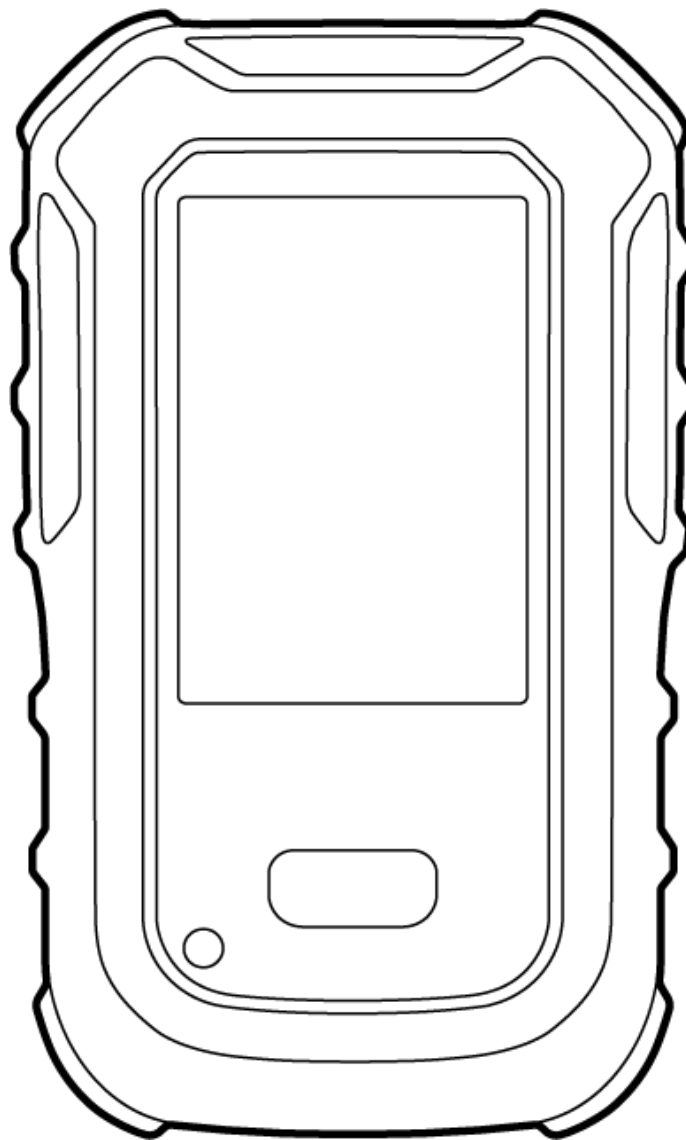


USER MANUAL



Honeywell BW™ Ultra

Portable Five-gas Detector with Internal Pump

Honeywell

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1 WARRANTY

Limited Warranty and Limitation of Liability. BW Technologies by Honeywell LP (Honeywell) warrants the product to be free from defects in material and workmanship under normal use and service for a period of three years, beginning on the date of shipment to the buyer. This warranty extends only to the sale of new and unused products to the original buyer. Honeywell's warranty obligation is limited, at Honeywell's option, to refund of the purchase price, repair, or replacement of a defective product that is returned to a Honeywell authorized service center within the warranty period. In no event shall Honeywell's liability here under 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 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
- any product which in Honeywell's opinion has been misused, altered, neglected, or damaged by accident or abnormal conditions of operation, handling, or use.

The obligations set forth in this warranty are conditional on:

- Proper storage, installation, calibration, use, maintenance, and compliance with the product manual instructions and any other applicable recommendations of Honeywell.
- The buyer promptly notifying Honeywell of any defect and, if required, promptly making the product available for correction. No goods shall be returned to Honeywell until receipt by the buyer of shipping instructions from Honeywell.
- The right of Honeywell to require that the buyer provides 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. HONEYWELL 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 and 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.

Warranty Registration

<https://sps.honeywell.com/us/en/support/safety/hgas-product-registration>

2 BEFORE YOU BEGIN

About this Publication

While this information is presented in good faith and believed to be accurate, Honeywell disclaims the implied warranties of merchantability and fitness for a particular purpose and makes no express warranties except as may be stated in its written agreement with and for its customers.

In no event is Honeywell liable to anyone for any indirect, special, or consequential damages. The information and specifications in this document are subject to change without notice.

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- Honeywell BW™ Ultra
- IntelliFlash™
- IntelliDoX®
- Reverse IntelliFlash™

Introduction

The Honeywell BW™ Ultra gas detector warns of hazardous gas at levels above user-defined alarm setpoints. The detector is a personal safety device. It is your responsibility to respond properly to the alarm. This publication is intended for people who understand how to configure, maintain and use personal gas detectors, docking systems, and accessories.

What's in the Box

Honeywell BW Ultra gas detector	1 Screen protector
Battery (factory-installed)	Screwdriver telescope with double end
Charging adapter	Quick reference guide
3m PVC tube	1 Dust porous filter 7/16"
2 fitting mini quick connector to 1/8"	2 fitting male Luer-Lock to 1/8"
5 Pump filters	

Monitored Gases

The detector can monitor up to five gases at a time. Four gases detected by default, and one optional gas selected from the following list.

Monitored gas	Unit of measure
Default detected gases	
Hydrogen Sulfide (H ₂ S)	parts per million (ppm)
Carbon Monoxide (CO)	parts per million (ppm)
Oxygen (O ₂)	% volume
Combustible gases (LEL) Lower explosive limit	a) percent of lower explosive limit (%LEL) b) percent by volume methane 0-5.0% v/v
Optional gases	
IR Flammable (IR LEL)	% volume
Hydrogen (H ₂)	parts per million (ppm)
Sulfur Dioxide (SO ₂)	parts per million (ppm)
IR-Carbon Dioxide (CO ₂)	parts per million (ppm) or % volume
Ammonia (NH ₃)	parts per million (ppm)
Volatile Organic Compounds (VOC)	parts per million (ppm)
Chlorine (Cl ₂)	parts per million (ppm)
Nitrogen Dioxide (NO ₂)	parts per million (ppm)
Hydrogen Cyanide (HCN)	parts per million (ppm)
Nitric Oxide (NO)	parts per million (ppm)
CO sensor with a Hydrogen filter (CO-H)	parts per million (ppm)

NOTE: CO₂ is now available in %vol



CAUTION

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

- Only the instrument capable of sounding the alarms and showing readings on a display should be used for immediate safety critical use. Wireless communication and infrastructure are only for informational monitoring.
- Use only Honeywell approved batteries (order number: HU-BAT (P/N: 50122982-130) with the Honeywell BW™ Ultra detector. Using any other battery can cause an explosion or fire.
- The lithium battery in this product presents a risk of fire, explosion, and chemical burn if misused. Do not open, crush, disassemble, incinerate, or heat above 100°C (212°F). Batteries exposed to heat at 130°C (266°F) for 10 minutes can cause fire and explosion. Follow the manufacturer's instruction. Batteries must only be charged and/or replaced in a hazardous free area.
- Deactivating the detector by removing the battery pack may cause improper operation and harm the detector.
- Use only Honeywell approved battery charger, that is certified for SELV/LVLC (isolated) with an output U_m of 6.3 V.
- If using the detector near its upper or lower operating temperature, Honeywell recommends zeroing or activating the detector in that environment.
- Charge the detector before first-time use. Honeywell recommends the detector also be charged after every workday.
- Calibrate the device on a regular schedule, depending on use and sensor exposure to poisons and contaminants. Honeywell recommends calibrating at least once every six months.
- For optimal performance, periodically zero the sensor in a normal atmosphere (20.9% v/v O₂) that is free of hazardous gas.
- The combustible sensor is factory calibrated to 50% LEL methane. If monitoring a different combustible gas in the % LEL range, calibrate the sensor using the appropriate gas.
- Only the combustible gas detection portion of this detector has been assessed for performance by CSA standard.
- Honeywell recommends that the combustible sensor is checked with a known concentration of calibration gas after any exposure to contaminants/poisons such as sulfur compounds, silicone vapors, halogenated compounds, etc.



CAUTION

- Honeywell recommends that the sensors be bump tested before each day's use to confirm their ability to respond to gas. Manually verify that the audible, visual, and vibrator alarms are activated. Calibrate if the readings are not within the specified limits.
- The detector is designed for use only in potentially explosive atmospheres where oxygen concentrations do not exceed 20.9% (v/v). Oxygen deficient atmospheres (<10% v/v) may suppress some sensor outputs.
- Extended exposure of the detector to certain concentrations of combustible gases and air may stress the detector element and seriously affect its performance. If an alarm occurs due to a high concentration of combustible gases, a calibration should be performed. If necessary, contact Honeywell service representative to replace the sensor.
- High concentrations of certain toxic gases, for example, H₂S, may hurt the LEL sensor. This effect, known as inhibition, is usually temporary but in extreme circumstances can impair the sensitivity of the LEL sensor after any gas exposure that causes alarm in the toxic gas sensors.
- The HoneywellBW™ Ultra is provided with an antistatic coating over the LCD window to minimize the risk of ignition due to electrostatic discharge. Periodic inspection of this coating is required to ensure no degradation, delamination, abrasions or other deformities to this surface.
- Care must be taken to avoid exposure to excessive heat, harsh chemicals or solvents, sharp edges and abrasive surfaces. Clean the exterior with a soft, damp cloth.
- Portable safety gas detectors are life safety devices. The 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.
- When HoneywellBW™ Ultra detector is equipped with Infrared (IR) sensor, do NOT use BW™ Ultra at an atmospheric pressure exceeding 110 kPa (1.1 bar). The IR sensor used in the detector is intended for use at atmospheric pressure and shall not be used in pressures exceeding 110 kPa (1.1 bar).
- DO NOT rely on the Bluetooth BW™ Ultra output indication for security purposes.



