BW Clip Real Time

2 OR 3 YEAR H₂S, CO, O₂, SO₂ SINGLE-GAS DETECTOR



BW Clip Real Time is a portable, single-gas detector manufactured by BW Technologies by Honeywell (BW). BW Clip Real Time continuously displays 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 Real Time 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 4.2 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. BW recommends performing a bump test prior to each day's use to confirm sensor response and alarm activation by exposing the detector to a concentration of target gas that exceeds the low alarm set point. BW also recommends performing a bump test if the detector has been subjected to physical impact, liquid immersion, an Over Limit alarm event, custody changes, or anytime the detectors performance is in doubt. Calibrate the detector after a failed bump test. Always bump test and calibrate in a fresh air environment.
- 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. For optimal performance, periodically zero the sensor in a normal atmosphere (20.9% v/v $\rm O_2)$ that is free of hazardous gas.
- 6. Portable safety gas detectors are life safety devices. Accuracy of ambient gas reading(s) is dependent upon factors such as accuracy of the calibration gas standard used for calibration and frequency of calibration. BW recommends performing a calibration at least once every 180 days (6 months).

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. Avant chaque utilisation quotidienne, BW recommande d'effectuer un test fonctionnel afin de vérifier la réaction du capteur et l'activation de l'alarme, en exposant le détecteur à une concentration de gaz cible supérieure au seuil d'alarme basse. BW recommande également d'effectuer un test fonctionnel si le détecteur a été soumis à un impact physique, à une immersion dans du liquide, à un événement d'alarme Dépassement de la limite, à des changements d'utilisateur ou chaque fois que les performances du détecteur sont mises en doute. Étalonnez le détecteur après l'échec d'un test fonctionnel. Effectuez toujours un test fonctionnel et étalonnez dans un environnement avec de l'air frais.
- 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.
- 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. Pour des performances optimales, zéro périodiquement le capteur dans une atmosphère normale (20,9% v/v O₂) qui est exempte de gaz dangereux.
- 6. Les détecteurs portables de gaz de sécurité sont des dispositifs de sécurité des personnes. La précision des valeurs de gaz ambiant dépend de divers facteurs, tels que la précision de la norme de gaz d'étalonnage utilisée pour l'étalonnage et la fréquence d'étalonnage. BW recommande d'effectuer un étalonnage au moins une fois tous les 180 jours (6 mois).

Part Number 50115903-101 | OM-EN-BWCRT-A6 | BW Clip Real Time Operator Manual

Getting Started LED visual alarms Infrared port 8 6 Alligator clip LCD Audible Pushbutton • alarm Sensor and sensor grill @ 6 Bubble label Product label with product name and gas type

LCD and Symbols

	bols IGH
	Vol ppm
Sta	Pushbutton prompt. When this symbol is displayed, press and hold the pushbutton until the symbol disappears.
% VOL	BW Clip Real Time O_2 models only. Oxygen concentration is measured as percent by volume.
ppm	BW Clip Real Time H_2S , 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.
A	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.
٩	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.
A	Peak reading. This symbol is displayed when a maximum gas exposure event has occurred within the past 24 hours.
(((?	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 (() 2	X indicates a failed bump test.
, ₽	This symbol is displayed when more than 24 hours have elapsed since the last successful zero procedure was performed (O_2 models) or indicates a sensor calibration is due (H_2 S, CO and SO ₂ models).
רא אין אין אין אין אין אין אין אין אין אי	X indicates a failed calibration (H_2S , CO and SO_2 models) or a failed zero procedure (O_2 models).

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BW Clip Real Time

2 OR 3 YEAR H,S, CO, O,, SO, 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.
- When the countdown is complete, the LCD and LEDs turn on and then turn off. The 3 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. The detector is in normal operating mode when the gas type and concentration are displayed.

Normal Operating Mode



When the detector is in normal operating mode, the type of gas

detected is permanently displayed. The detected concentration of the gas 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. Press the pushbutton to display remaining operating life.

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

- The EXPIRY! warning and non-compliance symbol are displayed. 1.
- 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. Battery life decreases rapidly when the detector is in alarm condition. Low Alarm

ALARM 12

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

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, Models



For O₂ 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 hump test calibration or zero procedure fails:
- a bump test or calibration 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 or calibration is performed (manual calibration or 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 noncompliance warning symbol is no longer displayed.

NOTE: 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. BW Clip Real Time flashes, vibrates and beeps.

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. 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. Operating Life, the remaining operating life of the detector in months, days or hours.
- 4. Low Alarm Setpoint
- 5. High Alarm Setpoint
- 6. Real-time Clock, if enabled.
- 7. Firmware Version
- 8 Next Bump Due if enabled
- 9. Next Calibration Due, if enabled.
- 10. Hibernation, for 2-year H₂S and CO models only.

