

D-TEK[®] **CO₂** Carbon Dioxide Leak Detector



EU DECLARATION OF CONFORMITY

CE

This declaration is issued under the sole responsibility of the manufacturer INFICON. The object of the declaration is to certify that this equipment, designed and manufactured by INFICON, is in conformity with the relevant Community harmonization legislation. It has been constructed in accordance with good engineering practice in safety matters in force in the Community and does not endanger the safety of persons, domestic animals or property when properly installed, maintained and used in applications for which it was made.

Equipment Description D-TEK CO₂ Leak Detector

Applicable Directives 2014/35/EU (LVD)

2014/30/EU (EMC) 2011/65/EU (RoHS)

2006/66/EC as amended by 2013/56/EU

(Battery Directive)

Applicable Standards EN 61010-1:2010

EN 61326-1:2013 (Class A)

EN 62133:2012 (CB Test Cert. FI-17925) CISPR 11/EN 55011:2009 (+A1:2010)

EN 50581:2013 (Class A)

CE Implementation Date April 20, 2016

Manufacturer Representative

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Any questions relative to this declaration or to the safety of INFICON products should be directed, in writing, to the quality assurance department at the above address.

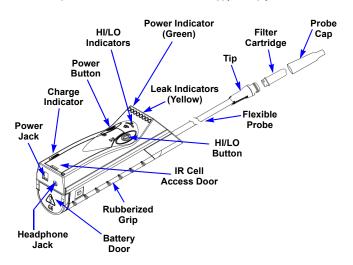
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EU Authorized Representative

INFICON GmbH

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To get the best performance from D-TEK $\rm CO_2$, please read this manual carefully before using the instrument. If you have any questions or need additional assistance, please call 800-344-3304. We'll be happy to help you.





This symbol is used to alert the user to the presence of important operating and maintenance instructions in the literature accompanying this instrument.

Getting Started

D-TEK CO_2 is shipped with the infrared cell and battery already installed. The battery must be charged before using D-TEK CO_2 .

Charging the Battery

Connect the supplied AC wall charger or DC car charger to the D-TEK CO₂ power jack and appropriate power source to charge the battery.

- While charging, the Charge indicator will flash
- Allow at least 10 hours to fully charge the battery
- The Charge indicator will illuminate when the battery is fully charged or after 12 hours of charging
- · Low battery is indicated by the green power indicator flashing
- When the battery is fully depleted, D-TEK CO₂ will turn OFF and the green power indicator, the last yellow leak indicator, and the Charge indicator will flash

NOTE: You should expect approximately 6½ hours of operation from a fully charged battery. Connect D-TEK CO₂ to the AC wall charger to leak check while charging the battery. The battery does not need to be fully charged to operate or fully depleted to charge.

NOTE: If the power indicator, HI, and LO indicators alternate flashing while the wall charger is connected, the battery may be unplugged or the connector is backwards. This could also indicate a faulty battery.



WARNING

Only use car or wall chargers supplied by INFICON and designed for D-TEK $\rm CO_2$. Using other chargers may damage the instrument.

Using Your INFICON D-TEK CO₂



WARNING

DO NOT OPERATE THIS INSTRUMENT IN THE PRESENCE OF GASOLINE, NATURAL GAS, PROPANE, OR OTHER COMBUSTIVE ATMOSPHERES.

Using D-TEK $\rm CO_2$ is simple. Press the power button once to turn the detector ON. The green power indicator will illuminate, and the yellow leak indicators will illuminate from left to right in a scrolling fashion while the infrared cell warms up (approximately 60 seconds). When the detector is ready for use, the yellow leak indicators will extinguish and a steady beeping will begin. Long press the Power button to turn D-TEK $\rm CO_2$ OFF.

D-TEK CO_2 is highly selective for CO_2 (carbon dioxide). The atmosphere has a natural background concentration of carbon dioxide of approximately 0.035%. To prevent false alarms, it may be necessary to take steps to limit changes in this background concentration from sources such as vehicle exhaust or your own breath

Headphone sets may be used with D-TEK CO₂. When the headphones are plugged into the detector, the audio signal will only be heard through the headset.



WARNING

ONLY USE HEADPHONE SETS SUPPLIED BY INFICON. SERIOUS HEARING DAMAGE MAY OCCUR IF OTHER HEADPHONE SETS ARE USED.

Finding Leaks

- 1. Press the HI/LO button until the HI indicator is illuminated.
- Place the tip of the leak detector probe close to the site of the suspected leak. Try to position the probe within 1/4 inch of the possible leak source.
- 3. Slowly (approximately 1-2 inches per second) move the probe past each possible leak point.

NOTE: It is important to move the tip of the probe past the leak to get a correct reading. D-TEK CO₂ only responds to changes in concentration of CO₂ from the leak. Moving the probe permits the instrument to respond properly to these changes.