WARNING

- **FOR SAFETY REASONS THIS EQUIPMENT MUST BE OPERATED AND SERVICED BY QUALIFIED PERSONNEL ONLY. READ AND UNDERSTAND INSTRUCTION MANUAL COMPLETELY BEFORE OPERATING OR SERVICING.**
- Substitution of components may impair Intrinsic Safety.
- Protect the combustible sensor from exposure to lead compounds, silicones, and chlorinated hydrocarbons. Although certain organic vapors (such as leaded gasoline and halogenated hydrocarbons) can temporarily inhibit sensor performance, in most cases the sensor will recover after calibration.
- The Canadian Standards Association (CSA) requires the LEL sensor to be bump tested before each day's use with calibration gas containing between 25% and 50% LEL. The instrument must be calibrated if the displayed LEL value during a bump test fails to fall between 100% and 120% of the expected value for the gas.
- High off-scale LEL readings may indicate an explosive concentration.
- Any rapid up scaling reading followed by a declining or erratic reading may indicate a gas concentration beyond the upper scale limit, which can be hazardous.
- 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.
- Dispose of used lithium cells immediately. Do not disassemble and do not dispose of in fire. Do not mix batteries with the solid waste stream. Spent batteries should be disposed of by a qualified recycler or hazardous materials handler. Keep children away from the lithium cells.
- The pellistors used in the Catalytic flammable gas sensor can suffer from a loss of sensitivity when in the presence of poisons or inhibitors, e.g. silicones, sulphides, chlorine, lead or halogenated hydrocarbons.
- **DO NOT** rely on the Bluetooth BW™ Ultra output indication for security purposes.
- **DO NOT** use the screen protector in the hazardous location. The screen protector must be removed in the explosive atmospheres.
- The accessories (e.g., fitting mini quick-connector to 1/8", fitting male Luer-lock to 1/8" etc.) are not the scope of intrinsic safe certification
- Do not install or remove any components when an explosive gas atmosphere is present.



AVERTISSEMENT

- POUR DES RAISONS DE SECURITE, CET EQUIPEMENT DOIT ETRE UTILISE, ENTRETENU ET REPARÉ UNIQUEMENT PAR UN PERSONNEL QUALIFIE. ETUDIER LE MANUEL D'INSTRUCTIONS EN ENTIER AVANT D'UTILISER, 'ENTRETENIR OU DE REPARER L'EQUIPEMENT.
- Avertissement : Le remplacement d'un composant de l'appareil peut altérer sa sécurité intrinsèque.
- Pour éviter l'inflammation d'atmosphères inflammables ou combustibles, couper l'alimentation électrique avant tout entretien.
- Avertissement: Pour réduire le risque d'ignition dans les atmosphères inflammables, les piles doivent être chargées in a dans une zone sûre, exempte de gaz dangereux.
- Protégez le capteur de gaz combustibles contre toute exposition aux composés de plomb, aux silicones et aux hydrocarbures chlorés. Bien que certaines vapeurs organiques (comme l'essence au plomb ou les hydrocarbures halogénés) puissent neutraliser provisoirement les performances du capteur, dans la plupart des cas, le capteur retrouvera son fonctionnement normal après l'étalonnage.
- Attention : Des valeurs LIE hors échelle élevées peuvent indiquer la présence d'une concentration explosive.
- Toute mesure en rapide augmentation suivie d'une diminution ou d'une mesure fantaisiste peut indiquer une concentration de gaz au-delà de la limite d'échelle supérieure, risquant donc d'être dangereuse.
- Les produits peuvent contenir des matériaux qui sont réglementés pour le transport en vertu des règlements nationaux et internationaux de marchandises dangereuses. Retourner le produit conformément à la réglementation sur les marchandises dangereuses appropriées. Contactez transporteur pour plus d'instructions.
- Avertissement: La batterie au lithium peut présenter un risque d'incendie ou de brûlure chimique en cas de mauvaise utilisation. Elle ne doit jamais être démontée, incinérée ni chauffée au-delà de 100 °C.
- Avertissement: Les piles au lithium polymère exposées à une température supérieure à 130 °C pendant plus de 10 minutes peuvent provoquer un incendie et/ou une explosion.
- Mettez immédiatement au rebut les batteries au lithium usagées. Ne pas démonter et ne pas jeter au feu. Ne pas les mélanger aux autres déchets solides. Les piles usagées doivent être éliminées par un centre de recyclage agréé ou un centre de traitement des matières dangereuses. Éloignez les enfants des piles au lithium.
- Ne comptez PAS sur l'indication de sortie Bluetooth BW™ Ultra à des fins de sécurité.
- N'utilisez PAS le protecteur d'écran dans un endroit dangereux. Le protecteur d'écran doit être retiré dans les atmosphères explosives

NCC Warning Statement :

「取得審驗證明之低功率射頻器材，非經核准，公司、商號或使用者均不得擅自變更頻率、加大功率或變更原設計之特性及功能。低功率射頻器材之使用不得影響飛航安全及干擾合法通信；經發現有干擾現象時，應立即停用，並改善至無干擾時方得繼續使用。前述合法通信，指依電信管理法規定作業之無線電通信。低功率射頻器材須忍受合法通信或工業、科學及醫療用電波輻射性電機設備之干擾。」

Sensor Poisons and Contaminants



Many chemicals can contaminate and permanently damage sensors. Follow these guidelines when using cleaners, solvents, or lubricants near the detector:

- Use water-based (not alcohol-based) cleaners
- Clean the exterior only with a soft, damp, cloth

These products can damage the sensors. Do not use them around the detector:

Soaps	Tissues containing silicone
Solvents	Aerosols
Alcohol-based cleaners	Anionic detergents
Brake cleaners	Citrus-based cleaners
Dish soaps	Hand sanitizers
Insect repellents	Lubricants
Methanol (fuel or antifreeze)	Mold release agents
Polishes	Rust inhibitors
Window and glass cleaners	Silicone-based adhesives, sealants, or gels
Silicone-based cleaners or protectants	Hand/body/medicinal creams containing silicone

International Symbols

Symbol	Meaning
	Approved to both United States and Canada standards by UL LLC
IECEX	International Electrotechnical Commission Scheme for Certification to Standards for Electrical Equipment for Explosive Atmospheres
	Natural Institute of Metrology, Quality, and Technology. Conforms to Brazilian INMETRO Certification.
ATEX	Conforms to European ATEX Directives
JPEX	Examination for Electrical Equipment used in Potentially Explosive Atmospheres Japanese Certificate Scheme.
UK CA	UK Conformity Assessed marking indicates conformity with the applicable requirements for products sold within Great Britain.

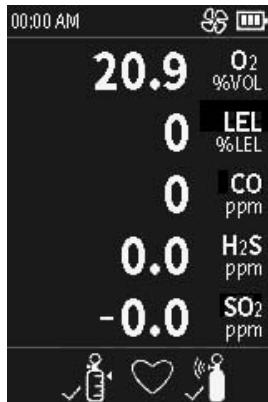
Appearance



1. Visual alarm indicator	4. Button	7. Alligator clip
2. Exhaust port	5. Beeper Aperture	8. Pump assembly
3. Screen	6. Pump inlet	9. Charging connector and IR Interface

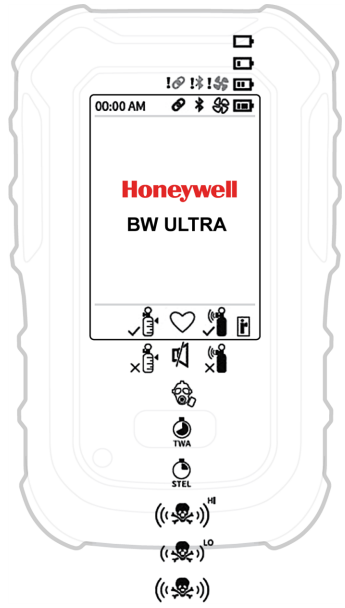
Main Screen

The start-up main screen is displayed as follows:





















Screen Icons

The detector’s screen, shown here with typical icons, will display those shown in the following table as conditions dictate.



Screen icons			
	BLE		Pump/header
	BLE pairing error		Pump passed
	Paired		Pump critical fail
	Pairing failed		Warning/failure/error/low battery
	Stealth mode		Press button
	Battery - three levels		Press & hold button
	Low battery		Hole watch mode high
	IR LINK connection		Hole watch mode low
	Calibration passed		Hole watch - Oxygen bar

Screen icons			
	Calibration failed		Target gas
	Calibration cancelled		Inert mode
	Bump test cancelled		Sensor failure
	Bump test passed		STEL alarm
	Bump test failed		TWA alarm
	Correction factor		Peak gas exposure
	Over limit alarm		Firmware update in progress
	High alarm		Sensor disabled
	Low alarm		This icon flashes to indicate regular operation without any gas alarms or functional errors

Alarms

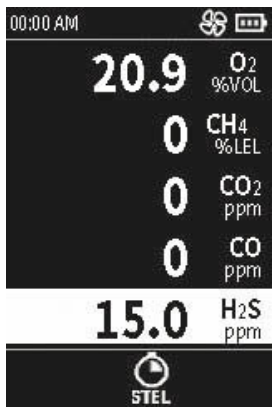
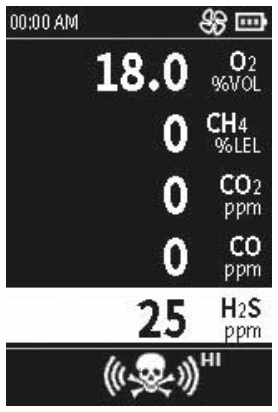

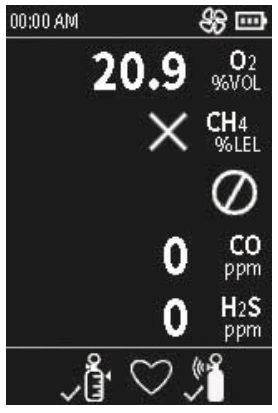
When the detector goes into alarm, it flashes, vibrates, and produces a loud siren noise. Depending on the type of alarm, these flashes, vibrations, and noises will be different.


NOTE: In Stealth mode the Honeywell BW Ultra only vibrates.


IMPORTANT: Regardless, when a detector goes into alarm, always take appropriate action. Never ignore or dismiss an alarm.

Refer to this information about the different alarm types and their corresponding screens.

Alarm Type	Description	Screen
Low alarm	Slow siren (upward tone)	
	Slow flash	
	Black box around gas flashes	
	Vibrator alarm activates	
High Alarm	Fast siren (downward tone)	
	Fast flash	
	Black box around gas flashes	
	Vibrator alarm flashes	
Time Weighted Average (TWA) Alarm	Fast siren (downward tone)	
	Fast flash	
	Black box around gas flashes	
	Vibrator alarm activates	

Alarm Type	Description	Screen
Short Term Exposure Limit (STEL) Alarm	Fast siren (downward tone)	
	Fast flash	
	Black box around gas flashes	
	Vibrator alarm activates	
Multi Alarm	Alternating low and high alarm	
	Black box around gas flashes	
	Type of alarm alternates	
	Vibrator alarm alternates	
Sensor Failure Alarm	 is displayed	

Alarm Type	Description	Screen
Over Limit (OL) Alarm	Fast siren (downward tone)	
	Fast flash	
	Black box around gas flashes	
	Vibrator alarm activates	
	Sequence of alternating beeps and alternating flashes	
Normal Deactivation	Vibrator alarm activates	
	Countdown initiates	
	OFF is displayed	
	Sequence of 10 rapid sirens and alternating flashes followed by 7 seconds of silence (continues for 15 minutes)	
Low Battery Alarm	 flashes	
	Vibrator alarm pulses	
	After 15 minutes of the low battery alarm sequence, the detector will enter critical alarm	
Critical Battery Alarm	Fifteen minutes after low battery alarm activates, sequence of 10 rapid sirens and alternating flashes with 1 second of silence in between (sequence reactivates seven times)	
	Vibrator alarm pulses	
	Low Battery Powering Off is displayed and the detector deactivates	

Alarm Type	Description	Screen
Pump Alarm	Detector is in pump alarm when gas is turned off during calibration.	 <p>Pump test Critical failure</p> <p>⚠️ 🌀</p> <p>Contact your distributor</p> <hr/> <p>powering off...</p>

Activate the Detector

Turn-on the detector in a safe area with an atmosphere of 20.9% oxygen and free of hazardous gas.

