PRINCE GEORGE'S COUNTY, MARYLAND
FIRE/EMERGENCY MEDICAL SERVICES DEPARTMENT GENERAL ORDER

General Order Number: 05-23	**Effective Date:** November 14, 2017
Division: Emergency Medical	
Chapter: Carbon Monoxide Monitoring for EMS Units	
By Order of the Fire Chief: Benjamin M. Barksdale	**Issue Date:** November 14, 2017

POLICY

The purpose of this General Order is to establish guidelines for the use of the Honeywell BW "Two-Year" single gas carbon monoxide detector.

DEFINITIONS

Detector – Honeywell BW "Two-Year" single gas carbon monoxide detector.

EMS Unit – The specific radio identifier assigned to the crew responding on a piece of apparatus.

Tour of Duty – Period of time the crew is assigned to and responsible for the operational readiness of the response apparatus.

Vehicle – The individual piece of apparatus, to which an M number is assigned.

PROCEDURES / RESPONSIBILITIES

I. General Information

A. During routine responses, Fire/Emergency Medical Service (EMS) personnel could unknowingly be exposed to a colorless, odorless, and tasteless toxic gas known as carbon monoxide (CO). Due to this risk, all EMS units are issued a carbon monoxide detector. This detector, designed for personnel safety, will provide an alert when exposed to dangerous levels of carbon monoxide.

B. Carbon monoxide is hazardous because it binds to hemoglobin found in red blood cells. This prevents effective transportation of oxygen throughout the body, which results in tissue hypoxia.

C. Signs and symptoms of carbon monoxide exposure include, but are not limited to:

1. Mild – headache, nausea, vomiting, dizziness, blurred vision.
2. Moderate – confusion, syncope, chest pain, tachycardia, weakness.
3. Severe – hypotension, palpitations, respiratory arrest, pulmonary edema, seizures, coma, cardiac arrest.

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II. Distribution

A. Each EMS unit is issued one (1) yellow detector.

B. This detector is kept with the unit at all times.

    1. All EMS units will keep the detector affixed to the OIC's portable radio strap at all times.

    2. The detector is a piece of equipment assigned to the EMS unit, not the vehicle.

III. Operation

A. Supervisors are responsible for ensuring that the detector is present and accounted for by crews at the beginning of each "tour of duty."

    1. If the detector is missing, the crew member must notify the immediate supervisor, complete a Loss Damage Report, and contact an EMSDO for replacement.

B. Normal Screen:

    1. The crews should refrain from pushing any buttons on the detector unless it is necessary to "ZERO the sensor." This should only be done when the detector provides a prompt to do so. See Attachment B for the "Zero the Sensor" procedure.

    2. The front of the detector, containing the "sensor," shall be kept free and clear of obstructions.

    3. The device is powered by a sealed battery with a two (2) year life and is not replaceable.

C. Maintenance:

    1. The detector is designed to be maintenance free.

    2. If the detector is broken or appears to be malfunctioning, contact an EMSDO for replacement.

    3. At the end of the detector's operating life cycle, the display will show a 24-hour warning. Devices are to be removed from service and replaced through the EMSDO.

D. Alarms and Actions:

    1. If the unit should activate (alarm) at any point during a call, the crew should:
        a. Immediately remove themselves and any other occupants from the structure.
        b. Notify Public Safety Communications and request the appropriate assignment for a CO leak.
        c. Not re-enter the structure without SCBA.
        d. Not attempt to ventilate the structure until the source of the carbon monoxide can be identified and isolated.

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IV. Responsibilities

A. Station Personnel:

1. Station personnel are responsible to ensure that the detector is accounted for and operational on a daily basis. When inspecting the portable radio, personnel will inspect the CO monitor.

B. EMS Logistics (FSB):

1. The EMSDO is responsible for the replacement of damaged, malfunctioning, or expired detectors through the EMS Logistics coordinator.