Vibration: 2 vibrations per second



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 $\rm O_2)$ that is free of hazardous gas.
- 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.
- When Zero is successful, PASS and then CAL ? is displayed. Press the pushbutton to calibrate, or wait for the detector to enter normal operating mode after a 5 second countdown.



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.

Calibration

By default, BW Clip Real Time is configured to use the following calibration gas mixtures:

H ₂ S : 20 ppm	CO: 100 ppm	SO 2: 20 ppm	O ₂ : 18.0 % v/v O ₂
balance N ₂	balance N ₂	balance N ₂	

You can use Fleet Manager II software via an IntelliDoX station to change a detector's default calibration gas mixtures. If the detector's default calibration mixtures were changed.



detector. 1. Move to a normal atmosphere (20.9% v/v $\rm O_2$) that is free of hazardous gas.

use the gas mixture values from Fleet Manager II to calibrate the

2. Connect the calibration hose to the gas cylinder and to the intake inlet on the calibration cap.

- Press and hold the pushbutton until a 5 second countdown is displayed, and then continue to hold until the countdown is complete. The zero procedure begins and ZErO is displayed. When Zero is successful, PASS is displayed.
- 4. When **CAL**? is displayed, press the pushbutton to begin calibration.
- 5. Put the calibration cap on the sensor grill.
- When GAS ? is displayed, apply calibration gas for two minutes at a recommended flow rate of 500 ml/min. When calibration is successful, PASS is displayed and the detector returns to normal operating mode.

If calibration fails, non-compliance warning symbols are displayed. Press the pushbutton to acknowledge. Repeat calibration. If it fails again, contact BW.

Event Logs

The detector stores the last 35 events that occurred, including peak readings, bump tests, calibrations 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 Real Time detectors.

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 Real Time 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 $\rm O_{z})$ that is free of hazardous gas.
- 3. Verify that the detector is in normal operating mode.
- Press the pushbutton to Recall Events and Settings, and then continue to press the pushbutton until Hib is displayed.
- 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.
- While the Hibernation counter is displayed, place the detector into a BW Clip Real Time 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 and remove the detector.

Activate Hibernation through Fleet Manager II via IntelliDoX

- 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.
- 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 4.2 or higher.

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

About this Publication

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

- 24- and 36-month H₂S and CO Detectors
- 24-month O₂ detector

24-month SO₂ detector

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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_2S 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_2S	0 to 100 ppm
со	0 to 300 ppm
02	0 to 25% v/v O ₂
sō	0 to 100 ppm

	2002	0 10	100	PP			
_				_			

Factory Alarm Setpoints I ow Alarm High Alarm

H_2S	10 ppm	15 ppm
со	35 ppm	200 ppm
02	19.5% v/v O ₂	23.5% v/v O ₂
SO2	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 4.2 and the IntelliDoX automatic test and calibration

Ratings and Certifications

The BW Clip Real Time 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

IEC 60079-0:2011 IEC 60079-11:2011

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

Classified by UL to both US and UL 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-0306¹

Specifications

- Shelf Life
- H,S One (1) year before activation One (1) year before activation со Six (6) months before activation 0,
- SO₂ 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_oS -40° to +50°C (-40° to +122°F) со -30° to +50°C (-22° to +122°F) -20° to +50°C (-4° to +122°F) 0. SO, -30° to +50°C (-22° to +122°F) Internal Vibrating

Operates to -10°C (+14°F)

- **Operating Humidity** 5% to 95% relative humidity
- (non-condensing) Audible Alarm
- ≈ 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

To ensure accurate calibration, BW Technologies recommends using a premiumgrade calibration gas approved by the National Institute of Standards and Technology (NIST). Do not use a gas cylinder beyond its expiry date. BW Technologies recommends you calibrate the detector at least once every 180 days depending

http://www.honeywellanalytics.com/~/media/ honeywell-analytics/products/bw-clip/docu-ments/certificates/ korea-certi ication_bw-clip-15ka-4bo0306

on use and sensor exposure to poisons and contaminants. Calibrate only in a safe area that is free of hazardous gas.

Allowable Calibration Gas Mixtures

- H₂S 5 to 50 ppm CO 25 to 250 ppm
- **SO**₂ 5 to 70 ppm
- 5.0 % to 19.0 % v/v O2 02

For O2 detectors, 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 O₂

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.

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_oS 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.

echnologies by Honeywell

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;
- 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

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				RoHS 2		
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Gas Sensors	х	0	0	0	0	0
Circuit Board Assembly	0	0	0	0	0	0
Endosure	0	0	0	0	0	0
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