WatchGas
Detection

USER MANUAL

UNI

Disposable Single Gas Detector

Contents

Description

The UNI Disposable is a disposable or a low maintenance version of the UNI Sustainable single gas detector. It detects H_2S, CO or O_2 in a selection of models for an operation life of either 12 months or 36 months. The detector has a large LCD providing maximum readability in the field. Six bright red LEDs allow for quick alarm notification. Constructed of strong and durable material, the UNI is designed to be comfortable yet drop resistant.

Warning

This manual must be carefully read by all individuals who have or will have the responsibility of using, maintaining or servicing this product. The product will perform as designed only if it is used, maintained and serviced in accordance with the manufacturer's instructions.

- Never operate the monitor when the cover is removed.
- Remove the monitor cover and battery only in an area known to be non hazardous.
- Use only WatchGas lithium battery.
- This instrument has not been tested in an explosive gas/air atmosphere having an oxygen concentration greater than 21%.
- Substitution of components will impair suitability for intrinsic safety.
- Substitution of components will void warranty.
- It is recommended to bump test with a known concentration gas to confirm the instrument is functioning properly before use.
- Before use, ensure that the ESD film on the display is not damaged or peeling.

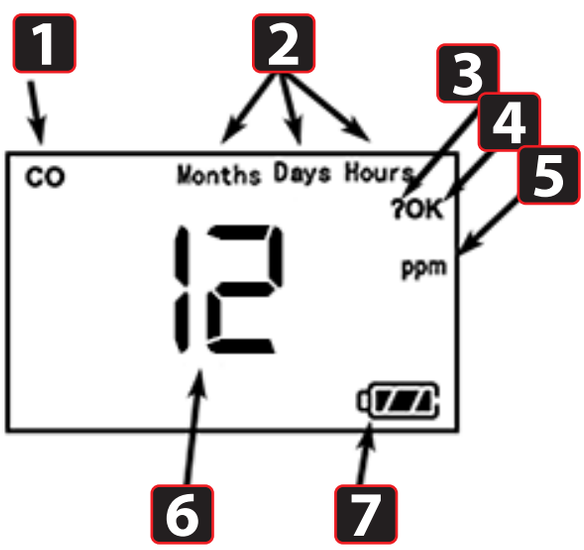
Proper Disposal

The Waste Electrical and Electronic Equipment (WEEE) directive (2002/96/EC) is intended to promote recycling of electrical and electronic equipment and their components at end of life . This symbol (crossed-out wheeled bin) indicates separate collection of waste electrical and electronic equipment in the EU countries. This product may contain one or more Nickel-metal hydride (NiMH), Lithium-ion, or Alkaline batteries. Specific battery information is given in this user guide. Batteries must be recycled or disposed of properly. At the end of its life, this product must undergo separate collection and recycling from general or household waste. Please use the return and collection system available in your country for the disposal of this product.

1. Product Overview

DETECTOR COMPONENTS

1. Audible Alarm Port
2. LED alarm window
3. LCD
4. Left Key (Confirm/Number increasing)
5. Right Key (Power/ Cursor moving)
6. Alligator clip
7. Sensor



DISPLAY SYMBOLS

1. Gas name, includes: CO, H_2S and O_2
2. Remaining time unit: Months, Days, Hours
3. Question mark (flashes once per second if Bump due setting is enabled and the due date has passed)
4. Unit status indicator "OK"
5. Gas concentration unit, for alarm setting display
6. Remaining operating time (Months/Days/ Hours)
7. Battery status

2. Normal Operation

Normal operation is limited to the following functions:

- Displaying the remaining operating time (the unit cannot be turned off)
- Displaying (and logging) the Alarm Level if this concentration of gas is exceeded
- Entering Configuration Mode to perform a fresh air zero calibration
- Replacing the sensor filter if used in especially highly dusty or moist environments

Full bump test or calibration, setting alarm limits, and other functions can only be performed through use of the WatchGas Docking Station by a qualified service technician.

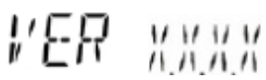
3. Normal Mode Operation

3.1 TURNING ON THE UNIT

Press and hold the Right Key ⏻ for 3 seconds, until the LCD displays  , the buzzer beeps, and the green LED flashes.

3.2 WARM UP SEQUENCE

After powered on, the unit enters a warm up and self-test sequence and shows the firmware version as follows:



If the sensor is not able to be identified by the instrument or is not installed into the instrument, then the screen switches between  and 

Lastly, the High A larm limit  and and Low Alarm limit  are shown.

