

O P E R A T I N G M A N U A L



D-TEK™ Select

Refrigerant Leak Detector

English

 **INFICON**

EU Declaration Of Conformity



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 Select Refrigerant Leak Detector
Model Number 712-202-Gxx (Applicable for all group numbers)
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)
IEC 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

Brian King
Business Line Manager - Service Tools
Two Technology Place
East Syracuse, NY USA 13057
INFICON

EU Authorized Representative

INFICON GmbH
50968 Köln, Bonner Str. 498

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.

INFICON® and D-TEK™ Select are trademarks of INFICON.

Specification Table in Accordance with EN 14624

Minimum sensitivity to R134a, fixed (static)	1 g/yr
Maximum sensitivity to R134a, fixed (static)	>50 g/yr
Minimum sensitivity to R134a, moving (dynamic)	1 g/yr
Maximum sensitivity to R134a, moving (dynamic)	>50 g/yr
Minimum response/detection time	<1 second
Zeroing time	5-7 seconds
Recovery time for 50 g/yr exposure*	1 second
Minimum sensitivity in contaminated environment	2 g/yr
Calibration frequency: Check annually with calibrated leak standard.	
*Upper leak detection limit is not specified by INFICON as there is no upper limit to the size of the leak the detector is able to detect. As no 50 g/yr leak standard was available during testing, a 31 g/yr leak was substituted.	

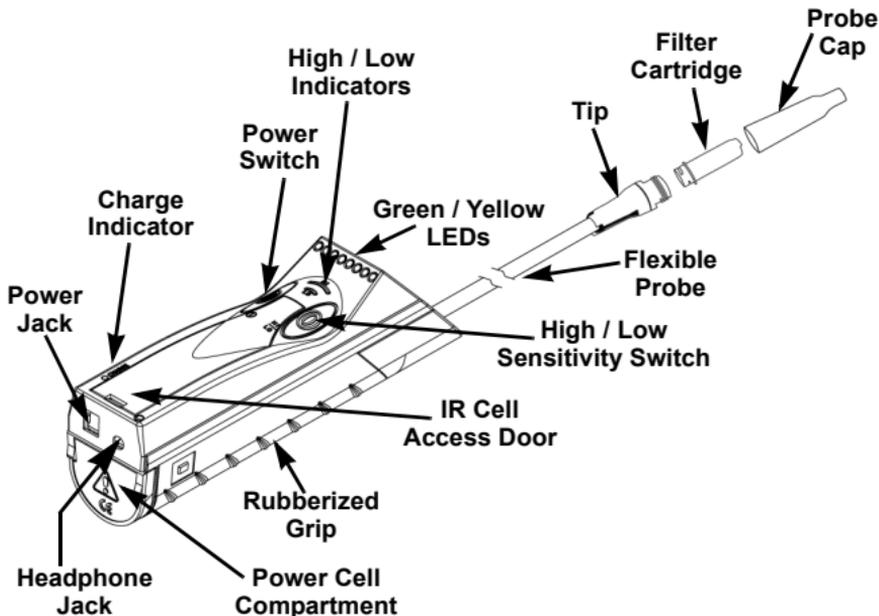
**WARNING**

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

Thank you for buying the INFICON D-TEK Select Refrigerant Leak Detector!

With normal use, D-TEK Select from INFICON provides years of trouble-free service.

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



Getting Started

D-TEK Select is shipped with the infrared cell and power stick installed. The nickel/metal hydride batteries in the power stick are not yet charged. To charge them, connect the cord of the AC power adapter to the power jack at the rear of the instrument, and plug the adapter into the appropriate mains outlet. The battery charging light (rear left side) will flash when the detector is charging, changing to steady illumination when the power stick is charged. **Allow 10 hours for the full charge.**

NOTE: Expect approximately 6.5 hours of operation from a fully charged power stick. D-TEK Select will operate off the AC power adapter. Connecting the supplied AC power adapter will allow operation of the detector while the power stick charges.

Using Your INFICON D-TEK Select



WARNING

Do not operate this instrument in the presence of gasoline, natural gas, propane, or in other combustible atmospheres.

Using D-TEK Select is simple. Press the power switch once to turn the detector ON. The green ON LED will illuminate, and the yellow LEDs will illuminate from left to right in a scrolling fashion while the infrared cell warms up (approximately 60 seconds). When the detector is warmed up and ready for use, the yellow LEDs extinguish and a steady beeping is heard.

D-TEK Select provides similar responses to all CFCs, HCFCs, HFCs, and refrigerant blends (i.e., R-404A, R407C, R-410A) as well as SF6. There is no need to select the desired refrigerant.

NOTE: D-TEK Select does not detect R-11 due to the particular physical properties of this refrigerant.

Headphone sets may be used with D-TEK Select. When headphones are used, alarms are only heard through the headphones.



WARNING

Only use headphone sets supplied by INFICON. Serious hearing damage may occur if other headphone sets are used.

Finding Leaks

1. Place the tip of the leak detector probe as close as possible to the site of the suspected leak. Try to position the probe within 1/4 inch (0.5 cm) of the possible leak source.
2. Slowly (approximately 1 - 2 inches (2.5 - 5 cm) 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 Select only responds to changes in concentration of the refrigerant from the leak. Moving the probe permits the instrument to respond properly to these changes.

3. When the instrument detects a leak source, its yellow LEDs will illuminate and it will beep rapidly.
4. When D-TEK Select signals a leak, pull the probe away from the leak for a moment, then bring it back to the location to pinpoint the leak.
5. If the concentration of the refrigerant gas is high, press the sensitivity switch to change to the LOW sensitivity setting. The LOW sensitivity setting helps find the exact site when a leak is large.
6. Once the leak source is isolated, return the sensitivity setting to HIGH to continue using D-TEK Select.
7. When leak checking is complete, press the Power switch to turn D-TEK Select OFF.