REFERENCES
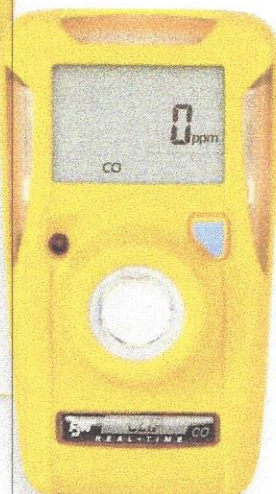
N/A

FORMS / ATTACHMENTS

Attachment A – Honeywell BW CO Monitor Data Sheet

Attachment B – Honeywell BW CO Monitor User Manual

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BW Clip

maintenance-free single-gas detector

The most life for the price. Have a two-year detector for H₂S or CO that you're not using? Hibernate it, and get the time back - for up to a year. Spread your detector's 24 months of operation over up to three years instead of the standard two. **Great for turnarounds, short-term projects or employee leave.**

WATER RESISTANT

The most user-friendly, reliable and cost-effective way to ensure safety, compliance and productivity.

The BW Clip single-gas detector is your everyday companion for hazardous environments. It operates up to three years maintenance-free: Just turn on the device and it runs continuously — no need for calibration, sensor replacement, battery replacement or battery charging. That means great reliability and no downtime.

Plus, with the two-year BW Clip for H_2S or CO, you can put the device in a hibernation case when you're not using it for a week or more — and extend its life by that period of time.

Compatible with both the MicroDock II and the IntelliDoX instrument management systems, the BW Clip is engineered to the highest standards of quality and reliability, keeping you safe and compliant.

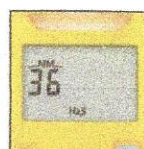Easy gas identification with color coded labels and LCD indication:
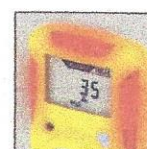
| H_2S |
| CO |
| O_2 |
| SO_2 |

Easy To Wear   Easy to Read   Easy to See

Use our unique advanced technology for safety, compliance and productivity.

- **Surecell™**: unique dual reservoir sensor design dramatically improves instrument performance, response time, and longevity compared to traditional electrochemical sensors and consistently delivers reliable instrument performance under the harshest environmental conditions

- **Reflex Technology™**: advanced automated self-test function routinely checks the operating condition of the sensor to increase safety, up-time, and overall worker confidence

- **IntelliDoX**: instrument management system
  - The quickest bump test in the industry
  - Configuration of alarm set points and more
  - Performing different tests for up to five BW Clip detectors at once — for maximum productivity
  - Easy and accurate record-keeping

BW Technologies
by Honeywell

Wear yellow. Work safe.

BW Clip
maintenance-free single-gas detector

BW Clip Standard Features:

- Maintenance-free: no sensor or battery changes necessary
- Compact, lightweight design with one-button operation
- Designed for a range of harsh environments and extreme temperatures
- Hibernation mode with case accessory or IntelliDoX
- Automated self-test of battery, sensor and electronics
- Wide-angle flash, which alerts simultaneously with audible and vibrating alarm
- Automatic logging of the 35 most recent gas events and bump test results
- Compatible with MicroDock II and Fleet Manager II software
- Affordable, with low cost of ownership

Configureable Options:

- Configuration of high and low alarm set points before the device is activated
- Adjustment of alarm set points and other parameters as needed throughout the lifespan
- Option to enable the noncompliance indicator, which flashes red when a bump test is due or a gas event occurs
- Option to display gas reading during alarm
- User settable bump test reminder
- Option to display the Real Time Clock

Options & Accessories

Hibernation Case   **Hard Hat Clip**   **IntelliDoX**

For a complete list of kits and accessories, please contact BW Technologies by Honeywell.

Locally available from...

