# UEi Automotive

## INSTRUCTION MANUAL

## CO DETECTIVE

# CO71A

**Carbon Monoxide Detector**

UEi CO71A

000

CO Meter    ppm

MAX    HOLD

⚠️
**SELF TEST**

**Refer to User Guide**
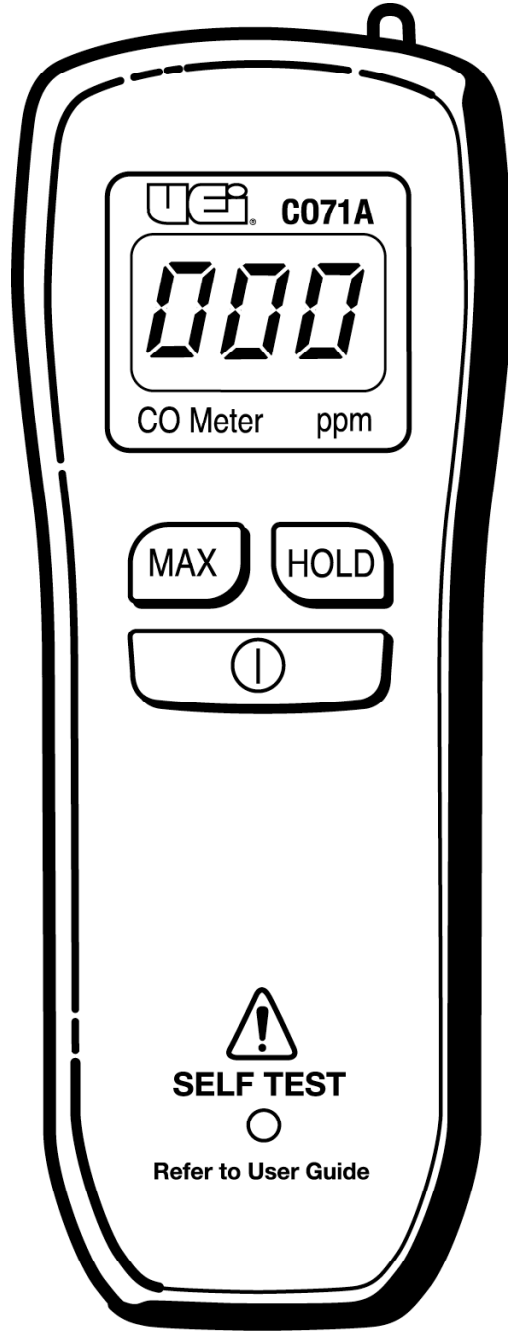
# Introduction

The CO71A is used to monitor Carbon Monoxide (CO) levels in commercial and residential living spaces, warehouse operations, combustion engine repair facilities, public facilities and any other indoor areas where people may work or live. The full-featured, compact design of the CO71A allows for easy use in most any working environment.

## Features include
- One button On with Auto Zero
- Measures from 0 to 999 PPM CO
- Captures maximum value
- Preset Alarms
  - Visual three color LED
  - Audible tone
- Data Hold
- Back lit display
- Low Battery Indication
- CO sensor self test function
- 5 year expected sensor life (3 year warranty)

⚠ **WARNING!**

*This instrument should only be used by trained and competent persons, after due considerations of any risks involved.*

☠ DANGER *Carbon Monoxide is life threatening even at relatively low concentrations. Be sure you understand the risks before investigating potential leaks.*

# Operating Instructions

## ON/OFF (⏻ button)
The CO71A is operated by a single button for ON and OFF. It is designed for use in ambient air, ranging in temperature from 32 to 104°F (0 to 40°C). When the unit is switched ON (Only switch ON outdoors or where no CO is present) it automatically zeros in 50 seconds. During countdown the display shows time remaining as two digits.

## Turn ON countdown
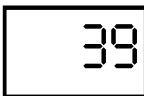
[display: 39]

When the countdown reaches 00 the meter will set its sensor to zero and display CO concentration using three digits.

## Normal display CO PPM

[display: 000]

Hold down the ON/OFF key to switch the meter OFF, the display will show a single digit and count down for 9 seconds.

## Turn OFF countdown

[display: 9]

If turned off accidentally, press the button again to cancel.
***Note:*** *The meter will not automatically shut off. This is to avoid interruption during a test. To conserve battery life, be sure to turn off your CO71A when not in use.*

## MAX button

[display: 039 MAX]

Maximum value display.

Press MAX to display the highest reading detected while the meter is switched ON.

## HOLD button

[display: 025 HOLD]

Holds value when button is pressed.

Freezes the display with the CO reading at the time the HOLD button is pressed. Press again to display current value.

# Visual Indicator

The LED on the top of the CO71A lights and changes color when CO levels increase or decrease.

| | |
|---|---|
| OFF: | 0-1 PPM |
| GREEN: | 2-9 PPM |
| AMBER: | 10-34 PPM |
| RED: | 35 PPM or higher |

These values are based on environmental and health standards as listed in table 1.