3.3 REMAINING TIME DISPLAY

After the start-up sequence, the unit enters normal mode and displays the remaining operating time. Once the unit is running, it cannot be turned off manually and it stays on until the battery loses power.

3.4 ALARMS

If the gas concentration exceeds an alarm limit, the display shows the alarm value being exceeded and gives audio, visual and vibration alarms according to the table at the end of this manual *(see Alarm signal summary*). Once the UNI Disposable is no longer in an alarm condition, the UNI Disposable reverts back to the time display, but logs the alarm event in memory.

Calibration Fail Alarm (For Service Use Only) If the instrument fails calibration, it will alternately display  and the remaining run time once per second. The user can perform a manual Zero Calibration (see below) on the instrument alone, but a full Zero/Span calibration requires the WatchGas Docking Station.

Bump Fail Alarm (For Service Use Only)
If the instrument fails a Bump test using the WatchGas Docking Station, it will alternately display BUMP and the remaining run time once per second.

Bump Due Alarm (For Service Use Only)
If the Bump Due setting is enabled and the due date has passed, the question mark will flash once per second while the display continues to show the remaining run time.

4. Configuration Mode

In Config mode, the user can do a zero (fresh air) calibration only. In general, use the Left Key to increase the number or confirm, use the Right Key to move the cursor or move to the next programming item. Detailed configuration settings can be performed using the mPower Suite software through the WatchGas Docking Station.

4.1 ENTER CONFIG MODE

Press and hold the Left Key and the Right Key simultaneously for 3 seconds. The unit prompts for a password* by displaying PWD and 0000, with one digit flashing. To input the password, use the Left Key to increase the number, and the Right Key to move the cursor. Once all four digits are entered, the cursor will move to "OK", use the Left Key to finish password input and enter the Config mode. To correct a digit input mistake, use the Right Key to move the cursor between the four digits and "OK" mark, to change the input.

* The WatchGas Disposable preset password is 0000.

4.2 ZERO (FRESH AIR) CALIBRATION

Zero calibration is to set the base line for the sensor. It is done in fresh air or other source known to be free of detectable gas (For an O_2 unit, "zeroing" sets the value to 20.9%, so air must be used). When the LCD displays AIR press the Left Key to start zero calibration. The unit will start a 15 second count-down, and then display the calibration result as either pass PASS or fail FAIL. The user can abort the zero calibration during the 15 seconds count-down by pressing the Right Key, after which ABRT is displayed.

4.3 EXIT CONFIGURATION MODE

After zero calibration is either skipped or completed, the unit displays EXIT. Press the Left Key to exit back to normal mode.

5. Maintanance

NOTE: The UNI Disposable is designed as a disposable instrument and does not need maintenance under normal circumstances. However, in highly dusty or wet environments, it may be necessary to replace the sensor filter as described below. Also The UNI Disposable has to be calibrated.