BW Clip Specifications

Size	1.6 x 2.0 x 3.4 in. / 4.1 x 5.0 x 8.7 cm
Weight	3.2 oz. / 92 g
Temperature	H_2S: -40 to +122°F / -40 to +50°C CO: -22 to +122°F / -30 to +50°C O_2: -4 to +122°F / -20 to +50°C SO_2: -22 to +122°F / -30 to +50°C
Humidity	5% - 95% RH (non-condensing)
Alarms	Visual, vibrating, audible (95 dB) • Low, High
Tests	Activated detectors automatically perform one internal diagnostic test every 24 hours.
Typical battery life	Two years (H_2S, CO, O_2 or SO_2) or three years (H_2S or CO)
Event logging	35 most recent events
Ingress Protection	IP 66/67
Certifications and approvals	Ⓤⓛ : Class I, Div. 1, Gr. A, B, C, D Class I, Zone 0 , Gr. IIC **ATEX:** CE ⓔ 0539 II 1G Ex ia IIC T4 Ga IP66/67 DEMKO 14 ATEX 1356 **IECEx:** Ex ia IIC T4 Ga IP66/67 IECEx UL 14.0063 **CE:** European Conformity American Bureau of Shipping **EAC Ex :** CU TR Ex
Warranty	Two or three years from activation (given normal operation), plus one year shelf life (6 months for O2). Up to three years for two-year H2S and CO detectors when used with the hibernation feature, limited to 24 months of detector operation.

Sensor Specifications

Gas	Measuring Range	Low Alarm Level	High Alarm Level
2 or 3 year detector			
H_2S	0 -100 ppm	10 ppm	15 ppm
CO	0 - 300 ppm	35 ppm	200 ppm
2 year detector only			
O_2	0 - 25.0 % by vol.	19.5 %	23.5 %
SO_2	0 - 100 ppm	5 ppm	10 ppm

Alarm setpoints are user adjustable before and after activating the detector.

Set points shown are default values as shipped from the manufacturer. Additional default values are available.

DUE TO ONGOING RESEARCH AND PRODUCT IMPROVEMENT, SPECIFICATIONS ARE SUBJECT TO CHANGE WITHOUT NOTICE.

BW Technologies
by Honeywell

detectgas@honeywell.com   **USA** 1.888.749.8878   **Latin America** +55.11.3309.1030
www.honeywellanalytics.com   **Canada** 1.800.663.4164   **Other Countries** +1.403.248.9226

Wear yellow. Work safe.

BW Clip

2 OR 3 YEAR H$_2$S, CO, O$_2$, SO$_2$ SINGLE-GAS DETECTOR

BW Technologies
by Honeywell

BW Clip is a portable, single-gas detector manufactured by BW Technologies by Honeywell (BW). BW Clip continuously measures the concentration of a specific gas in the ambient environment, and activates an alarm when concentrations exceed alarm setpoints. It is your responsibility to respond appropriately to the alarms.

BW Clip is a member of the GasAlert family of products. It is compatible with IntelliDoX and MicroDock II automatic test and calibration stations, as well as Fleet Manager II software version 4.0 or higher. For more information, visit the product website at www.honeywellanalytics.com

Safety Information: Read First

⚠ WARNING

1. Substitution of components may impair Intrinsic Safety.
2. Periodically test the response of the sensor 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.
3. Detectors in hibernation mode are not functional.

⚠ CAUTION

1. Activate the detector before the activation date on the package.
2. This product is a gas detector, not a measurement device.
3. Ensure that the sensor grill is free of dirt, debris, and is not obstructed.
4. Clean the exterior with a soft, damp cloth.
5. Bump test the detector in a normal atmosphere that is free of hazardous gas.
6. For optimal performance, periodically zero the sensor in a normal atmosphere (20.9% v/v O$_2$) that is free of hazardous gas.

Informations de sécurité – À lire au préalable

AVERTISSEMENT

1. Le remplacement d'un composant de l'appareil peut compromettre la sécurité intrinsèque du détecteur.
2. Testez périodiquement la réponse du capteur en exposant le détecteur à une concentration de gaz supérieure au seuil d'alarme basse. Vérifiez manuellement que les alarmes sonores et visuelles sont activées.
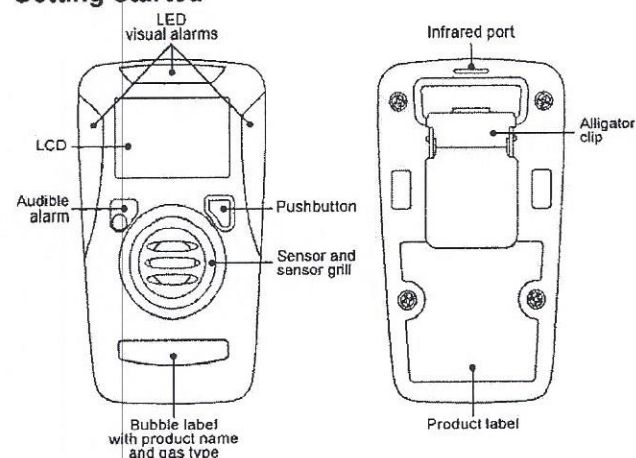3. Détecteurs en mode veille prolongée ne sont pas fonctionnels.