# Checking For CO

***Note:*** *Ensure that the sensor grille at the rear of the instrument is free from obstruction. A quick instrument check can be performed by smoke from a blown out match. Let smoke enter the sensor grille. This will cause the indicated CO level to increase.*

| Concentration of CO in Air | Inhalation Times and Toxic Symptoms* |
|---|---|
| 9 ppm | The maximum allowable concentration for short term exposure in a living area according to ASHRAE. |
| 35 ppm | The maximum allowable concentration for continuous exposure in any eight hour period industry according to MIOSHA. |
| 200 ppm | Maximum concentration allowable in any 15 minute period according to OSHA. Slight headaches, fatigue, dizziness, nausea after 2 to 3 hours. |
| 400 ppm | Frontal headaches within 1 to 2 hours, life threatening after 3 hours. Maximum allowable limit in flue gas according to EPA and AGA. |
| 800 ppm | Dizziness, nausea and convulsions within 45 minutes. Unconsciousness within 2 hours. Death within 2 to 3 hours. |
| 1,600 ppm | Headache, dizziness and nausea within 20 minutes. Death within 1 hour. |
| 3,200 ppm | Headache, dizziness and nausea within 5 to 10 minutes. Death within 30 minutes. |
| 6,400 ppm | Headache, dizziness and nausea within 1 to 3 minutes. Death within 10 to 15 minutes. |
| 12,800 ppm | Death within 1 to 3 minutes. |

*The effects can vary depending on size, age, sex and health. UEi is not liable for the accuracy of this information.

**(Table 1)**

## Audible alarm

An audible alarm will sound if 35 PPM CO (or greater) is detected. The alarm frequency will increase with higher concentrations. Check the LCD display for actual level. While the alarm is sounding the unit can not be turned off.

## Back-Light

To activate the back-light press the **ON/OFF** key quickly once.
Do not hold down the key or the unit will switch off.
To turn off the back-light press the **ON/OFF** key quickly again.
***Note:*** *Using the back-light decreases battery life.*

## LOW BATTERY INDICATION

Low battery indicator

```
BAT 039
```

If the battery voltage falls below a pre-set level the symbol **"BAT"** appears in the display. Do not use the instrument when this symbol is present. Replace the battery immediately.

## Troubleshooting

If the display fails to stabilize at around zero within a few minutes this may indicate an expired sensor or a sensor that has been exposed to excessive levels of CO. If the symptom persists seek advice from an approved service center.

Always check for correct operation before each use. Use a known source of CO (e.g. a smoking match stick or a recently extinguished flame) taking care to act in a safe manner and not to expose the CO71 sensor to extreme temperatures or CO concentration. If the unit does not change as expected, return the unit to UEi or an approved service center.

If during use, you detect CO leaks, be sure you know the appropriate actions to take to protect yourself and others. Before switching off the instrument always expose it to fresh air until the reading falls below 5 PPM. Note that the readings fall much more slowly than they rise so you may need to wait three minutes or longer.

## Sensor Self Check

The CO71A includes a sensor self test function. It is recommended that this test be performed once per month to verify proper operation. Higher frequency activation of the self test may shorten the sensor lifespan.

This test releases a safe amount of Hydrogen gas to simulate the presence of Carbon Monoxide (CO). The sensor is reactive to hydrogen in the same manner as CO. If the sensor is functioning this test will provide a display above zero ppm. Hydrogen generated by the self test will vary during each test so the CO71A may display different results each time a self test occurs. It may also take a long time for the sensor to stop measuring Hydrogen before returning itself to a near Zero reading.

We recommend the test is used sparingly - once a month at most - and perform it at the beginning or end of the day allowing sufficient time for the sensor to return to zero.

CO71a Self Test
- Turn on meter and allow to zero in fresh air
- Press and release recessed button on the front housing of the meter
    - A red light will illuminate to indicate the test is in progress
- Displayed value should indicate measured CO
- Allow the display to return to zero
    - This may take up to five minutes to complete
- Continue using per the instructions
- Return to UEi for service if the display does not show a reading during the self test.

# Specifications

| | |
|---|---|
| Range: | 0-999 ppm |
| Resolution: | 1 ppm |
| Accuracy: | ±(3% of reading + 1 ppm) |
| Audible Alarm: | Preset at 35 ppm |
| Visual Indication: | LCD and LED |
| Battery: | 9V alkaline (NEDA 1604) |
| Ambient Temperature: | 32 - 104˚F (0 - 40˚C) |
| Warranty: | 3 year |

No user serviceable parts. Re-calibrate every 12 months. Check for correct operation as described in this manual before every use.

## Limited Warranty

The CO71A is warranted to be free from defects in materials and workmanship for a period of three years from the date of purchase. If within the warranty period your instrument should become inoperative from such defects, the unit will be repaired or replaced at UEi's option. This warranty covers normal use and does not cover damage which occurs in shipment or failure which results from alteration, tampering, accident, misuse, abuse, neglect or improper maintenance. Batteries and consequential damage resulting from failed batteries are not covered by warranty.

Any implied warranties, including but not limited to implied warranties of merchantability and fitness for a particular purpose, are limited to the express warranty. UEi shall not be liable for loss of use of the instrument or other incidental or consequential damages, expenses, or economic loss, or for any claim or claims for such damage, expenses or economic loss. A purchase receipt or other proof of original purchase date will be required before warranty repairs will be rendered. Instruments out of warranty will be repaired (when repairable) for a service charge. Return the unit postage paid and insured to:

**1-800-547-5740 • FAX: (503) 643-6322**
**www.ueitest.com • Email: info@ueitest.com**

This warranty gives you specific legal rights. You may also have other rights which vary from state to state.



**PLEASE**

**RECYCLE**