1. For first time use, charge the battery for up to 8 hours or until LED light turns green using the charging adapter provided. Refer to Charge the battery for more information.
2. Press and hold the button for three seconds.
3. For first time use, a Warming sensors message is displayed and a 30 minutes countdown is displayed. In most cases, this countdown only lasts a couple of minutes.
4. When the detector displays Pump test Block inlet, block the pump inlet with a finger, and then after a couple of seconds unblock the pump inlet. The detector performs a quick pump test. A Pump Test passed message is displayed. If you do not block the pump inlet, the detector will turn off after two minutes. The detector will then perform a self-test, including testing the sensors. This process could take several minutes. If necessary, you will be instructed by screen prompts to calibrate newly-installed sensors.
5. When the self-test is complete, press and hold the button to zero sensors. After the autozero is complete, the detector then checks the sensors for calibration and bump test. If the detector identifies sensors requiring calibration or bump testing, press the button and follow the on-screen instructions.

Activate the Backlight

To activate the backlight on the screen, press the button.

Deactivate the Detector

1. Press and hold the button during the powering-off countdown.
2. Release the button when OFF is displayed.

Navigate the Menu

There are four main menu items.

- See Information
 - Start Bump Test
 - Zero Sensors
 - Start Calibration
1. Double pressing the button displays all four options on the screen. See Information is selected and highlighted by default.
 2. Press the button to transition the selection to the next choice.
 3. Press and hold for three seconds to enter the selected option.
 4. Follow on-screen instructions for your selected operation. Most of the detector's procedures are described in this guide.

View Detector's General Information

1. Double-press the button to enter the main menu.
2. Select See information and press the button to scroll through the following information:

Peak readings

STEL readings

TWA readings

Bump test intervals

Calibration

BLE information (BLE should be enabled)

LEL Correction Factor

Low Alarm setpoint

Pairing Code

Hi Alarm setpoints

STEL setpoints

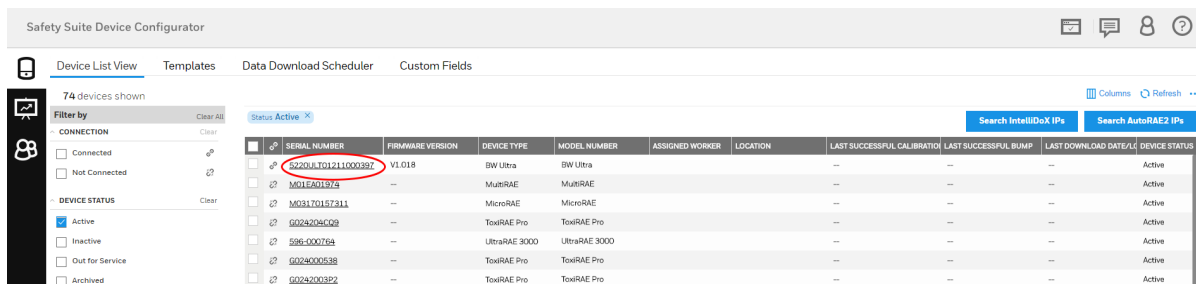
TWA setpoints

Reset TWA/STEL and/or Peak Readings

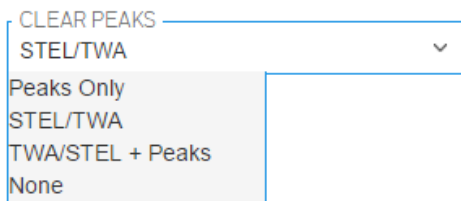
Before you begin.

You need to enable TWA/STEL Reset and/or Peak Reset in Safety Suite Device Configurator (SSDC) to reset readings in the detector.

1. Open Safety Suite Device Configurator (SSDC) in your PC.
2. Login using your username (Default: administrator) and password (Default: Default123)
3. Ensure the device is connected to the computer and powered on.
4. Click on the serial number:



5. Go to the Settings tab and scroll down to "Instrument user preferences"
6. Click on the dropdown menu from "Clear Peaks" and choose which readings to reset.



7. Click on the "Save" button to save your settings to the device.



Zero Sensors

Before you begin.

Connect the Nitrogen if this is a CO₂ unit.

1. Go to the main menu and select Zero Sensors.
2. Press and hold for 3 seconds. A Zeroing process starts automatically. The screen displays all current gas measurements, highlighting entries above zero. Ambient air is applied to zero all sensors that are not CO₂. The screen displays all current gas measurements, highlighting entries being reset to zero.

3. If you are not zeroing O₂, Click NO in the prompted message: Is this a CO₂ unit?. Zero results are displayed. Press the button or wait for six seconds to end the Zeroing process.
4. Click Yes if this is a CO₂ unit and you want to apply Nitrogen to zero CO₂. A two minutes gas measure process starts automatically. All current gas measurements and entries reset to zero are displayed.
5. Turn off the gas following on-screen instructions. Zero results are displayed.
6. Press the button or wait for six seconds to end the Zeroing process.

Zero results are displayed as follows:

- A check mark for sensors that passed Zero
- A cross mark for sensors that failed Zero
- An exclamation mark for sensors that skipped Zero

Acknowledge Alarms and Messages

Press and release the button to perform any of the following:

- To acknowledge a latching alarm
- To acknowledge a low alarm
- To acknowledge due today message (for example, calibration and bump test reminders).
Note that the force calibration and force bump test features cannot be bypassed.

Latching Alarms

If enabled, during an alarm condition the Latching Alarms option causes the low and high gas alarms (audible, visual, and vibrator) to persist until the alarm is acknowledged and the gas concentration is below the low alarm setpoint. The LCD displays the peak concentration until the alarm no longer exists. Local regulations in your region may require the Latching Alarms option be enabled.

The detector is shipped with the Latching Alarms option disabled.

Bump Test

Perform a bump test regularly to test sensors and alarms. To bump test, expose the sensors to a gas concentration that exceeds alarm setpoints and confirm that the sensors and alarms work correctly.

The detector can be bump tested in two ways:

- Apply gas from a cylinder to the sensors manually through the pump inlet.
- Use an IntelliDoX[®] module.

Perform a Manual Bump Test

Before you begin.

Connect the calibration hose to a demand flow regulator on the gas cylinder. Double-press the button and select > Start Bump test.

1. Press and Hold the button for three seconds. The detector displays Starting Bump test. Bump test started is displayed, and then the detector makes noise, flash, and vibrate.
2. The detector will prompt you Did you see and hear the alarms?, select Pass, and Press and hold for three seconds to confirm that the visual, audible, and vibrator alarms work correctly.

An Audio-Visual test passed message is displayed. Skip to Step 5.

3. If the visual, audible, and vibrator alarms failed, select Fail, and press and hold the button. An Audio-Visual test failed message is displayed.

Then you can:

- a) Apply gas, Skip to Step 5
 - b) Press the button to skip gas application and follow on-screen instructions to end the Bump Test. Bump test results are displayed, and the test ends.
4. If you want to apply gas, follow on-screen instructions. Wait for about 30 seconds; gas measurements are displayed for each pertinent gas sensor. A Bump Test pass confirmation is displayed.
 5. After the Turn gas off message is displayed, remove the hose from the pump inlet. The detector will remain in alarm until the gas clears from the sensors. Bump test results are displayed showing check marks next to the tested sensors. These sensors reset to the number of days until the next Bump Test is due.
 6. Press the button to finish the procedure.



CAUTION

Honeywell recommends to bump test the sensors before each day's use to confirm their ability to respond to gas by exposing the sensors to a gas concentration that exceeds the alarm setpoints.

Set Up IntelliFlash™

The IntelliFlash feature causes the detector, if it is in compliance (for example, bump tested and calibrated), to flash a green light every second (the factory setting default) from the top visual alarm indicator. In Safety Suite Device Configurator (SSDC), use the IntelliFlash Interval option in the "Settings" tab to change how often the detector flashes.

Set Up Reverse IntelliFlash™

IntelliFlash flashes a green light when the detector is in compliance, but Reverse IntelliFlash flashes an amber light when the detector is not in compliance (a bump test or calibration is overdue, or a sensor is not working and has been overridden).

Use Safety Suite Device Configurator (SSDC) to change how often the detector flashes for Reverse IntelliFlash.

IntelliFlash and Reverse IntelliFlash can be configured in one of four scenarios:

Scenario 1

When both IntelliFlash and Reverse IntelliFlash are enabled, the detector's green LED will flash until it goes out of compliance, then its amber LED will flash instead.

Scenario 2

If IntelliFlash is enabled and Reverse IntelliFlash is disabled, the detector's green LED flashes until it goes out of compliance, then it stops flashing.

Scenario 3

If IntelliFlash is disabled and Reverse IntelliFlash is enabled, neither LED will flash while the detector is in compliance. The amber LED will flash if it goes out of compliance.

Scenario 4

When both IntelliFlash and Reverse IntelliFlash are disabled, neither LED will flash under any circumstances.

Set Up the Confidence and Compliance Beep Interval

The Confidence Compliance Beep is a sound that tells the user the detector is in compliance (for example, bump tested and calibrated). In Safety Suite Device Configurator (SSDC) use the Confidence/Compliance Beep option to change how often the detector beeps for Confidence Compliance Beep. Go to the "Settings" tab and scroll down to "Instrument User Preferences". Check or uncheck the box next to "Confidence Beep".

Select an Operation Mode

The detector can be used in one of three modes: Essentials mode, Hole Watch mode, and Inert mode.

Note: Honeywell BW Ultra always monitors gas levels, regardless of the operating mode. If the detector detects a sudden gas exposure, it will flash, vibrate, and produce a loud siren noise. A gas level alarm takes precedence over all of the detector's other functions.

Essentials Mode

The detector only shows the gas readings.

Hole Watch Mode

The Hole Watch mode is the default operating mode. It is used for confined space monitoring. Use Hole Watch mode to monitor all gas levels in the same screen view. Hole Watch mode uses bar graphs that fill when the detector detects rising gas concentrations.