MISE EN GARDE

1. Activez le détecteur avant la date d'activation sur l'emballage.
2. Ce produit est un détecteur de gaz, pas un dispositif de mesure.
3. Veillez à assurer que la grille du capteur est exempt de saleté, les débris, et ne soit pas obstrué.
4. Nettoyez l'extérieur de l'appareil à l'aide d'un chiffon doux et humide.
5. Veillez à effectuer un test fonctionnel du capteur dans une atmosphère normale qui est exempte de gaz dangereux
6. Pour des performances optimales, zéro périodiquement le capteur dans une atmosphère normale (20,9% v/v O$_2$) qui est exempte de gaz dangereux.
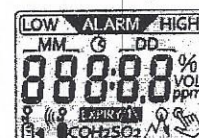
BW Clip Factory Calibration Certificate

This instrument was factory inspected, tested and calibrated in accordance with the conditions and requirements of our registered Quality System, Operating Standards and Sales Agreements.

Getting Started

LED visual alarms

Infrared port

LCD

Alligator clip

Audible alarm

Pushbutton

Sensor and sensor grill

Bubble label with product name and gas type

Product label

LCD and Symbols

Symbol	Description
👆	Pushbutton prompt. When this symbol is displayed, press and hold the pushbutton until the symbol disappears.
%VOL	BW Clip O$_2$ models only. Oxygen concentration is measured as percent by volume.
ppm	BW Clip H$_2$S, CO and SO$_2$ models only. Toxic gas concentration is measured in parts per million.
LOW ALARM / ALARM HIGH	Low alarm and high alarm. These symbols are displayed when a gas concentration that exceeds alarm setpoints is detected.
⚠	Non-compliance warning. This symbol is displayed when a diagnostic or compliance test fails; when the operating life countdown reaches 24 hours or less; and for up to 30 days after operating life expiry. It is also displayed when certain notifications are enabled through Fleet Manager II via an IntelliDoX station.
🕒	Real-time clock. This symbol is displayed when real-time clock is enabled through Fleet Manager II via an IntelliDoX station.
EXPIRY/⚠	End of operating life warning. This symbol is displayed when the operating life countdown reaches 24 hours or less.
⤋	Peak reading. This symbol is displayed when a maximum gas exposure event has occurred within the past 24 hours.
(((💠 X((💠	Bump test reminder. If the detector is configured to display a bump test reminder, this symbol is displayed when a bump test is due. X indicates a failed test.
💠◄ 💠X◄	BW Clip O$_2$ models only. This symbol is displayed when more than 24 hours have elapsed since the last successful zero procedure was performed. X indicates a failed test.
MM DD	Operating life remaining in months (MM) or days (DD).

BW Clip

2 OR 3 YEAR H$_2$S, CO, O$_2$, SO$_2$ SINGLE-GAS DETECTOR

Activate a New Detector

1. Move to a normal atmosphere (20.9% v/v O$_2$) that is free of hazardous gas.
2. Press and hold the pushbutton until a 5 second countdown is displayed, and then continue to hold until the countdown is complete.
3. When the countdown is complete, the LCD and LEDs turn on and then turn off. The detector performs an internal diagnostic test.
4. When the diagnostic test is successful, the alarm setpoints are displayed and the LEDs flash.
5. The sensor stabilization countdown is displayed. During the countdown, the detector vibrates continuously for 20 seconds. The time required to stabilize varies depending on sensor type. When the countdown reaches 0, the LEDs flash and the audible alarm beeps.
6. When the type of gas detected and the operating life countdown are displayed, the detector is in normal operating mode.

Normal Operating Mode

When the detector is in normal operating mode, the type of gas detected is permanently displayed. The remaining operating life is displayed until it is disrupted by a pushbutton action, gas alarm, or error event.