- 4. Watch for the yellow leak indicators to illuminate, and listen for a tone. When the instrument detects a leak source, the yellow leak indicators will illuminate and it will emit a different audible tone.
- When D-TEK CO₂ signals a leak, pull the probe away from the leak for a moment, then bring it back to pinpoint the location.
- If the concentration of carbon dioxide is high, press the HI/LO button once to switch to LO sensitivity before repositioning the probe at the suspected leak source. The LO sensitivity setting helps find the exact site when a leak is large.
- Once you have isolated the leak source, press the HI/LO button to return the sensitivity setting to HI to continue using D-TEK CO₂.
- When you have finished leak-testing, long press the power button to turn D-TEK CO₂ OFF.

Auto Zero Mode

D-TEK CO_2 by default will automatically zero to the background, allowing you to search for a higher concentration and help pinpoint the leak source. For example, if a leak is detected and D-TEK- CO_2 is held in that area for several seconds, the alarm will stop. This indicates the unit has zeroed to the new background. It will now take a larger concentration of CO_2 to cause an alarm. Holding D-TEK CO_2 in clean air (no CO_2) for several seconds will reset the zero point to normal.

Manual Zero Mode

D-TEK CO₂ can be changed to manual mode, which disables the auto zero feature and allows the user to manually zero to the current background.

NOTE: For best performance, allow D-TEK CO₂ to warm up for 5 to 10 minutes before enabling manual zero mode.

- To enable manual zero mode, press and hold the HI/LO button for 5 seconds.
 The HI and LO indicators will flash quickly for several seconds followed by a
 steady flashing of the HI indicator when manual zero mode is active.
- Press the HI/LO button to zero to the current background. The HI and LO indicators will flash quickly while D-TEK CO₂ zeros.

NOTE: While in manual zero mode, it is best to periodically zero to the current background even if a leak is not detected.

To return to auto mode, press and hold the HI/LO button until the HI indicator becomes steady.

NOTE: When D-TEK CO₂ is turned ON, it will always default to auto zero mode.

Changing the Filter Cartridge

D-TEK CO₂ utilizes a specially designed filter cartridge that fits into a protective cap. The filter cartridge should be changed when it appears dirty or when substances trapped in the filter cartridge seem to be affecting the sensitivity of D-TEK CO₂.

NOTE: Water or oil will not penetrate the filter material, but will prevent airflow through the filter and affect sensitivity.



Always operate D-TEK CO₂ with a filter cartridge installed. Operating without a filter can cause serious damage to the instrument.

- 1. Ensure D-TEK CO2 is OFF.
- 2. With the probe tip pointing downward, unscrew and remove the probe cap.

NOTE: Do not allow moisture or dust to get into the probe.

- 3. Pull out the used filter cartridge and discard.
- 4. Install a new filter cartridge.
- 5. Screw on the probe cap (do not overtighten).

NOTE: Always use a new filter. Do not attempt to clean or disassemble a filter cartridge.

Changing the Infrared Cell



WARNING

COMPONENTS MAY BE HOT. DO NOT REMOVE THE IR CELL ACCESS DOOR WHILE D-TEK ${\rm CO_2}$ IS TURNED ON OR PLUGGED IN.

D-TEK CO₂'s infrared cell (IR cell) is located in the body of the detector. The IR cell is a complete assembly consisting of a metal tube, connectors and electronic components. The IR cell is not designed to be taken apart. Doing so will destroy the cell. This specialized IR cell will operate for about 800 hours.

All leak indicators will flash when the IR cell has reached the end of its useful life. To replace the IR cell:

- 1. Ensure D-TEK CO₂ is OFF and not connected to any car or wall outlets.
- 2. Locate on the top cover (at the rear of the detector) the latch for the IR cell door.
- 3. Using a small screwdriver, pull the latch forward and remove the door.
- Pull the IR cell straight out by grasping both edges of the label and pulling evenly. Discard the old IR cell appropriately, in accordance with local regulations.
- 5. Remove the replacement IR cell from the protective package.
- Carefully align the male leads and air tubes on the IR cell with the connectors mounted on the circuit board. Insert the leads into the sockets and push the IR cell straight down.

NOTE: Ensure the lead connectors on the IR cell ends are not bent and the cell is seated tightly.

Replacing the Battery

- 1. Ensure D-TEK CO₂ is OFF and not connected to any power source.
- With one hand, firmly press the square release buttons on either side of the rubberized grip.
- With the release buttons pressed, remove the battery door by pulling out from the bottom of the instrument.

NOTE: Wiggling the battery door may help.

- 4. Carefully unplug the electrical connector by pulling straight out.
- Slide the battery out and discard appropriately, in accordance with local regulations.
- 6. Slide a new battery in where the old battery was removed.
- 7. Carefully connect the electrical connector.
- 8. Squeeze the battery door tabs and replace the battery door.