- When the detector detects normal gas levels, Hole Watch mode displays empty bar graphs. When the detector detects non-critical gas levels, Hole Watch mode displays filling bar graphs.
- When the detector activates a single gas alarm, Hole Watch mode highlights the detected gas level for that gas in a solid bar.
- When the detector activates a multiple gas alarm, Hole Watch mode continues to display the first detected gas level, as well as highlight other detected gas levels in a solid bar.
- For oxygen, Hole Watch mode displays low and high levels in a bar graph. As the detector detects a low oxygen level, the bar graph fills toward LO.
- As the detector detects a high oxygen level, the bar graph fills toward HI.

Inert Mode

You can configure Inert Mode in Safety Suite Device Configurator (SSDC). Go to the "Sensors" tab and click the "Edit" icon on the O₂ sensor. Then click on the dropdown menu within "Operation Mode". The threshold for operation is 5%. If oxygen readings fall below 5%, the detector prompts the user to enter the Inert mode. The detector does not start automatically in Inert Mode.

When the detector goes into Inert Mode, the alarms setpoint get activated. If the detector does not enter in Inert mode, the O₂ readings are considered normal.

The inert mode operation:

1. Inert mode should be enabled in the configuration
2. When the O₂ concentration becomes < 5 %vol for more than 20 sec, a message will pop up on LCD to activate inert mode, user has to press and hold for 3 secs.

3. Now inert mode is activated. and default inert mode low alarm set point is 5% vol and high alarm set point is 5% vol.
4. To come back to normal mode, when the O₂ concentration becomes > 18 %vol for more than 20 sec, a message will pop up on LCD to activate normal mode, user has to press and hold for 3 secs.
5. Then normal mode is activated.

Configure the Detector

You can configure the Honeywell BW Ultra detector's device and sensor using Safety Suite Device Configurator (SSDC). Necessary to configure detector settings:

- Honeywell BW Ultra detector
- IR Link adapter or IntelliDoX® docking station
- Computer with Safety Suite Device Configurator (SSDC) software installed.

For device settings, a startup message can be added; Confidence Compliance Beep can be activated, bump tests can be forced, stealth mode can be enabled, etc.

For sensor settings, the calibration gas type and frequency can be changed, the bump test interval and alarm setpoints can be set, STEL and TWA can be selected, etc.

You can perform some other settings changes with Safety Suite Device Configurator (SSDC).

- Latching Alarms
- IntelliFlash Mode
- IntelliFlash Interval (seconds)
- Confidence/Compliance Beep
- Confidence/Compliance Beep Interval (seconds)
- Datalog Interval (seconds)
- Language
- Hole Watch Mode
- Disable Button Power Off
- Time Zone/Time Settings. (Time Zone and UTC offset in minutes)
- LEL over span (as it is used by both whittle LEL & IR LEL)
- STEL / TWA back up
- Clear Peaks Type
- BLE enable
- Normal display
- Pairing Code

General Sensor Settings (for all sensors)

- Sensor Enable/Disable
- Calibration Gas Concentration

Note: When the operator configures the Honeywell BW Ultra using Safety Suite Device Configurator (SSDC), Honeywell strongly recommends reviewing the detector's settings before the operation to ensure that settings were applied successfully and comply with performance requirements.

Custom configuration created in Safety Suite Device Configurator (SSDC) can be used to configure detector settings.

Example: Five detectors must have the same bump test reminders and alarm setpoints. Each detector could be configured separately or Safety Suite Device Configurator (SSDC) can be utilized to create a custom settings configuration. This configuration can then be loaded on each detector. This saves time and allows settings to be managed from one location.

Connect with IntelliDoX®

If a detector's calibration is overdue and the forced calibration feature is enabled, the calibration can be performed with an IntelliDoX docking station or through the calibration option from the detector's main menu.

Connect with an IR Link

The detector can be paired with an IR link, aka dongle. There is an IR connection at the bottom of the detector that allows Safety Suite Device Configurator (SSDC) configurations to be efficiently transferred to multiple detectors. The IR link will also allow new firmware to be transferred to detectors or data/event logs to be transferred to Safety Suite Device Configurator (SSDC).

Note: You should have the IR Connectivity Kit (sold separately) to transfer the data from a computer to the detector.

Select PID Correction Factor

1. Once the instrument is connected to Safety Suite Device Configurator (SSDC), select the instrument.
2. Choose the Sensor Tab.

VOCs - Volatile Organic Compounds DISPLAY | ppm

Low Alarm Acknowledge Sensor Enabled 3 Point Calibration Auto-zero on

CUSTOM COR.. CORRECTION FACTOR v

0.1-15

Alarm Setpoints

LOW ALARM <input type="text" value="50.0"/> ppm 0, 1.0 - 1000.0 ppm Low Alarm should be less than or equal to High Alarm	HIGH ALARM <input type="text" value="100.0"/> ppm 0, 1.0 - 1000.0 ppm	TWA ALARM <input type="text" value="50.0"/> ppm 0, 1.0 - 1000.0 ppm	STEL ALARM <input type="text" value="100.0"/> ppm 0, 1.0 - 1000.0 ppm
---	---	---	---

0 100 200 300 400 500 600 700 800 900 1000

Calibration

SPAN LOW GAS <input type="text" value="100.0"/> ppm 3.0 - 1000.0 ppm	SPAN HIGH GA.. <input type="text" value="500.0"/> ppm 3.0 - 1000.0 ppm
--	--

Bump

BUMP THRES.. <input type="text" value="40"/> % 40-95 %
--

Intervals

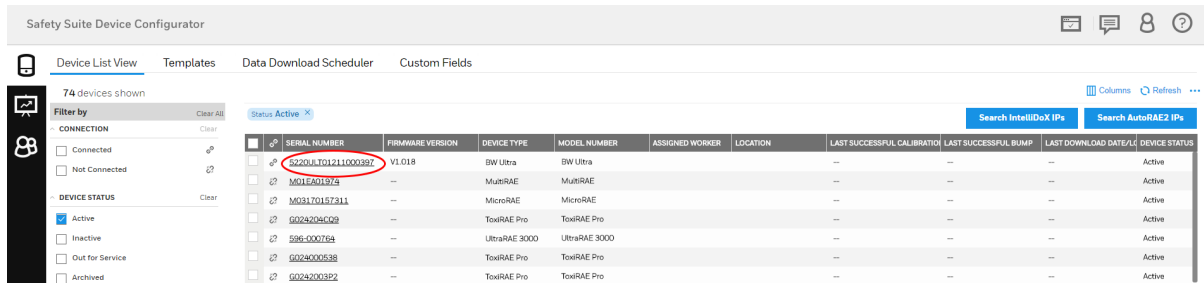
BUMP TEST <input type="text" value="0"/> 0-365 days	STEL <input type="text" value="15"/> 5-15 mins
---	--

3. Use the dropdown menu to select the correction factor.
4. Select Save.
5. Once Safety Suite Device Configurator (SSDC) has sent the correction factor to the instrument, unplug instrument from computer.

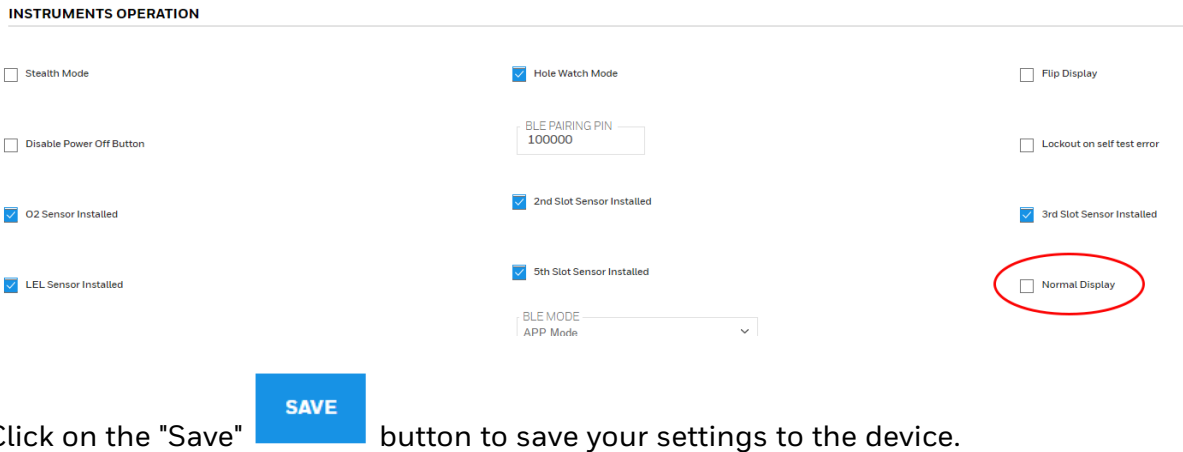
Alternate Display View in Safety Suite Device Configurator (SSDC)

To change the view in Safety Suite Device Configurator (SSDC) follow the next steps:

1. Open Safety Suite Device Configurator (SSDC) in your PC.
2. Login using your username (Default: administrator) and password (Default: Default123)
3. Ensure the device is connected to the computer and powered on.
4. Click on the serial number:



5. Go to the Settings tab
6. Check or uncheck "Normal Display" under "Instruments Operation" to activate or deactivate the white background.



7. Click on the "Save" button to save your settings to the device.

Real Time Clock Display

The real time clock is displayed in the upper left corner of the detector's screen. It is configurable through Safety Suite Device Configurator (SSDC) in 12- or 24-hour formats. The date display can also be configured in several formats through Safety Suite Device Configurator (SSDC). The time/date information is retained even when the detector's battery is being changed.

Languages

Honeywell BW Ultra supports six languages: English, French, German, Portuguese, Spanish, Simplified Chinese. These are configurable through Safety Suite Device Configurator (SSDC).

Custom startup text can be entered in all languages except Simplified Chinese through Safety Suite Device Configurator (SSDC).

Bluetooth Pairing

The user can pair the Honeywell BW Ultra to a mobile device via built in Bluetooth Low Energy (BLE). The Honeywell Safety Communicator app, installed on the mobile phone, can then show gas readings and alarms from the Honeywell BW Ultra unit that is connected. Readings and alarms can then be sent to Honeywell's remote monitoring software.

1. Open the Device Configurator APP.
2. Select Device List.
3. Scan for Instruments.
4. Select the detector and then enter the detector's 100000 pairing code used by default by the BW Ultra.

Note: Pairing is not allowed at start up, during calibration, or bump test.

 **WARNING**

Wireless communication and infrastructure should be used as informational monitoring only.