Operating Life

When the detector is activated for the first time, the operating life countdown is displayed. The countdown displays remaining operating life in months until the countdown reaches 90 days or less before expiry.

90 Days or Less Remaining
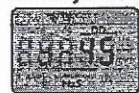
When the operating life countdown reaches 90 days or less before expiry, the countdown display changes to days. The countdown displays the remaining operating life in days until the countdown reaches 24 hours or less before expiry.

24 Hours or Less Remaining

When the operating life countdown reaches 24 hours or less before expiry, the countdown display changes to hours, and the EXPIRY! warning and non-compliance symbol are displayed.

End of Operating Life

When the operating life countdown ends, the detector deactivates and detector safety functions are disabled. It is possible to retrieve event logs for a limited time after expiry. The EXPIRY! warning and non-compliance symbol are displayed for up to 30 days after expiry.

Internal Diagnostic Tests

Activated detectors automatically perform one Internal diagnostic test every 24 hours. If the internal diagnostic test fails, the diagnostic fail-safe begins.

Diagnostic Fail-Safe

1. The EXPIRY! warning and non-compliance symbol are displayed.
2. The detector beeps and vibrates.
3. The LEDs flash 2 times per second for 15 seconds.
4. OFF or an error code is displayed. The detector is deactivated.

It is possible to retrieve the event logs for a limited time after expiry. If you are unable to retrieve the event logs, contact BW.

Alarms and Warnings

An alarm is initiated when the sensor is exposed to a gas concentration that exceeds alarm setpoints. The alarm persists until the alarm gas concentration returns to an acceptable range. You can use Fleet Manager II via an IntelliDoX station to enable the display of the gas concentration reading during an alarm. Battery life decreases rapidly when the detector is in alarm condition.

Low Alarm

Audible: 1 beep per second
Visual: 1 flash per second
Vibration: 1 vibration per second

High Alarm

Audible: 2 beeps per second
Visual: 2 flashes per second
Vibration: 2 vibrations per second

Over-Limit and Under-Limit Alarms

If the gas concentration is beyond the sensor range, OL (over-limit) or -OL (under-limit) is displayed.

Audible: 2 beeps per second
Visual: 2 flashes per second
Vibration: 2 vibrations per second

Automatic Zero Reminder for O$_2$ Models

For O$_2$ models only, the **Automatic Zero Reminder** is displayed when more than 24 hours have elapsed since the last successful zero procedure was performed.

Peak Readings

The peak readings symbol is displayed when the sensor is exposed to a gas concentration that exceeds the alarm setpoints. It is no longer displayed when more than 24 hours have passed since the last alarm, or when a successful bump test is performed via an IntelliDoX or MicroDock II station.

Non-compliance Symbol and LED Indicators

⚠ The non-compliance warning symbol is displayed when:

- an internal diagnostic test fails;
- a bump test or zero procedure fails;
- a bump test is due, if enabled;
- the sensor is exposed to a gas concentration that exceeds alarm setpoints, if enabled.

The non-compliance warning symbol is no longer displayed when more than 24 hours have passed since the last alarm, or when a successful bump test is performed via an IntelliDoX or MicroDock II station. The non-compliance warning symbol is permanently displayed when the service-life countdown reaches 24 hours or less before expiry, and for up to 30 days after expiry.

When **Non-compliance after gas exposure** is enabled through Fleet Manager II via an IntelliDoX station, the LEDs flash in an alternating pattern when the non-compliance warning symbol is displayed. When the symbol is first displayed, the top LEDs flash. After 30 seconds, the side LEDs flash. After 30 seconds, the pattern repeats until the non-compliance warning symbol is no longer displayed.

When the detector is bump tested via a MicroDock II station, an abnormal test result may occur if non-compliance LEDs are flashing. To suspend the flashing for up to 10 minutes, press and release the pushbutton. When the flashing stops, insert the detector and perform the test. If the bump test fails, the LEDs resume flashing.