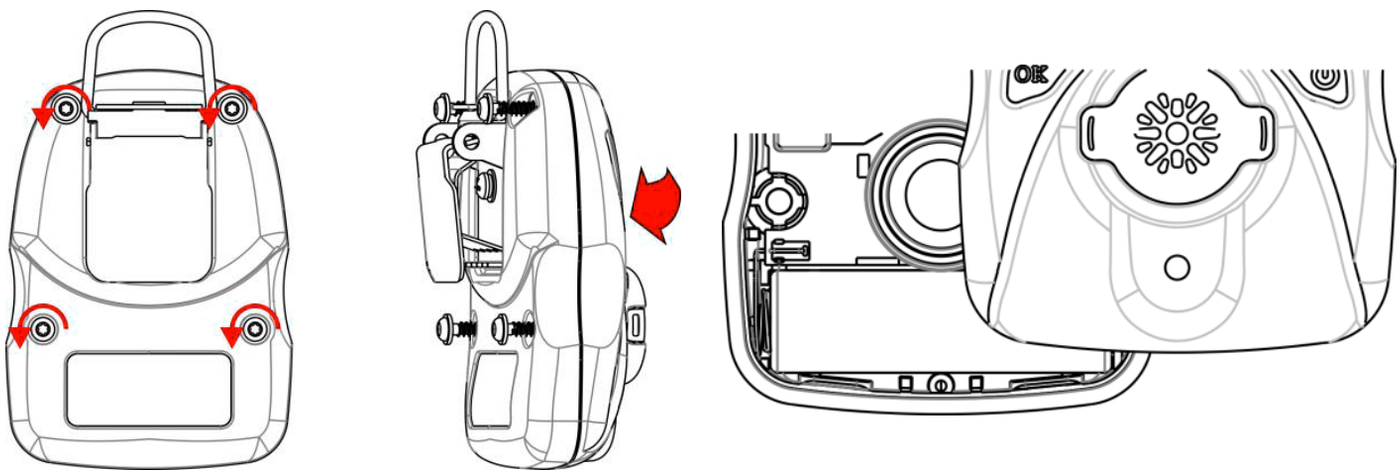
Caution

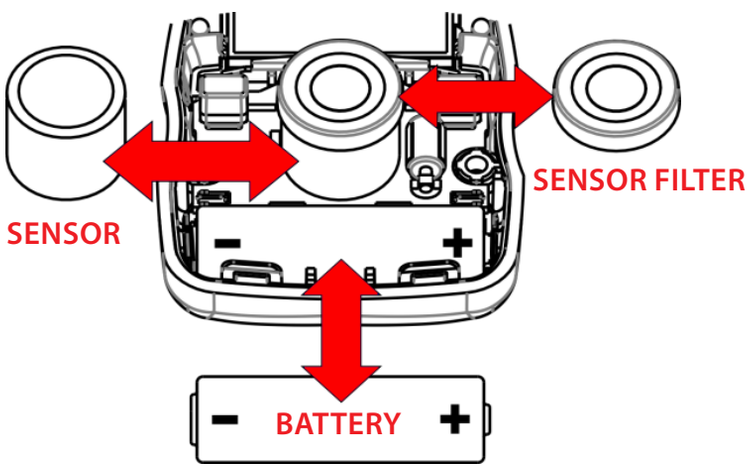
Maintenance should be performed only by a qualified person who has proper training and fully understands the contents of the manual.

5.1 REPLACING THE SENSOR FILTER

The filter may need replacement under special circumstances such as use high-dust or condensing environments. Sheets of 5 "peel-and-stick" filters are available for this purpose:

1. Turn off the UNI Disposable and place it face down on a soft surface.
2. Use a T10 Torx screwdriver to loosen (counterclockwise) each of the four screws.
3. Remove the top cover before carefully unplugging the buzzer connector.
4. Peel a filter from the sheet and center it over the sensor. Gently press down.
5. Re-connect in the buzzer connector and re-install the top cover.
6. Re-install the screws in the back cover. Be careful to not overtighten the screws.





Caution

Change battery only in area known to be non-hazardous.
Use only WatchGas battery.

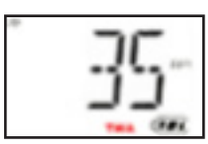
6. Alarm signal summary

Buzzer: 3 beeps per second
LED: 3 flashes per second
Vibration: 1 per second
"OVER" and **"500"** 1 flash per second

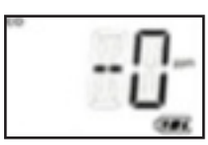
HIGH ALARM: Buzzer: 3 beeps per second, LED: 3 flashes per second, Vibration: 1 per second. **"HIGH"** 2 flashes per second.

LOW ALARM: Buzzer: 2 beeps per second, LED: 2 flashes per second Vibration: 1 per second. **"LOW"** 2 flashes per second.

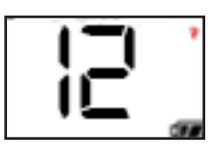
STEL ALARM: Buzzer: 1 beep per second, LED: 1 flash per second, Vibration: 1 per second. **"STEL"** 2 flashes per second



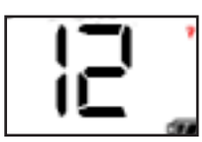
TWA ALARM: Buzzer 1 beep per second, LED 1 flash per second, Vibration: 1 per second. **"TWA"** 2 flashes per second



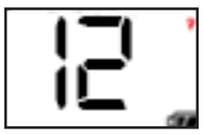
NEGATIVE DRIFT ALARM: Buzzer: 1 beep per second, LED: 1 flash per second, Vibration: 1 per second



BUMP DUE ALARM: "?" : Flashes 2 per second



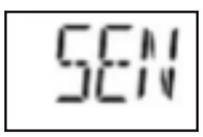
BUMP FAIL ALARM:
Buzzer: 1 beep per minute, LED: 1 flash per minute, Vibration: 1 per minute
"Bump" and "Remain Time" alternate display per second