Calibrate the Detector

Perform a calibration to adjust the sensitivity levels of sensors and ensure accurate responses to gases.

The detector can be calibrated in two ways:


- Apply gas from a cylinder to the sensors manually through the pump inlet.
- Use an IntelliDoX[®] module.

Before you begin. Move to a normal atmosphere (20.9% v/v O₂) that is free of hazardous gas.

1. Go to the main menu and select > Start Calibration.
2. Press and hold the button for three seconds to display the Powering Off countdown and continue to hold for the Starting Calibration countdown. The detector will enter the zero function. The Zeroing process starts automatically and lasts for five minutes. Current gas measurements are displayed, and entries above zero are highlighted.
3. Connect the calibration hose to the pump inlet. Make sure to use a demand flow regulator.

4. Confirm that you want to apply Nitrogen to zero CO₂.
5. When Apply calibration gas now is displayed, apply the gas and wait for a maximum of five minutes. The detector first tests for a specific type of gas. When it detects enough of that gas for sensor calibration, a check box will be displayed next to that gas. Calibration then begins. Gas values will adjust on the screen during the calibration.
6. When Turn gas off is displayed, disconnect the device from gas. Check marks will be displayed next to the calibrated sensors. These sensors reset to the number of days until the next calibration is due (for example, 180 days). The calibration cycle will take about two minutes after which the user will be prompted to Press button to continue.
7. If the calibration was successful, Calibration Passed will be displayed. Press the button to exit calibration. If the calibration failed for some or all of the gases, either a Cal Error All gases applied mixed results message (if the detector was not successfully

NOTE: After a Chlorine (Cl₂) Sensor is installed in the BW Ultra and it is configured in the device, a manual calibration for Cl₂ must be performed in order to complete the set-up process in the gas detector. Further calibration cycles of Cl₂ can be done using IntelliDoX. For BW Ultra sticky gases CL₂, NO₂, and HCN calibration is available in all bays. For Ammonia (NH₃) the calibration is available. However, it requires a wait period of 15 minutes between calibrations and all the nests used in gang should be for BW Ultra. If it is not the case, it is highly recommended to perform calibration for NH₃ only on the first bay. For this reason, when NH₃,

Ammonia is set on bays 2 to 5 a warning will be displayed as . Other sticky gases not mentioned here are not available to be calibrated for BW Ultra using IntelliDoX.

NOTE: In 1.024 Firmware Version the CO₂ can be calibrated along with the quad gas mixture using a 5 gas combination. If calibration is skipped once, all gases will be skipped, and calibration failure will be flagged.

NOTE: SO₂ Calibration and / or quad gas cannot be individually skipped.

Replace a Sensor

Use only sensors designed by Honeywell for the Honeywell BW Ultra detectors. Replace the sensors in a non-hazardous location.

The Honeywell BW Ultra detector can be configured for a maximum of 5 gases and may contain dummy sensors.

If an HCN is set up on the 5th, after cal/bump, the device enters to high alarm (HCN) this is due to high cross sensitivity. The type of sensor can only be configured at factory during assembly process.

If the user requests a BW Ultra with a dummy sensor placed in the analog sensor position, then this sensor won't appear in the configuration options.

Review Logs

Many of the detector events are logged and can be reviewed via IntelliDoX or BLE. Typical logged events would be:

bump test failed	self-test failed
last calibration failed	calibration overdue
calibration forced	calibration canceled
calibration error	calibration passed
sensors in alarm	system reset
sensors zeroed	event logs vs. data logs
"Turn cal gas off..." message is displayed	

Perform the following tasks to maintain the detector in good operating condition:

- Calibrate, bump test, and inspect the detector on a regular schedule.
- Maintain an operations log of all maintenance, bump tests, calibrations, and alarm events.
- Keep the exterior of the detector clean.

Gas Cylinder Guidelines

- Use a premium-grade calibration gas that is approved by the National Institute of Standards and Technology.
- Verify the expiration date on the cylinder before use.
- Do not use an expired gas cylinder.
- Contact Honeywell if a certified calibration of the detector is required.

Charge the Battery

You can charge the battery using the provided charging adapter, that is certified for SELV/LVLC (isolated) with an output U_m of 6.3 V.

It can take up to 8 hours to get the battery fully charged in a temperature range from 5 °C to 35 °C.

Note: If you charge with the power on, charging may not be completed within 8 hours.

Maintain the Battery

Lithium-ion batteries do not respond well to cycles of full discharge followed by a full charging cycle. Recharge the battery before it is exhausted.

Do not charge the battery at low or elevated temperatures. 30°C (86°F) is considered an elevated temperature and should be avoided whenever possible.

A rechargeable battery's runtime decreases approximately 20% over a two-year period of typical use.

Clean the Detector

Clean the exterior of the detector with a soft, damp cloth. Use only water-based (non-alcohol) cleaners. Do not use soaps, solvents, or polishes.

Upgrade the Firmware

Upgrade the Firmware via IR Link using Safety Suite Device Configurator (SSDC).

Before you begin:

- You should have the IR Connectivity Kit (sold separately) to transfer the data from a computer to the detector.

Note: If connected to the Internet, Safety Suite DC or Safety Suite DM provides the latest firmware automatically. If not connected to the internet, click on Update and manually add the latest firmware from Honeywell's official website: sps.honeywell.com/us/en/software

- Download Safety Suite Device Configurator (SSDC) from the following website: sps.honeywell.com/us/en/software/safety and install. (Internet service required)
- For more information refer to the Safety Suite User Guide.

Option 1

1. Turn on the detector.
2. Go to the Device Inventory/List and click on the Refresh button to see the connected devices.
3. Enable the checkbox next to the device serial number and above a blue toolbar will appear.
4. Select the Update firmware button.
5. Follow the status of the process on the Notifications queue.
6. Once the message 'Firmware Updated' appears on the top, click on the Refresh button again to see the new firmware version on the devices list.

Option 2

1. Turn on the detector.
2. Go to the Device Inventory/List and click on the Refresh button to see the connected devices.
3. Click over the device serial number.
4. Click the Update button on the Device Details screen below the Firmware Version section.
5. Follow the status of the process on the Notifications queue.
6. The page is refreshed and the new firmware version is listed.

Safety Suite Device Configurator (SSDC) - Offline upgrade (use this option if you wish to refresh the firmware or downgrade the firmware)

This option can be activated in two ways:

1. Having a computer with no internet access or
2. Enabling the Firmware updates using local file option
(Settings -> System Settings -> Local Settings)

Get firmware under RFP format (this format belongs to Safety Suite Device Configurator), you can get the file in the following site: sps.honeywell.com/us/en/products/safety/gas-and-flame-detection

For the units:

1. Go to the Device Inventory/List and click on the Refresh button to see the connected devices.
2. There are two ways to select the firmware file:
 - a. Enable the checkbox next to the device serial number and above a blue toolbar will appear, select the Update firmware button.
 - b. Click on the device serial number to open the Device Details.
3. Click the Update button below the Firmware Version section,
4. Select the RFP file to use and click on the Update button.
5. Follow the status of the process on the Notifications queue.
6. Once the message Firmware updated appears on the top, click on the Refresh button again to see the new firmware version on the devices list.

Note: If there are datalogs stored into the device when you update the FW to Version 1.024 through IntelliDoX and if after 25 minutes the process doesn't finish, open the nest and the device should show Error 141. Just press the acknowledge button and the device will be correctly updated.

Firmware Downgrade

Contact Honeywell if a Firmware downgrade is required.

Auto Detect Gas

While the gas is applied during calibration, the detector will wait for up to 300 seconds to allow the gas to stabilize. If the gas has not stabilized by then, the detector will display a Gas unstable message. If the gas stabilizes within 300 seconds, it will be automatically detected and will not have to be selected from a menu. The name of the gas and a Span calibration in progress message will be displayed. If a quad gas mixture was used, the detector will display the names of all four gases.

Gas Alarm Setpoints

Gas alarms are activated when detected gas concentrations are above or below the user-defined setpoints. The gas alarms are described as follows.

Alarm	Condition
Low	Toxics and combustibles: Ambient gas level above low alarm setpoint. Oxygen: Ambient gas level may be set above or below 20.9% (or 20.8%).
High	Toxics and combustibles: Ambient gas level above high alarm setpoint. Oxygen: Ambient gas level may be set above or below 20.9% (or 20.8%).
TWA	Toxics only: Accumulated value above the TWA alarm setpoint.
STEL	Toxics only: Accumulated value above the STEL alarm setpoint.
Multi-gas	Two or more gas alarm conditions simultaneously.
Over Limit (OL)	OL or -OL displays when readings are above or below the sensor detection range, respectively.

Sample Factory Alarm Setpoints

Following table lists alarm setpoints as defined by the US Occupational Safety and Health Association (OSHA).

Gas	TWA	STEL	Low	High
H ₂ S	10 ppm	15 ppm	10 ppm	15 ppm
CO	35 ppm	50 ppm	35 ppm	200 ppm
O ₂	N/A	N/A	19.5% vol.	23.5% vol.
LEL	N/A	N/A	10% LEL	20% LEL

Note: To disable an alarm, set the alarm setpoint to 0 (zero) in Safety Suite Device Configurator (SSDC).

Specifications

Detector dimensions: 8.1 x 14.6 x 5.1cm

Mass: 444.2 g

Operating temperatures: -4°F to +122°F (-20°C to +50°C)

Battery operating times: 18 hours (14 hours with PID or IR sensor) @ -4 °F / -20 °C

Rechargeable battery: 8 hours in a temperature range from 5 °C to 35 °C.

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

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

Detection range:

H₂S: 0 – 100 ppm (1 / 0.1 ppm increments)

CO: 0 – 2000 ppm (1 ppm increments)

O₂: 0 – 25% vol. (0.1% vol. increments)

SO₂: 0 - 100 ppm (0.1 ppm increments)

Combustible (LEL): 0% to 100% LEL (1% LEL increments) or 0.0% to 5.0% v/v methane

Gas types: VOC, CO₂, LEL, H₂S, CO, O₂, SO₂, NH₃, H₂, NO, NO₂, HCN, Cl₂

Alarm conditions: STEALTH, TWA alarm, STEL alarm, low alarm, high alarm, multi-gas alarm, low battery alarm, confidence beep, automatic deactivation alarm

Audible alarm: 95 dB at 30 cm (1 ft.) (100 dB typical) variable pulsed beeper

Visual alarm: Red light-emitting diodes (LED)

Display: Alphanumeric liquid crystal display (LCD)

Screen resolution: 160X240 pixels.

Backlight: Activates when the pushbutton is pressed and deactivates after 5 seconds; also activates during an alarm condition

Self-test: Initiated upon activation.

Calibration: Automatic zero and automatic span.