Recall Events and Settings

When the detector is in normal operating mode, press the pushbutton at any time to scroll through events and settings that are not empty or disabled through Fleet Manager II via an IntelliDoX station. Events and settings are displayed in this order:

1. **Peak Reading,** if available, and when a maximum gas exposure event has occurred within the past 24 hours.
2. **Time of Peak Reading,** if Real-time Clock display is enabled.
3. **Low Alarm Setpoint**
4. **High Alarm Setpoint**
5. **Real-time Clock,** if enabled.
6. **Firmware Version**
7. **Next Bump Due,** if enabled.
8. **Hibernation,** for 2-year H$_2$S and CO hibernation models only.

While an event or setting is displayed, press the pushbutton to scroll to the

next available event or setting. If you do not press the pushbutton, or if you have reached the last available event or setting, the detector returns to normal operation.

Zero the Sensor

Over time and through use, the sensor baseline at zero exposure may drift from the manufacturer's baseline. For optimal performance of O_2 models, BW recommends that you zero the O_2 sensor once every 24 hours or when the **Automatic Zero Reminder** is displayed. For all other models, BW recommends that you zero the sensor periodically.

Zero Procedure
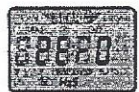
1. Move to a normal atmosphere (20.9% v/v O_2) that is free of hazardous gas.
2. Press and hold the pushbutton until a 5 second countdown is displayed, and then continue to hold until the countdown is complete.
3. When the countdown is complete, the **Zero** procedure begins and **ZErO** is displayed.
4. When **Zero** is successful, **PASS** is displayed, and then the detector returns to normal operation.
5. If **Zero** is not successful, the non-compliance LED flashes. **FAIL** and the non-compliance warning symbol are displayed. Press the pushbutton to acknowledge the result and return to normal operation. The non-compliance warning symbol is displayed and the non-compliance LED flashes. Perform the **Zero** procedure again. If the procedure fails again, contact BW.

Bump Tests

When the detector is configured to display a bump test reminder, the bump test symbol is displayed when a bump test is due. For best results, bump test the detector via an IntelliDoX or MicroDock II station. Bump tests performed via an IntelliDoX or MicroDock II station are logged as bump tests. Manual bump tests are logged as unsafe gas concentrations.

Event Logs

The detector stores the last 35 events that occurred, including peak readings, bump tests and auto zeros. Each record contains:

- detector serial number, sensor type and life-remaining;
- total number of events that have occurred;
- event type and duration;
- alarm level(s) in ppm or %;
- time elapsed since the alarm occurred in days/hours/minutes;
- duration of the alarm (minutes/seconds).

Use Fleet Manager II via an IntelliDoX or MicroDock II station to transfer event logs from the detector to a computer. When logs are transferred via an IntelliDoX station, the most recent 35 events are transferred. When logs are transferred via a MicroDock II station, the most recent 10 events are transferred.

Optional Settings

Use Fleet Manager II via an IntelliDoX station to enable the following optional settings for BW Clip detectors.

Display Gas Reading During Alarm

When **Display gas reading during alarm** is enabled, the gas concentration is displayed when a gas alarm event is detected. The gas concentration is displayed until the alarm event ends.

Non-compliance After Gas Exposure

When **Non-compliance after gas exposure** is enabled, the LEDs flash in an alternating pattern when the sensor is exposed to a gas concentration that exceeds alarm setpoints. When the gas exposure is detected, the top LEDs flash. After 30 seconds, the side LEDs flash. After 30 seconds, the pattern repeats until more than 24 hours have passed since the last alarm, or when a successful bump test is performed via an IntelliDoX or MicroDock II station.

Real-time Clock Display

When **Real-time Clock Display** is enabled, you can display the current time by pressing the pushbutton to **Recall Events and Settings**, and then continuing to press the pushbutton until the time is displayed.

Time may be displayed in 12-hour or 24-hour clock format.

Hibernation

Hibernation is a factory installed feature that is available for 24-month H_2S and CO detectors. When **Hibernation** is activated, the operating life countdown is suspended. Use **Hibernation** to deactivate the detector for 7 days or longer, up to a maximum of 12 months. When **Hibernation** is activated, all detector safety functions are disabled.

