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°C / -40 to +122°F
CO: -30 to +50°C / -22 to +122°F
SO_2: -30 to +50°C / -22 to +122°F
O_2: -20 to +50°C / -4 to +122°F

Internal vibrating operates to: -15°C / +5°F

Operating humidity: 5% to 95% relative humidity (non-condensing)

Audible alarm: ≈ 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 Ex ia IIC T4
DEMKO 08 ATEX 0814213
IECEx: Ex ia IIC T4
IECEx UL 08.0018
CE: European Conformity
ABS Type Approved VA-348-169-X

Ingress protection: IP 66/IP 67

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 1.5 minutes 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 events 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 II bump check, O_2 calibration, or auto zero

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.

Limited Warranty & Limitation of Liability

BW Technologies (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 provisions.

Contacting BW Technologies by Honeywell

To contact BW Technologies by Honeywell call:

USA: 1-888-749-8878
Canada: 1-800-663-4164
Europe: +44 (0) 1295 700300
Other countries: +1-403-248-9226

Email us at: info@gasmonitors.com
Visit BW Technologies by Honeywell's web site at: www.gasmonitors.com

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Calgary, AB
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3279 West Pioneer Parkway
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USA 76013

BW Technologies by Honeywell
Europe
5 Canada Close
Banbury, Oxfordshire
United Kingdom OX16 2RT

EC Declaration of Conformity

Manufacturer:
BW Technologies
2840-2 Ave SE
Calgary, Alberta
Canada T2A 7X9

Products covered by this declaration:
GasAlertClip Extreme

Description:
Disposable, water resistant, single gas detector (detects 1 of 4 different toxic or oxygen gases).

The technical file is maintained at the manufacturer's location

Equipment and protective systems in potentially explosive atmospheres:
The product(s) listed above conform to the relevant provisions of ATEX Directive 94/9/EC of March 23, 1994 and 89/336/EEC & 2004/108/EC. Conformity has been demonstrated with reference to the following Harmonized European Standards

Standard	Description
EN 60079-11:2007	Electrical apparatus for explosive atmospheres–Part 11: Intrinsic Safety
EN 50270:2006	Electromagnetic Compatibility – Electrical apparatus for the detection and measurement of combustible gases, toxic gases, or oxygen
EN 60079-0:2006	Electrical apparatus for explosive atmospheres – part 0: General Requirements
EN 60079-26:2004	Explosive atmospheres – part 26: Equipment with equipment protection level (EPL) Ga
IEC 60079-11:2006	Electrical apparatus for explosive atmospheres–Part 11 Intrinsic Safety

UL International DEMKO A/S Testing and Certification
Lyskaer 8, PO Box 514
Dk-2730
Herlev, Denmark
Identification Number: 0539

Notified Body	Document	Identification Number	Date
DEMKO A/S	EC Type Examination Certificate	08 ATEX 0814213	2009-01-16

Conformity of Production
The manufacturer declares herewith that the production of all product(s) listed above meets the requirements of ISO 9001:2000. NSF International Strategic Registrations Quality Registrar, Canada under certificate No. 99167, certified this quality system on February 27, 2003.

Name: Thomas A. Crawford, P. Eng
Position: Manager Product Compliance, Certification & Conformity

Signature:

Factory addresses

System Sensor de Mexico S DE RL DE C V
Parque Industrial Intermex
Ave Valle Del Cedro 1681 CP 32570
Juarez Chih. Mexico

BW Technologies by Honeywell
2840 - 2 Avenue S.E.
Calgary, AB
Canada T2A 7X9

BW TECHNOLOGIES
BY HONEYWELL
GasAlertClip Extreme
2 or 3 Year Gas Detector
Instruction Sheet

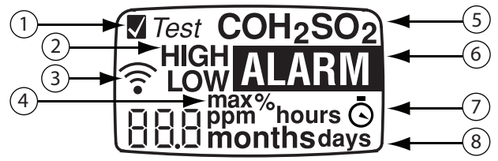
D2139/9 [English]
iERP: 128373

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.

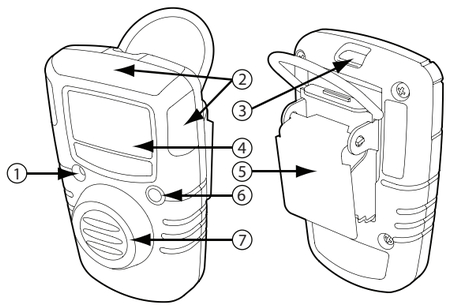
Gas Detected	Unit of Measure
Oxygen (O_2)	Percent by volume (%)
Carbon monoxide (CO)	Parts per million (ppm)
Hydrogen sulfide (H_2S)	Parts per million (ppm)
Sulfur dioxide (SO_2)	Parts per million (ppm)

Display Elements



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

Parts of the GasAlertClip Extreme



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

⚠ *Safety Information - Read First*

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

***Warning*: Bump test the O_2 sensor before each day's use to confirm its 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.**

***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, debris, and is not obstructed.**
- **Calibrate and bump test the detector in an ordinary location.**
- **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. Calibrate if the reading are not within the specified limits.**
- **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.

Pushbutton

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

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.

Performing a Self-Test

Note: The self-test must be performed in a safe atmosphere that is free of hazardous gas.

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

The self-test is activated prior to any other function. Prior to each day's 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 successful, ☑ displays.

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

The detector beeps and vibrates once, and the LEDs flash once.

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

1.


3.


Note: If a self-test is activated without **Test** *being displayed, steps #1-3 are bypassed.*

Self-Test Pass

If the self-test is successful, the detector beeps and vibrates once.