Standards and Certifications

The Honeywell BW™ Ultra gas detector is in conformity with the following standards and certifications.

Approvals.

Approved by UL to both U.S. and Canadian Standards

UL 913, 8th Edition

UL 60079-0, 7th Edition

UL 60079-1, 7th Edition

UL 60079-11, 6th Edition

ANSI/ISA 60079-29-1 (12.13.01) - 2013

CSA C22.2 No.152-M1984 (R2016)

CSA C22.2 No. 60079-0:19

CSA C22.2 No. 60079-11:14

CSA C22.2 No. 60079-1:16

UL: E480011

Class I, Division I, Group A, B, C and D, Temperature code T4, $-40 \leq T_{amb} \leq +50^{\circ}\text{C}$

Class I, Zone 0, AEx ia IIC T4 Ga, $-40 \leq T_{amb} \leq +50^{\circ}\text{C}$ (without LEL and IR sensor installed)

Class I, Zone 0, AEx da ia IIC T4 Ga, $-40 \leq T_{amb} \leq +50^{\circ}\text{C}$ (with LEL sensor installed and without IR sensor installed)

Class I, Zone 0, AEx ia IIC T4 Ga, $-20^{\circ}\text{C} \leq T_{amb} \leq +50^{\circ}\text{C}$ (with IR sensor installed and without LEL sensor installed)

Class I, Zone 0, AEx da ia IIC T4 Ga, $-20^{\circ}\text{C} \leq T_{amb} \leq +50^{\circ}\text{C}$ (with LEL and IR sensor installed)

CSA: E480011

Class I, Division I, Group A, B, C and D, Temperature code T4, $-40 \leq T_{amb} \leq +50^{\circ}\text{C}$

Ex ia IIC T4 Ga, $-40 \leq T_{amb} \leq +50^{\circ}\text{C}$ (without LEL and IR sensor installed)

Ex da ia IIC T4 Ga, $-40 \leq T_{amb} \leq +50^{\circ}\text{C}$ (with LEL sensor installed and without IR sensor installed)

Ex ia IIC T4 Ga, $-20^{\circ}\text{C} \leq T_{amb} \leq +50^{\circ}\text{C}$ (with IR sensor installed and without LEL sensor installed)

Ex da ia IIC T4 Ga, $-20^{\circ}\text{C} \leq T_{amb} \leq +50^{\circ}\text{C}$ (with LEL and IR sensor installed)

ATEX: DEMKO 18 ATEX 1833X**UKCA: UL21UKEX2006X**

EN IEC 60079-0:2018

EN 60079-11:2012

EN 60079-1:2014

EN 60079-26:2015

I M1 Ex ia I Ma, $-20^{\circ}\text{C} \leq T_{amb} \leq +50^{\circ}\text{C}$

II 1 G Ex ia IIC T4 Ga, $-40^{\circ}\text{C} \leq T_{amb} \leq +50^{\circ}\text{C}$ (without LEL and IR sensor installed)

I M1 Ex da ia I Ma, $-20^{\circ}\text{C} \leq T_{amb} \leq +50^{\circ}\text{C}$

II 1 G Ex da ia IIC T4 Ga, $-40^{\circ}\text{C} \leq T_{amb} \leq +50^{\circ}\text{C}$ (with LEL sensor installed and without IR sensor installed)

I M1 Ex db ia I Ma, $-20^{\circ}\text{C} \leq T_{amb} \leq +50^{\circ}\text{C}$

II 2 G Ex db ia IIC T4 Gb, $-20^{\circ}\text{C} \leq T_{amb} \leq +50^{\circ}\text{C}$ (with IR sensor installed)

IECEX: UL 18.0061X

IEC 60079-0:2017

IEC 60079-11:2011

IEC 60079-1:2014

IEC 60079-26:2014

Ex ia I Ma, $-20^{\circ}\text{C} \leq T_{\text{amb}} \leq +50^{\circ}\text{C}$

Ex ia IIC T4 Ga, $-40^{\circ}\text{C} \leq T_{\text{amb}} \leq +50^{\circ}\text{C}$ (without LEL and IR sensor installed)

Ex da ia I Ma, $-20^{\circ}\text{C} \leq T_{\text{amb}} \leq +50^{\circ}\text{C}$

Ex da ia IIC T4 Ga, $-40^{\circ}\text{C} \leq T_{\text{amb}} \leq +50^{\circ}\text{C}$ (with LEL sensor installed and without IR sensor installed)

Ex db ia I Ma, $-20^{\circ}\text{C} \leq T_{\text{amb}} \leq +50^{\circ}\text{C}$

Ex db ia IIC T4 Gb, $-20^{\circ}\text{C} \leq T_{\text{amb}} \leq +50^{\circ}\text{C}$ (with IR sensor installed)

The following additional previous editions of Standards noted under the “Standards” section of this Certificate were applied to integral Components as itemized below. There are no significant safety related changes between these previous editions and the editions noted under the “Standards” section.

Product	Certificate Num	Standards
Dynamant Ltd. Gas Sensors Type MSH2ia***	IECEX FTZU 15.0002U	IEC 60079-0 Edition 2011
City Technology Limited, Miniature Combustible Gas Sensor - 1 LEL 75	IECEX ULD 16.0016U	IEC 60079-0 Edition 2011

JPE_x

DEK21.0013X

JNIO SH-TR-46-1: 2015

JNIO SH-TR-46-6: 2015

Ex ia IIC T4 Ga, $-40^{\circ}\text{C} \leq T_{\text{amb}} \leq +50^{\circ}\text{C}$ (without LEL and IR sensor installed)

DEK21.0014X

JNIO SH-TR-46-1: 2015

JNIO SH-TR-46-2: 2018

JNIO SH-TR-46-6: 2015

Ex da ia IIC T4 Ga, $-40^{\circ}\text{C} \leq T_{\text{amb}} \leq +50^{\circ}\text{C}$ (with LEL sensor installed and without IR sensor installed)

DEK21.0015X

JNIO SH-TR-46-1: 2015

JNIO SH-TR-46-2: 2018

JNIO SH-TR-46-6: 2015

Ex db ia IIC T4 Gb, $-20^{\circ}\text{C} \leq T_{\text{amb}} \leq +50^{\circ}\text{C}$ (with IR sensor installed)

FCC Compliance

This device complies with part 15 of the FCC Rules. Operation is subject to the following two conditions:

(1) This device may not cause harmful interference, and (2) this device must accept any interference received, including interference that may cause undesired operation. This transmitter must not be co-located or operated in conjunction with any other antenna or transmitter. This equipment complies with FCC radiation exposure limits set forth for an uncontrolled environment. End users must follow the specific operating instructions for satisfying RF exposure compliance.

NOTE: This equipment has been tested and found to comply with the limits for a Class A digital device, pursuant to part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference when the equipment is operated in a commercial environment. This equipment generates, uses, and can radiate radio frequency energy and, if not installed and used in accordance with the instruction manual, may cause harmful interference to radio communications. Operation of this equipment in a residential area is likely to cause harmful interference in which case the user will be required to correct the interference at his own expense.



CAUTION

Changes or modifications not expressly approved by the manufacturer responsible for compliance could void the user's authority to operate the equipment.

This device complies with FCC radiation exposure limits set forth for an uncontrolled environment and meets the FCC radio frequency (RF) Exposure Guidelines. This device has very low levels of RF energy that it is deemed to comply without maximum permissive exposure evaluation (MPE).

RED Compliance

Honeywell Analytics Asia Pacific Co., Ltd. hereby declares that this gas detector, Honeywell BW™ Ultra, is in compliance with the essential requirements and other relevant provisions of Directive 2014/53/EU.

Canada, Industry Canada (IC) Notices

This device complies with Industry Canada license-exempt RSS. Operation is subject to the following two conditions: (1) this device may not cause interference, and

(2) this device must accept any interference, including interference that may cause undesired operation of the device.

This device complies with FCC/ISED radiation exposure limits set forth for an uncontrolled environment and meets the FCC/ISED radio frequency (RF) Exposure Guidelines. This device has very low levels of RF energy that it is deemed to comply without maximum permissive exposure evaluation (MPE).

Canada, avis d'Industrie Canada (IC)

Cet appareil est conforme aux normes RSS exemptes de licence d'Industrie Canada. Son utilisation est soumise aux deux conditions suivantes :

(1) cet appareil n'engendre pas d'interférences, et

(2) cet appareil doit tolérer tout type d'interférences, notamment les interférences pouvant provoquer une utilisation non désirée de l'appareil.

Cet équipement est conforme aux limites établies par FCC/ Industrie Canada en matière d'exposition aux radiations dans un environnement non contrôlé. Cet équipement ne doivent pas être colocalisés ou fonctionner en conjonction avec tout autre antenne ou émetteur.

In terms of North America flammable gas performance approval:

Honeywell BW™ Ultra is approved for ISA 60079-29-1 and CSA C22.2 No.152.

Only Honeywell BW™ Ultra catalytic bead flammable sensor was evaluated for CSA C22.2 No.152 and ISA 60079-29-1.

The evaluation is valid only with the pumping flow rate 300 ml/min, 3 m length tube and CH₄ (Methane) gas.

The other options are not the scope of CSA C22.2 No.152 and ISA 60079-29-1.

For the compliance of CSA C22.2 No.152 and ISA 60079-29-1, the adjustable alarm point shall not exceed 60 % LEL and the highest alarm shall be configured as latching alarm.

In ISA 60079-29-1, Honeywell BW™ Ultra was tested only for IP54. Other IP ratings are not the scope of ISA 60079-29-1. Honeywell BW™ Ultra was pressure tested for 80, 100 and 120 kPa in ISA 60079-29-1. Outside of 80 - 120 kPa is NOT the scope of ISA 60079-29-1.

Sensor T90 Ratings

Please be advised of the following T90 ratings for the BW Ultra sensors stated below:

Sensor Type	T90 Ratings
LEL Sensor (1LEL75C)	for Methane is < 20 sec @ 20°C
Oxygen (O ₂) Sensor: 1O2	for O ₂ is typically <15 sec
Carbon Monoxide (CO) Sensor: CO 4R+	for CO is < 30 sec
Hydrogen Sulfide (H ₂ S) Sensor: 1H ₂ S	for H ₂ S is typically <30 sec
Nitric Oxide (NO) Sensor: NO 4R+	for NO is < 60 sec
Nitrogen Dioxide (NO ₂) Sensor: NO ₂ 4R+	for NO ₂ is < 60 sec
Carbon Dioxide (CO ₂) Sensor: NDIR 4R+	for CO ₂ is < 30 sec

Response Time (t90): The time for a sensor to reach 90% of its final stable reading. Typically, an exposure of twice the t90 time is required to get a stable reading. Response times of sensors and instruments may be different. The response time of instrument is dependent on sensor response time and test conditions like calibration gas flow rate, temperature etc.