Activate Hibernation via BW Clip Hibernation Case

1. Have ready a BW Clip Hibernation Case. To purchase a Case, contact BW or an authorized distributor.
2. Move to a normal atmosphere (20.9% v/v O_2) that is free of hazardous gas.
3. Verify that the detector is in normal operating mode.
4. Press the pushbutton to **Recall Events and Settings**, and then continue to press the pushbutton until **Hib** is displayed.
5. While **Hib** is displayed, press the pushbutton until a 5 second countdown is displayed. When the countdown is complete, the 20-second **Hibernation** counter is displayed.
6. While the **Hibernation** counter is displayed, place the detector into a BW Clip Hibernation Case and then close the case firmly. The detector enters **Hibernation** mode. All detector safety functions are disabled.
7. To reactivate the detector, open the case.

Activate Hibernation through Fleet Manager II via IntelliDoX

1. Use Fleet Manager II to activate **Hibernation on Insertion** via an IntelliDoX station, and then insert the detector in the configured station. The detector event logs are retrieved, and the detector enters **Hibernation** mode. All safety functions are disabled, and the detector may be removed from the IntelliDoX station.
2. To reactivate the detector, press and hold the pushbutton until a 5 second countdown is displayed, and then continue to hold until the LCD and LEDs turn on and off. The detector performs a self-diagnostic test. When the test is successful, the type of gas detected and the remaining operating life are displayed. The detector is in normal operating mode.
3. For more information, refer to the operator manuals for the IntelliDoX station and Fleet Manager II software version 4.0 or higher.

About this Publication

This publication is an operator guide for BW Clip portable single-gas detectors manufactured by BW Technologies by Honeywell. It is intended for use with the following models:

- 24- and 36-month H_2S and CO Detectors
- 24-month O_2 detector
- 24-month SO_2 detector

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BW Clip

2 OR 3 YEAR H$_2$S, CO, O$_2$, SO$_2$ SINGLE-GAS DETECTOR

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by Honeywell

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4 Stinsford Road
Nuffield Industrial Estate
Poole Dorset BH17 0RZ United Kingdom
Toll-free: +44(0)1295 700300

Web
www.honeywellanalytics.com

Warranty Registration
www.honeywellanalytics.com/support/product-registration

Maximum Operating Life
24-month Detector
2 years after activation, assuming
2 minutes of alarm time per day.
Note: 24-month H$_2$S and CO detectors
that use hibernation may extend the
service period of the detector up to an
additional year. The service life will end
once the detector reaches 24 months of
actual operation. Hibernation provides a
maximum service life of 36 months.

36-month Detector
3 years after activation, assuming 1 minute
of alarm time per day.

Detection Range
H$_2$S   0 to 100 ppm
CO   0 to 300 ppm
O$_2$ 0 to 25% by volume
SO$_2$ 0 to 100 ppm

Factory Alarm Setpoints
	Low Alarm	High Alarm
H$_2$S	10 ppm	15 ppm
CO	35 ppm	200 ppm
O$_2$	19.5% vol	23.5% vol
SO$_2$	5 ppm	10 ppm

Use Fleet Manager II via an IntelliDoX
station to adjust alarm setpoints. For more
information, refer to the operator manuals
for Fleet Manager II software version
4.0 and the IntelliDoX automatic test and
calibration station.

Ratings and Certifications
The BW Clip is in conformity with the following
standards:

UL 913 8th Edition
UL 60079-0:2013,
UL 60079-11:2013

CSA C22.2 No. 157-92:2012,
CSA C22.2 No. 60079-0:2011,
CSA C22.2 No. 60079-11:2014

EN 60079-0:2012 +A11:2013,
EN 60079-11:2012
EN 60079-26:2007

IEC 60079-0:2011
IEC 60079-11:2011
IEC 60079-26:2006

ABNT NBR IEC 60079-0:2008
ABNT NBR IEC 60079-11:2009
ABNT NBR IEC 60079-26:2008

UL
Classified by UL to both US 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 II 1G
Ex ia IIC T4 Ga IP66/67
DEMKO 14 ATEX 1356