NOTE: Ensure the battery wires are clear of the battery door.

9. Connect D-TEK $\rm CO_2$ to a car or wall charger and allow the battery to charge for 10 to 12 hours to ensure a full charge.

NOTE: If the power indicator, HI, and LO indicators alternate flashing while the wall charger is connected, the battery may be unplugged or the connector is backwards. This could also indicate a faulty battery.

Replacement Parts and Accessories

Replacement parts and accessories for D-TEK $\rm CO_2$ are available through the same dealer from whom you bought the instrument.

Molded plastic storage case	
Headphones	032-0430
12 V (dc) car charger	703-055-P1
100 V (ac) wall charger (Japan)	033-0018-G1
115 V (ac) wall charger (US)	033-0019-G1
230 V (ac) wall charger (Euro)	
230 V (ac) wall charger (UK)	033-0022-G1
Battery	712-700-G1
Replacement infrared cell for D-TEK ${\rm CO}_2\dots$	716-701-G1
Filter cartridges, package of 5	712-707-G1
Replacement probe cap	712-705-G1
Specifications	
Usage	Indoor or Outdoor
Usage	
-	5 g/yr (0.2 oz./yr)
Minimum sensitivity to CO ₂	5 g/yr (0.2 oz./yr) 12 to 16 V (dc)
Minimum sensitivity to CO ₂	
Minimum sensitivity to CO ₂ Input voltage range Input current Operating and charging temperature range* Storage temperature range	
Minimum sensitivity to CO ₂	

^{*}May be operated for a limited time in lower temperature environments.

Troubleshooting Guide

Problem	Cause	Remedy
1) All yellow leak indicators flashing together.	1a) IR cell has become unseated.	1a) Remove IR cell access door and push both ends of the IR cell down. (Do not remove/reinsert sensor IR cell.)
	1b) IR cell has failed.	1b) Replace with new IR cell.
2) Will not detect CO ₂ .	2a) Unit is not warmed up and ready to use.	2a) Verify unit is beeping and no yellow leak indicators are flashing. (Single green light flashing while unit is beeping is OK.) If yellow leak indicators are scrolling across, wait 90 seconds for the unit to beep. If not, contact INFICON.
	2b) Pump failure.	2b) Verify battery is charged and properly connected. If pump still cannot be heard running with D-TEK CO ₂ ON and warmed up, contact INFICON.
	2c) Filter cartridge is clogged, preventing air and refrigerant from passing into IR cell.	2c) Install new filter cartridge.
	2d) Battery failure.	2d) See #3 below.
3) After warm up, the green power indicator, the last yellow leak indicator, and the Charge indicator flash.	3a) Battery needs charging.	3a) Charge battery for 10 to 12 hours.
	3b) Battery failure.	3b) Install a new battery.

Problem	Cause	Remedy
4) Erratic behavior; signals when bumped slightly.	4a) CO ₂ in background may be high or changing quickly.	4a) Take steps to reduce concentration or to limit changes in background (e.g., operator wearing a mask).
5) Pump is not working.	5a) Pump failure.	5a) Verify battery is charged and properly connected. If pump still cannot be heard running with D-TEK CO ₂ ON and warmed up, contact INFICON.
6) HI/LO indicators and green power indicator flash quickly with AC wall	6a) Battery is connected in reverse or is not connected.	6a) Remove battery door and carefully disconnect and reconnect the battery connector.
charger connected.	6b) Battery failure.	6b) Install a new battery.

Warranty and Liability Limitation

INFICON warrants your D-TEK CO₂ Refrigerant Leak Detector to be free from defects of materials or workmanship for two years from the date of purchase. INFICON does not warrant items that deteriorate under normal use, including power stick, infrared absorption element and filters. In addition, INFICON does not warrant any instrument that has been subjected to misuse, negligence, or accident, or has been repaired or altered by anyone other than INFICON.

INFICON liability is limited to instruments returned to INFICON, transportation prepaid, no later than thirty (30) days after the warranty period expires, and which INFICON judges to have malfunctioned because of defective materials or workmanship. INFICON liability is limited to, at its option, repairing or replacing the defective instrument or part.

This warranty is in lieu of all other warranties, express or implied, whether of MERCHANTABILITY or of FITNESS FOR A PARTICULAR PURPOSE or otherwise. All such other warranties are expressly disclaimed. INFICON shall have no liability in excess of the price paid to INFICON for the instrument, plus return transportation charges prepaid. INFICON shall have no liability for any incidental or consequential damages. All such liabilities are EXCLUDED.

Return Materials Authorization Procedure

All instruments and parts returned to INFICON for repair or credit must be properly packaged, insured, shipped transportation charges prepaid, and must have a Return Material Authorization (RMA) number issued before the material is returned. The RMA number must be marked on all shipping labels and packing slips. Please see your INFICON distributor for assistance. If you have any questions contact us at 800-344-3304.



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