Specifications are valid at 20°C, 50% RH, and 1013 mBar, using Honeywell recommended circuitry. Performance characteristics outline the performance of sensors supplied within the first three months. Output signal can drift below the lower limit over time.

Label Information

BW™ Ultra Battery Label

cULus



1 2 3 4

ATEX/UKEX

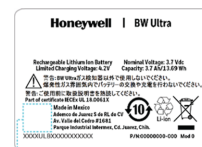


IECEX



5

JPEX



1. BW Ultra battery serial number and 2D barcode
2. Manufacturer information
3. CEC battery charging system approval marking
4. WEEE marking
5. Chinese EPUP marking

cULus

A. (5 mm X 5 mm) 2D barcode for Serial Number: 18 digits

□□□□ ULB □□□□□□□□□□□□□□□□

- 5 digits: sequence number
- 2 digits: year of week
- 2 digits: year of manufacture
- 2 digits: revision number
- ULB: designation for BW Ultra battery pack
- 4 digit for plant code
5220: Mexico Juarez

Note:
1. Color
Black: Background
White: Font
or
Silver: Background
Black: Font

*** Note**
This is an example of the address of the manufacture.
It will only be the manufactures that are listed in the UL file.

ATEX/UKEX

A. (5 mm X 5 mm) 2D barcode for Serial Number: 18 digits

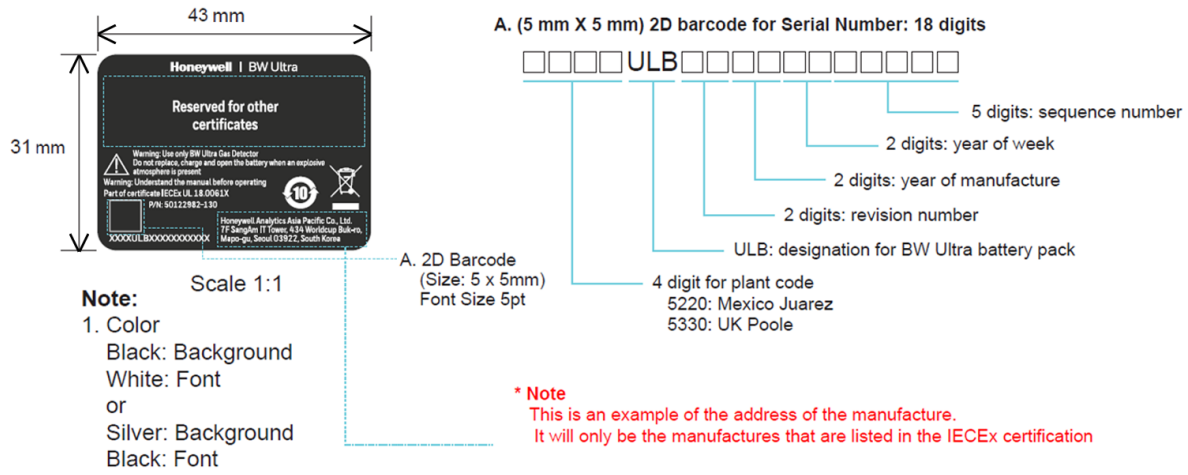
□□□□ ULB □□□□□□□□□□□□□□□□

- 5 digits: sequence number
- 2 digits: year of week
- 2 digits: year of manufacture
- 2 digits: revision number
- ULB: designation for BW Ultra battery pack
- 4 digit for plant code
5220: Mexico Juarez
5330: UK Poole

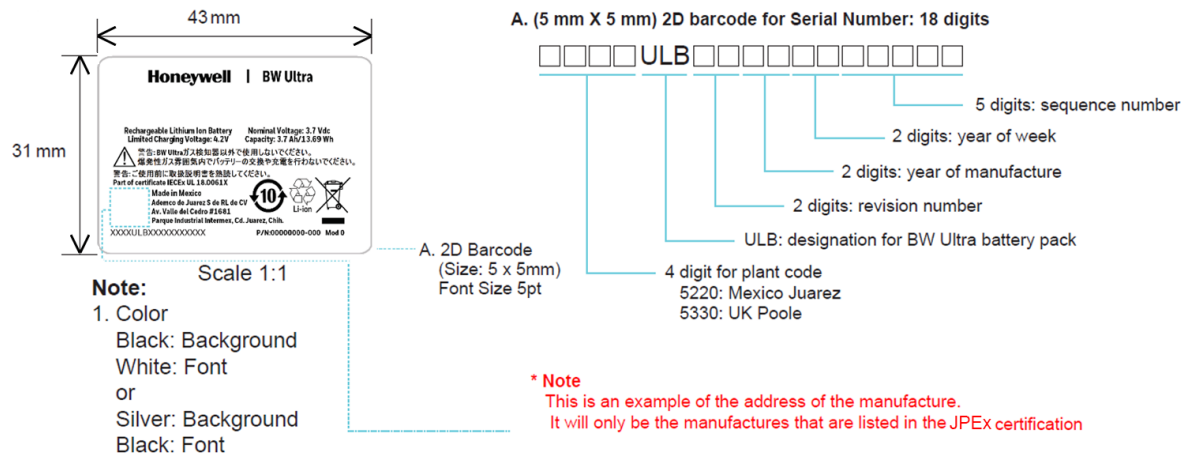
Note:
1. Color
Black: Background
White: Font
or
Silver: Background
Black: Font

*** Note**
This is an example of the address of the manufacture.
It will only be the manufactures that are listed in the ATEX certification

IECEX

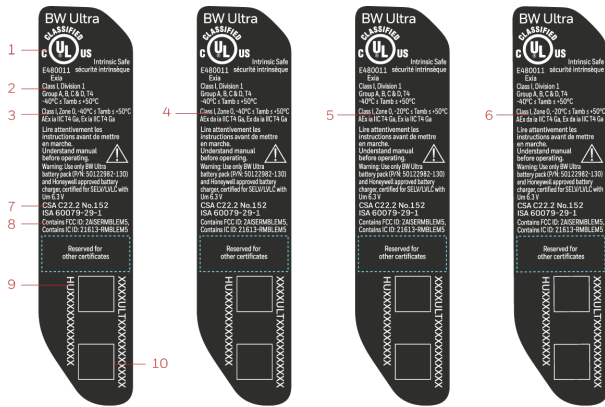


JPEX



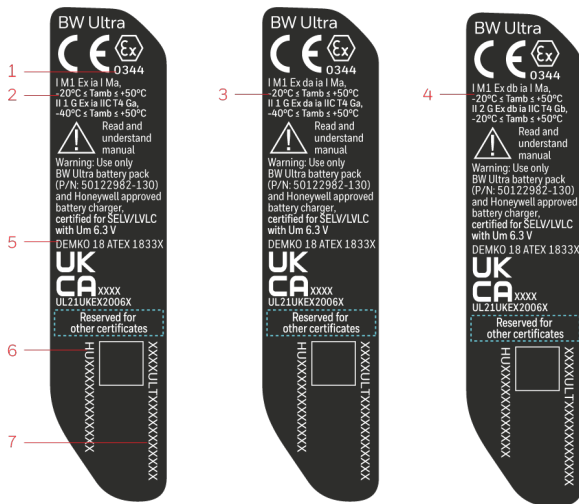
BWUltra Instrument Label

cULus

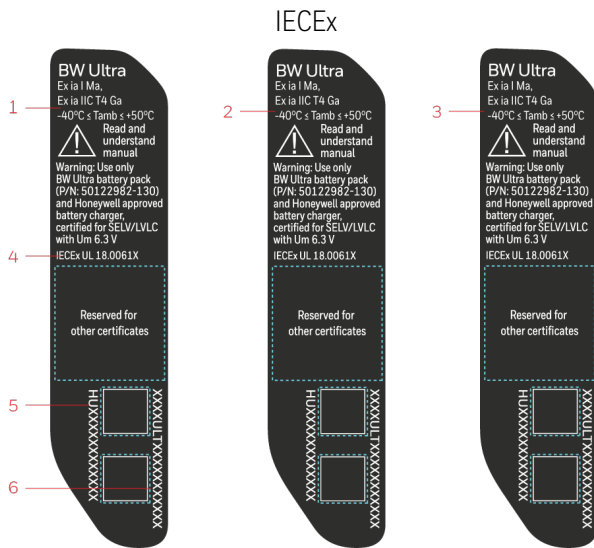


1. cULus certificate marking
2. Class Division protection marking
3. Class Zone protection marking when BW Ultra is configured without LEL and IR sensor
4. Class Zone protection marking when BW Ultra is configured with LEL and without IR sensor
5. Class Zone protection marking when BW Ultra is configured with IR sensor and without LEL sensor
6. Class Zone protection marking when BW Ultra is configured with IR sensor and with LEL sensor
7. North America flammable performance approval
8. FCC and IC certificate number
9. BW Ultra part number and 2D barcode
10. BW Ultra serial number and 2D barcode

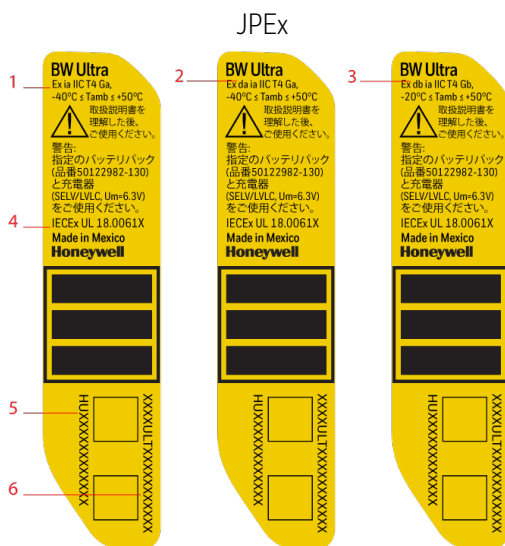
ATEX/UKEX



1. ATEX QAN notified body number
2. ATEX protection marking when BW Ultra is configured without LEL and IR sensor
3. ATEX protection marking when BW Ultra is configured with LEL and without IR sensor
4. ATEX protection marking when BW Ultra is configured with IR sensor
5. ATEX certificate number
6. BW Ultra part number and 2D barcode
7. BW Ultra serial number and 2D barcode



1. IECEx protection marking when BW Ultra is configured without LEL and IR sensor
2. IECEx protection marking when BW Ultra is configured with LEL and without IR sensor
3. IECEx protection marking when BW Ultra is configured with IR sensor
4. IECEx certificate number
5. BW Ultra part number and 2D barcode
6. BW Ultra serial number and 2D barcode