☑ displays to confirm the self-test was successful.

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

Self-Test Fail

If the self-test fails, the detector beeps five times and the LEDs flash before displaying a blank screen. The LCD then returns to the normal operation 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. Refer to 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. Refer to 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 activates. Press ◯ to deactivate the detector. For more information, refer to Alarms.

Safety Shutdown Mode

The LCD displays a blank screen when intiating safety shutdown mode. The detector beeps and vibrates, and the LEDs flash two times a second for 15 seconds. Then the LCD displays **OFF** or an error code, depending on the reason for safety shutdown mode.

If the event logs have not been downloaded, contact BW Technologies by Honeywell.

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 the detector life-ending alarm activating.

Factory Gas 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. Contact BW Technologies by Honeywell.

Displaying the Factory Gas Alarm Setpoints

Press ◯ during normal operation to display the factory gas alarm setpoints.

Alarm setpoints are factory configured and cannot be modified.

Performing an Auto Zero *(for H_2S, SO_2, and CO only)*

An auto zero can only be performed when the low alarm setpoint is at or below the following setpoints.

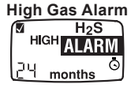
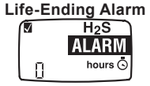
Model	Low Alarm Setpoint
GasAlertClip Extreme CO	25 ppm
GasAlertClip Extreme H_2S	5 ppm
GasAlertClip Extreme SO_2	3 ppm

Note: The auto zero must be performed in a safe atmosphere that is free of hazardous gas.

1. Press ◯ for 3 seconds in a safe area, free of hazardous gas. If a self-test has been initiated within 22 hours, the following screen displays.

   If a self-test has not been initiated in the last 22 hours, the detector performs a self-test. Refer to Performing a Self-Test.
2. The low alarm setpoint and high alarm setpoint display.
3. If an alarm has occurred in the last 24 hours, the LCD displays the maximum gas exposure value and the hours that have elapsed since the exposure.
4. **Prn** and ᯤ flash.

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 	One beep, flash, and vibration every 30 seconds	One beep, flash, and vibration every 30 seconds	One beep, flash, and vibration every 30 seconds

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

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 triggers an alarm condition and begins calculating the number of hours since the maximum exposure.

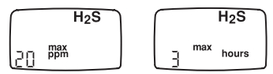
For each new exposure greater than the current maximum exposure, the detector resets the maximum gas exposure to the new level and resets the **hours** to **0**. After 24 hours of gas readings in the acceptable range, the detector resets both values to **0**.

Viewing the Maximum Gas Exposure

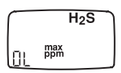
Press ◯ within 24 hours of receiving a gas alarm. The LCD displays the following:

The low and high alarm setpoints.

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



If the maximum gas exposure is beyond the detection range, over limit (**OL**) displays.



Calibrating the Oxygen (O_2) Detector

Every 30 days, a calibration is due for the O_2 detector. The LCD flashes **CAL** and the detector life-remaining value displays.

A calibration may also be performed if the O_2 detector has not been used recently or is in false alarm.

⚠ Warning

If a calibration is required for a false alarm, verify it is in false alarm and ensure the calibration is performed in safe area that is free of hazardous gas in an atmosphere of 20.9% oxygen.

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 4 seconds. If a self-test has been initiated within 22 hours, the following screen displays.

   If a self-test has not been initiated in the last 22 hours, the detector performs a self-test. Refer to Performing a Self-Test.
3. **CAL** flashes. While **CAL** is flashing, press and hold ◯ for 4 seconds.
4. The detector beeps and flashes. **O2** flashes on the LCD.

Successful Calibration: The detector beeps and vibrates once to indicate that calibration is successful and returns to normal operation.

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 by Honeywell.

Note

Bump test the O_2 sensor before each day's use to confirm its 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.

Gas Event Data Transmission

The detector stores the last ten events such as maximum gas exposure, bump test, and auto zero. 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:

- Transfer data to a PC using an IR DataLink

  Or
- 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 DataLink to the PC.
2. Position the detector and the device 2 in. (5 cm) apart.
3. From the detector, press ◯ to access the transmission screen.
4. **Prn** and ᯤ flash on the detector LCD. Within 5 seconds, press ◯ to begin the transmission.
5. While data is being transmitted, ⏱ displays and ᯤ flashes. A countdown timer displays as a percentage value (**70%**) and indicates how much data remains to be transmitted.

6. When data transmission is complete, the detector beeps and vibrates once.

For more information, refer to the *IR DataLink User Manual.*

Transferring Data to a Printer

To transfer data using the handheld IR printer, complete steps 2-5 as listed for Transferring Data to a PC.

Corporate Headquarters
Calgary, Alberta

GasAlertClip Extreme
129374

ERRATA CARD

The following information has changed in the GasAlertClip Extreme User Manual 128373 (D2139/9)

Calibrating the Oxygen (O_2) Detector

Every 30 days the O_2 detector is due for calibration. The LCD flashes **CAL** and the detector life-remaining value, indicating that calibration is due.

To calibrate the O_2 detector, complete the following:

Calibrate the detector only in a normal atmosphere (20.9% O_2) that is free of hazardous gas.

Press and hold ◯ for 3 seconds.

The detector beeps and flashes once, and displays the following screen.

Successful Calibration: The detector beeps and vibrates once to indicate that calibration is successful and returns to normal operation.

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 by Honeywell.

Contacting BW Technologies by Honeywell

To contact BW Technologies by Honeywell call:

USA: 1-888-749-8878
Canada: 1-800-663-4164
Europe: +44 (0) 1295 700300
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