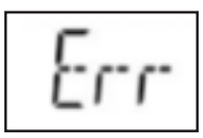


CAL FAIL ALARM:
Buzzer: 1 beep per minute, LED: 1 flash per minute, Vibration: 1 per minute

"CAL" and **"REMAIN TIME"** display alternately once per second

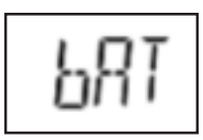
EMPTY BATTERY ALARM: Buzzer: 1 beep per minute, LED: 1 flash per minute, Vibration: 1 per minute and Battery icon: Battery Empty prompt.

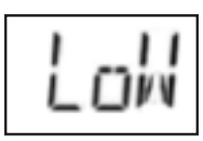




SENSOR ERROR: Buzzer: 1 beep per second, LED: 1 flash per second,

"SEN Err"1 flash per second





BATTERY FAIL ALARM: Buzzer: 1 beep per second, LED: 1 flash per second,

"bAT LoW":1 flash per second

7. Trouble shooting

Problem	Possible reason	Solution
Can not turn on unit	Battery not installed	Install battery
	Depleted or defective battery	Replace battery
Buzzer, LED, or vibration alarm inoperative	Bad buzzer, LEDs, or vibration alarm.	Call authorized service center
	Blocked alarm port	Unblock alarm port

8. Specifications

Size	88 (W)x 62 (H) x 33 (D) mm (3.46 x 2.44 x 1.3 in)
Weight	125 g (4.4 oz)
Sensor technology	3 electrochemical sensor options
Temperature	-20°C to 50°C (-4 to 122°F)
Humidity	5% ~ 95% RH (Non-condensing)
Alarm type	High alarm, Low alarm Over range alarm, Battery low alarm, Bumptest and calibration due notification
Alarm signal	Acoustic: 95dB @ 30cm Visual: 6 bright red LEDs Vibration alarm
Display	LCD Display
Calibration	2-point calibration, zero and span. Power-on zero calibration with user confirmation.
Event log	Up to 50 alarm events
Battery	3.6V AA Lithium battery for 1 or 3 years of operation depending on the UNI
Measurement	Diffusion
Housing	Polycarbonate and rubber
Response time t90	15 seconds
Accuracy deviation	2-3%
IP-Rating	IP68
EMI/RFI	Compliant with EMC 2014/30/EU
Safety certifications	**UL:** Class I, Div 1, Group A, B, C, D Class II, Div 1, Group E, F, G Class III, Div 1 T4, -20° C ≤ T_{amb} ≤ +50° C **ATEX:** II 1G Ex ia IIC T4 Ga **IECEX:** Ex ia IIC T4 Ga **CE:** Conformité Européenne
Warranty	1 year for the UNI Disposable of 12-Months
	3 years for the UNI Disposable of 36-Months

Model	Detectable Gas Ranges	Resolution	Article Number
CO **Carbon Monoxide**	1 - 500 ppm	1 ppm	(M014-0001-W00 12 months) (M016-0001-W00 36 months)
H_2S **Hydrogen Sulfide**	0.1 - 100 ppm	0.1 ppm	(M014-0002-W00 12 months) (M016-0002-W00 36 months)
O_2 **Oxygen**	0.1 - 30 %vol	0.1 %vol	(M014-0003-W00 12 months) (M016-0003-W00 36 months)

9. Limited Warranty

WATCHGAS warrants this product to be free of defects in workmanship and materials under normal use and service for two years from the date of purchase from the manufacturer or from the product's authorized reseller.

The manufacturer is not liable (under this warranty) if its testing and examination disclose that the alleged defect in the product does not exist or was caused by the purchaser's (or any third party's) misuse, neglect, or improper installation, testing, or calibrations. Any unauthorized attempt to repair or modify the product, or any other cause of damage beyond the range of the intended use, including damage by fire, lightening, water damage or other hazard, voids liability of the manufacturer.

In the event that a product should fail to perform up to manufacturer specifications during the applicable warranty period, please contact the product's authorized reseller or WATCHGAS service center at +31 (0)85 01 87 709 for repair/return information.

WatchGas B.V.
Sextantstraat 61
2901 ZZ Capelle aan den IJssel
+31 (0)85 01 87 709
The Netherlands
info@watchgas.nl - www.watchgas.eu

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