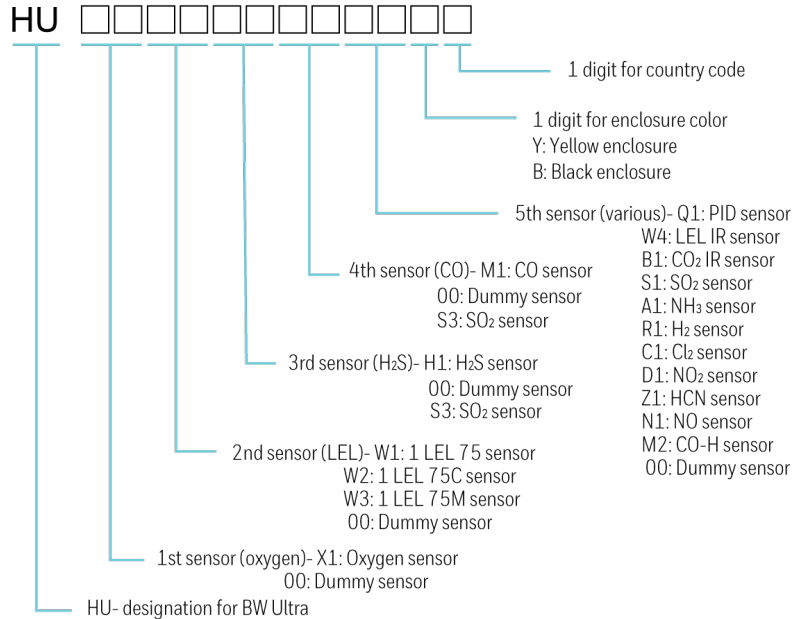


1. IECEx protection marking when BW Ultra is configured without LEL and IR sensor
2. IECEx protection marking when BW Ultra is configured with LEL and without IR sensor
3. IECEx protection marking when BW Ultra is configured with IR sensor
4. IECEx certificate number
5. BW Ultra part number and 2D barcode
6. BW Ultra serial number and 2D barcode

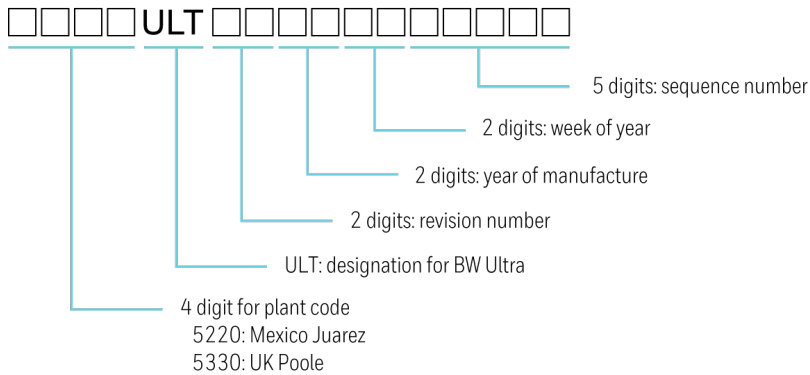
Part Number Format

BW Ultra's explosion-proof protection type varies per the sensor configuration. The user can notice the sensor configuration with the part number format.

B. (5 mm X 5 mm) 2D barcode for Part Number: 14 digits



C. (5 mm X 5 mm) 2D barcode for Serial Number: 18 digits



Note: With devices Using NO or NO₂ 4R+ Sensors, it is not possible to include analog SO₂ sensor due to high negative cross-sensitivity

Sensor Replacement

Nomenclature	Part Number	Sensor
Sensor 1 Oxygen		
X1	AAW85-07WA-HON	1OX, manufactured by City
00	2023B1099	Empty sensor, manufactured by City
Sensor 2_LEL Catalytic bead		
W1	PM979-600	1 LEL 75, manufactured by City
W2	PM989-600	1 LEL 75C, manufactured by City
W3	PM999-600	1 LEL 75M, manufactured by City
00	2023B1099	Empty sensor, manufactured by City
Sensor 3 H₂S		
H1	AC400-R00A-HON	1HS, manufactured by City
00	2023B1099	Empty sensor, manufactured by City
S3	AD300-R04A-HON	1 Series Analogue Sulfur Dioxide
Sensor 4 CO		
M1	AB010-R01A-HON	1CO, manufactured by City
00	2023B1099	Empty sensor, manufactured by City
S3	AD300-R04A-HON	1 Series Analogue Sulfur Dioxide
Sensor 5		
Q1	C03-0912-103	C03-0912-103, manufactured by RAE Systems
W4	50122982-084	MSH2ia-LS/HC/5/V/P/F (Range 0-5 or 0-100 %Vol), manufactured by Dynament
B1	50122982-085	MSH2ia-LS/CO2/5/V/P/F (Range 0-5 or 0-100 %Vol), manufactured by Dynament
S1	50122982-086	2112B2015R, manufactured by City

Nomenclature	Part Number	Sensor
A1	50122982-087	SensoriC NH ₃ 3E 100 SE, manufactured by City
R1	50122982-088	4HYT, manufactured by City
C1	50122982-089	032-0121-000, manufactured by RAE Systems
D1	50122982-090	032-0112-000, manufactured by RAE Systems
Z1	50122982-091	4HN, manufactured by City
N1	50122982-092	032-0111-000, manufactured by City
M2	50122982-210	CO-AX, manufactured by Alphasense
00	50122982-203	Empty sensor, manufactured by RAE Systems

Troubleshooting

Problem	Probable Cause	Solution
Detector does not display normal gas reading after startup sequence	Sensor not stabilized	Used sensor: wait 60 seconds. New sensor: wait 5 minutes.
	Sensor requires calibration	Calibrate the detector.
	Target gas is present	Detector is operating properly. Use caution in suspect areas.
Detector does not respond to button	Battery is in critical low battery state or is completely depleted	Replace the battery.
	Detector is performing operations that do not require user input	Button operation restores automatically when the operation ends.
Detector does not accurately measure gas	Sensor requires calibration	Calibrate the detector.
	Detector is colder/hotter than gas temperature	Allow the detector to acquire ambient temperature before use.
	Sensor filter is blocked	Clean the sensor filter.
Detector does not enter alarm	Alarm setpoint(s) are set incorrectly	Reset the alarm setpoints.
	Alarm setpoint(s) set to zero	Reset the alarm setpoints.
	Detector is in calibration mode	Complete calibration.
Detector intermittently enters alarm without reason	Ambient gas levels are near alarm setpoint or the sensor is exposed to a puff of hazardous gas	Detector is operating normally. Use caution in suspect areas. Check MAX gas exposure reading.
	Alarm setpoints are set incorrectly	Reset the alarm setpoints.
	Detector requires calibration	Calibrate the detector.
	Missing or faulty sensor	Change the sensor.
Features and options are not operating as expected	Changes in Safety Suite Device Configurator (SSDC)	Verify the setup in Safety Suite Device Configurator (SSDC)

Problem	Probable Cause	Solution
Battery has been charging for 6 hours. Charging indicator on LCD shows the battery is still charging	Battery is trickle charging	Verify the charger is properly connected to the AC outlet.
Battery indicator does not display when charging	Battery is depleted below normal levels	Replace the battery.
Battery does not charge		Replace the battery.
Sensor fails to zero during startup self-test		Change the sensor.
The detector does not activate.	Depleted battery.	Replace the battery.
	Damaged detector.	Contact Honeywell.
Detector automatically deactivates.	Automatic deactivation due to critical low battery.	Replace the battery.
	Lockout on Self-Test Error is enabled and a sensor(s) has failed the startup self-test.	Change the sensor.
	Sensor(s) require calibration.	Calibrate the detector.

Glossary

ACGIH

The ACGIH method is defined as the infinite (total) accumulated average, whether it is 2 hours or 8 hours.

BLE

Bluetooth Low Energy.

Bump test

A compliance test that confirms the detector's ability to respond to target gases by exposing the detector to a known gas concentration. Other procedures that are specified to occur automatically when the detector is inserted into a docking module may be performed in conjunction with the bump test.

Calibration

A two-step compliance test that determines the measurement scale for the detector's response to gas. In the first step, a baseline reading is taken in a clean, uncontaminated environment. In the second step, the sensors are exposed to known concentrations of gas. The detector uses the baseline and known gas concentrations to determine the measurement scale.

Datalog

A datalog is a file that contains detailed, date-stamped records related to detector operations and configuration settings. The datalog is continuously updated. Records that span the operating life of the detector are retained.

Event log

An event log is a file that contains detailed, time-stamped records data related to gas events, and compliance tests. The event log is updated when an event occurs. A specified number records for the most recent events are retained.

Safety Suite Device Configurator (SSDC)

A proprietary, Windows-based software developed by Honeywell to configure and manage docking modules, calibration, bump tests, and data logs. Safety Suite Device Configurator (SSDC) is available for download from www.sps.honeywell.com

Gang

A group of two to five connected IntelliDoX modules. Modules that are connected share power, network and gas connections.

IntelliDoX® Docking Module

An automatic bump test and calibration docking station for use with portable gas detectors manufactured by Honeywell.

IR Infrared.

IR is an invisible radiant energy that can be used for short- range wireless communications between enabled devices.

LCD Liquid crystal display.

LCD is a technology that is commonly used for display screens on mobile digital devices.

Normal atmosphere

A fresh air environment with 20.9% v/v oxygen (O₂) that is free of hazardous gas

Operating Life The period of operational use required to attain the specified operating limit. Operating life includes normal operating time, alarm time, and all types of idle time.

OSHA

The US OSHA method is defined as a moving average that accumulates over an 8-hour average. If the worker is in the field longer, the oldest accumulated values (first hour) are replaced by the newest values (ninth hour). This continues for the duration of the work shift until the detector is deactivated.

PPM

Parts per million, a measure of concentration.

Reboot

Restart the operating system for the module

Service Life

The expected lifetime of a product, as specified by the manufacturer.

Station

An area or zone dedicated to a specific activity. A compliance testing station may contain several IntelliDoX modules and gangs of connected modules.

Stealth mode

When enabled, the backlight, visual alarms, and audible alarms are disabled. During an alarm, the vibrator activates and readings are displayed on the LCD.

STEL

The Short-Term exposure Limit is the maximum permissible gas concentration a worker can be safely exposed to for short periods of time (5-15 minutes maximum).

TWA Alarm

The time-weighted average (TWA) is a safety measure used to calculate accumulated averages of gases. Using the US Occupational Safety and Health Administration (OSHA) method or the American Conference of Governmental Hygienists (ACGIH) method, an average is calculated to ensure the detector alarms when the TWA has accumulated.

V/V

Volume percent concentration.

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CoE CDMX