within 5 seconds, press ◯ to begin the transmission.
5. While data is being transmitted, ⏱ displays and 📶 flashes. A countdown timer displays as a percentage value **(70%)** indicates how much data remains to be transmitted.
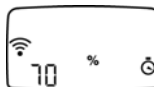
Transferring Data to a Printer

To transfer data using the handheld IR printer, complete the following:

Using the handheld IR printer, complete steps 1-5 as listed for Transferring Data to a PC.

Below is a print out example from the handheld IR printer.

```
        BW Technologies
        GasAlertClip Eventlog
        S/N: H304-X008742

Date:....................................
Time: ...................................
User:....................................
...........................................

Life remaining:
24 (or 36) months

Self tests:
1

Total events/duration:
1 / < 1 min.

Peak exposure:
15.0 %vol O2
Time since alarm began:
3 mins
Alarm duration:
12 secs
```

Accessories

- Test cap and hose: **GA-TC-1**
- Infrared handheld printer: **GPR-PRINTER2***
- Printer paper replacement, 3 rolls: **GPR-PP-K4**
- Automatic test station: **GA-TS02**
- GasAlertClip Extreme MicroDock II docking module:

  H = Hydrogen sulfide docking module

  M = Carbon monoxide docking module

  S = Sulfur dioxide docking module

  X = Oxygen docking module

  Consult your sales representative for complete order numbers and full descriptions.

- MicroDock II automatic test/calibration station: **DOCK2-2-##-##**
- IR DataLink: **GA-USB2**
- Neck strap with safety release: **GA-NS-1**
- Alligator clip (non-conductive): **GA-AG-1**
- Alligator clip (stainless steel): **GA-AG-2**
- Hard hat clip: **GA-HC-1** (for use with alligator clip **GA-AG-1** or **GA-AG-2**)
- Belt clip: **GA-CL-1**
- Portable product training video: **GA-CDT1**
- GasAlertClip CD-ROM instructions: **GA24XT-CDM**

*For delivery with 220 VAC charger, add suffix (-UK) for United Kingdom, (-EU) for European, and (-AU) for Australian.

General Specifications

Shelf life	1 year before activation
Weight	76 g (2.7 oz.)
Instrument dimensions	28 x 50 x 81 mm (1.1 x 2.0 x 3.2 in.)
Operating temperature	H_2S: -40 to $+50^oC$ / -40 to $+122^oF$ CO: -30 to $+50^oC$ / -22 to $+122^oF$ SO_2: -30 to $+50^oC$ / -22 to $+122^oF$ O_2: -20 to $+50^oC$ / -4 to $+122^oF$ Internal vibrating operates to: -15^oC / $+5^oF$
Operating humidity	5% to 95% relative humidity (non-condensing)
Audible alarm	$\approx$ 95 dB at 30 cm (1 ft.)
Visual alarm	Flashing, wide-angled alarm lens with quad red LEDs plus alarm LCD readout.
Display	Liquid crystal display (LCD)
Sensor type	Electrochemical cells
Detection technique	Instantaneous alarm
Battery	Lithium, non-replaceable
Ratings and certifications	Classified by UL to both U.S. and Canadian Standards as intrinsically safe for Class I, Division 1, Group A, B, C, D and Class I, Zone 0, Group IIC ATEX: CE 0539 ⟨Ex⟩ II 1 G EEx ia IIC T4 DEMKO 03 ATEX 0321968 IECEx CE: European Conformity ABS Type Approved VA-348-169-X
Ingress protection	IP 66/IP 67
EMI/RFI	Complies with EMC Directives 89/336/EEC

Safety Specifications

Maximum operating life	24 Month Detector: 2 years after activation, assuming 3-5 minutes of alarm time/day 36 Month Detector: 3 years after activation, assuming 1 minute of alarm time/day
Detection range	H_2S: 0 to 100 ppm CO: 0 to 300 ppm O_2: 0 to 30% by volume SO_2: 0 to 100 ppm
Alarm setpoints	Instant low and instant high
Calibration	H_2S, CO, SO_2: Not required O_2: Self-calibrating

Note: This product has been classified for use in atmospheres not more than 21% v/v O_2.

Event Logging Specifications

Number of stored events	Up to ten events encountered. If more than ten, the older event are replaced by the newer events.
Data transmission method	Via infrared port to thermal printer or via IR Datalink to PC (for ordinary locations only)
Information transmitted	Serial number Life remaining Self-tests performed Total number and duration of all events encountered Last ten events: Maximum exposure, MicroDock bump check, or O2 calibration Data shown for maximum exposures and bump checks: Gas type and alarm level in ppm or % Time elapsed since the alarm occurred in days, hours, and minutes Duration of alarm in minutes and seconds
Data transmission time	45 seconds plus 10 seconds per record

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 the 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.

Contacting BW Technologies

To contact BW Technologies call:
USA: 1-888-749-8878
Canada: 1-800-663-4164
Europe: +44 (0) 1869-233004
China: +86-29-88279122

Address correspondence to:

BW Technologies LP
2840 – 2nd Avenue S.E.
Calgary, AB
T2A 7X9
CANADA

Email us at: bwgas@bwgas.com.cn
Visit BW Technologies' web site at: www.bwgas.com.cn

Canada	USA	Europe
BW Technologies LP	BW America	BW Europe
2840 - 2 Ave. SE	3279 West Pioneer Parkway	101 Heyford Park
Calgary, AB	Arlington, TX	Upper Heyford, Oxfordshire
Canada T2A 7X9	USA 76013	United Kingdom OX25 5HA

Warranty

LIMITED WARRANTY & LIMITATION OF LIABILITY

BW Technologies LP (BW) warrants this product to be free from defects in material and workmanship under normal use and service for a period of two or three years (depending upon detector), beginning on the date of activation. This Warranty is valid only if the detector is activated by the date on the package. This warranty extends only to the sale of new and unused products to the original buyer. BW's warranty obligation is limited, at BW's option, to refund of the purchase price, repair, or replacement of a defective product that is returned to a BW authorized service center within the warranty period. In no event shall BW's liability hereunder exceed the purchase price actually paid by the buyer for the Product.

This warranty does not include:

a) fuses, disposable batteries or the routine replacement of parts due to the normal wear and tear of the product arising from use;

b) any product which in BW's opinion, has been misused, altered, neglected or damaged by accident or abnormal conditions of operation, handling or use;

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

The obligations set forth in this warranty are conditional on:

a) proper storage, installation, calibration, use, maintenance and compliance with the product manual instructions and any other applicable recommendations of BW;

b) the buyer promptly notifying BW of any defect and, if required, promptly making the product available for correction. No goods shall be returned to BW until receipt by the buyer of shipping instructions from BW; and

c) the right of BW to require that the buyer 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.

THE BUYER AGREES THAT THIS WARRANTY IS THE BUYER'S SOLE AND EXCLUSIVE REMEDY AND IS IN LIEU OF ALL OTHER WARRANTIES, EXPRESS OR IMPLIED, INCLUDING BUT NOT LIMITED TO ANY IMPLIED WARRANTY OF MERCHANTABILITY OR FITNESS FOR A PARTICULAR PURPOSE. BW 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 OR ANY OTHER THEORY.

Since some countries or states do not allow limitation of the term of an implied 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.