CE
European Conformity
EU Declaration of Conformity
www.honeywellanalytics.com
IECEx
Ex ia IIC T4 Ga IP66/67
IECEx UL 14.0063
INMETRO
Ex ia IIC T4 Ga
DNV 15.0024
KTL
15-KA4BO-0306[1]
Eac Ex
RU C-US.ГБ08.В.01381

Specifications
Shelf Life
H$_2$S   One (1) year before activation
CO   One (1) year before activation
O$_2$ Six (6) months before activation
SO$_2$ One (1) year before activation

Instrument Weight
alligator clip included
92 grams (3.2 ounces)

Instrument Dimensions
alligator clip included
41 x 50 x 87 millimeters
(1.6 x 2.0 x 3.4 inches)

Operating Temperatures
H$_2$S   -40° to +50°C (-40° to +122°F)
CO   -30° to +50°C (-22° to +122°F)
O$_2$ -20° to +50°C (-4° to +122°F)
SO$_2$ -30° to +50°C (-22° to +122°F)

Internal Vibrating
Operates to -10°C (+14°F)

Intrinsic Safety Temperature Range
-40 °C $\leq$ Ta $\leq$ +50°C

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

Audible Alarm
$\approx$ 95 dB at 10 cm (3.9 in)

Visual Alarm
Flashing, wide-angled alarm lens with red
LEDs plus alarm LCD readout

Display
Liquid crystal display (LCD)

Sensor Type
Electrochemical cells

Battery
Lithium, non-replaceable

Ingress Protection
IP 66/67

Alarm Setpoints
Instant low and instant high

Calibration
H$_2$S   not required
CO   not required
SO$_2$ not required
O$_2$ Perform the Zero procedure
        once every 24 hours or when the
        Automatic Zero Reminder is
        displayed.

Intended Use
This product is classified for use in
hazardous atmospheres that are not more
than 21% v/v O$_2$

Recycling
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.

⚠ CAUTION
Products may contain materials that are
regulated for transportation under domestic
and international dangerous goods regulations.
Return product in compliance with appropriate
dangerous goods regulations. Contact freight
carrier for further instructions.

Limited Warranty and 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. 24-month H$_2$S and CO detectors
are covered for up to an additional 12 months
when hibernation is used, limited by a total of
24 months of detector operation. 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:

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

The obligations set forth in this warranty are
conditional on:
1) proper storage, installation, calibration,
   use, maintenance and compliance with the
   product manual instructions and any other
   applicable recommendations of BW;
2) 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
3) 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.

China RoHS 2 Card
Corporate Headquarters
Calgary, Alberta
50105442-068/A
English/英语

Part or Assembly Name	Hazardous Substances					
	Lead (Pb)	Mercury (Hg)	Cadmium (Cd)	Hexavalent Chromium (Cr (VI))	Polybrominated bibhenyls (PBB)	Polybrominated diphenyl ethers (PBDE)
Gas Sensors	X	0	0	0	0	0
Circuit Board Assembly	0	0	0	0	0	0
Enclosure Material	0	0	0	0	0	0

All parts and assemblies not listed in this table contain hazardous substances
below the limit requirements of GB/T 26572

This table is prepared in accordance with the provisions of SJ/T 11364

0: Indicates that said hazardous substance contained in all of the homogeneous
materials for this part is below the limit requirement of GB/T 26572
X: Indicates that said hazardous substance contained in at least one of the
homogeneous materials used for this part is above the limit requirement of GB/T
26572

公司总部
Calgary, Alberta
50105442-068/A
中文/Chinese

中国 RoHS 2 信息

部件 名称	有害物质					
	铅 (Pb)	汞 (Hg)	镉 (Cd)	六价铬 (Cr (VI))	多溴联苯 (PBB)	多溴二苯醚 (PBDE)
传感器	X	0	0	0	0	0
电路板元器件	0	0	0	0	0	0
外壳	0	0	0	0	0	0

本表格中本列出的所有部件和配件包含的有害物质都没有超过GB/T 26572所
要求的限制。

本表格依据SJ/T 11364的规定编制。

0: 表示该有害物质在该部件所有均质材料中的含量均在GB/T26572规定的限量
要求以下。

X: 表示该有害物质至少在该部件某一均质材料中的含量超出GB/T26572规定
的限量要求。