Using the Manual Zero Mode

D-TEK Select's automatic suppression of background contamination can be disabled, allowing for the continuous display of a leak without "zeroing it out." When D-TEK Select is set in the manual zero mode, the user may manually reset or zero the detector.

To initialize this function, press and hold the HI/LO switch for 5 seconds. The "HI" sensitivity indicator will flash to alert the user the detector is in manual zero mode. Increases in concentrations of refrigerants will be displayed by the illumination of the yellow LEDs. For best test results, allow D-TEK Select to warm up for 5 to 10 minutes before engaging manual zero mode.

To "zero" D-TEK Select, press the HI/LO switch once. Both the HI and LO sensitivity indicators will flash for a few seconds while the detector measures and sets a new background base level. Any increase in concentrations of refrigerant above this base level will be displayed.

To turn off the manual zero mode, press and hold the HI/LO switch until the HI sensitivity indicator becomes steady.

NOTE: When D-TEK Select is turned on, it will always default to automatic zeroing mode.

Recharging the Power Stick

A fully charged power stick should provide power for approximately 6.5 hours of continuous operation. When the battery is fully depleted, D-TEK Select will shut down. To show the battery is depleted, the green ON LED, the last yellow leak LED, and the amber battery charging LED will flash. Recharge the D-TEK Select by connecting the supplied AC power adapter or cigarette lighter adapter.

NOTE: D-TEK Select does not need to be fully charged to operate nor fully discharged before recharging.



WARNING

Do not attach any other power cords to D-TEK Select's power jack except the AC power adapter and DC cords designed for this instrument.

The battery charging indicator (rear left side) will flash when the power stick is charging, changing to steady illumination when the power stick is fully charged.

Allow 10 hours for a full charge.

D-TEK Select will operate using the AC power adapter. Connecting the supplied AC power adapter will allow operation of the detector while the power stick charges.

Changing the Filter Cartridge

D-TEK Select 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 affect the sensitivity.

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



CAUTION

Turn off D-TEK Select and hold the probe with the filter tip pointing down when removing the filter cap.

To change the filter cartridge:

1. Twist off the protective cap.
2. Remove and dispose of the used filter cartridge.

NOTE: Do not allow any moisture or dust to get into the probe. Do not disassemble or attempt to clean the material inside the filter cartridge, as it can be damaged when handled.

3. Slide a new filter cartridge into the cap.
4. Twist the cap with the new filter cartridge onto the probe base until it is tight.

NOTE: It is very important to operate D-TEK Select with a filter cartridge installed at all times. Failure to do so could damage the leak detector's components.

Changing the Infrared Cell



WARNING

Components may be hot. Turn off the detector and disconnect the power adapter cord before removing the infrared cell door.

D-TEK Select'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 approximately 1000 hours.

D-TEK Select will flash all the yellow leak LEDs when the IR cell has reached the end of its useful life. To replace the IR cell:

1. Locate the latch for the IR cell door on the top cover (at the rear of the detector).
2. Using a small screwdriver, pull the latch forward and remove the door.
3. Grasp the IR cell according to the directions printed on its label. Pull it straight out so both ends are released at the same time.
4. Remove the replacement IR cell from the protective package.
5. 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.

Removing/Replacing the Power Stick

D-TEK Select uses a pre-assembled power stick.

Remove the battery compartment door on the back of D-TEK Select by pressing on both release buttons on the grip and pulling the door straight out. The power stick is connected to the PCB board via a miniature electrical connector.

Disengage the connector and slide the power stick out of D-TEK Select.

Slide the new power stick into D-TEK Select and push the miniature connector on the power stick into the mating half on the PCB board. Do not bend the PCB board's connector away from the board. Once the power stick is in place, close the battery compartment by aligning the two tabs and sliding the door straight in until it latches. Ensure the wire leads on the power stick are not pinched in the door. **Allow 10 hours to fully charge the new power stick.**

NOTE: If D-TEK Select does not power up after the power stick is replaced, check that the key connector on the power stick is mated properly to the connector on the circuit board. Reverse the connection if necessary and power up again. If the HI/LO indicators flash in a rapid, alternating manner when the AC adapter is connected, the power stick is installed backwards.

Replacement Parts and Accessories

Replacement parts and accessories for D-TEK Select are available through the same dealer from which instrument was purchased.

Molded plastic storage case	712-702-G1
Headphones	032-0430
Premium headphones	032-0427
12 volt cord with cigarette-lighter plug, 3 m (10 ft.)	703-055-P1
115 volt adapter and cord, 1.5 m (5 ft.)	033-0019-G1
230 volt (Euro plug) adapter and cord, 1.5 m (5 ft.)	033-0020-G1
230 volt (UK plug) adapter and cord, 1.5 m (5 ft.)	033-0022-G1
100 volt (Japanese) adapter and cord, 1.5 m (5 ft.)	033-0018-G1
230 volt (Australia) adapter and cord, 1.5 m (5 ft.)	033-0035-G1
Power stick	712-700-G1
Replacement infrared cell	712-701-G1
Filter cartridges, package of 5	712-707-G1
Replacement probe cap	712-705-G1

Specifications

Usage	Indoor or Outdoor
Minimum sensitivity to R12 and R134a	1 g/a
Input voltage range	12 to 16 V (dc)
Input current	500 mA Max.
Operating and charging temperature range*	-20 to +50°C (-4 to 122°F)
Storage temperature range	-20 to +60°C (-4 to +140°F)
Humidity	95% RH NC Max.
Altitude	2000 m (6500 ft.)
Pollution degree	2
Overvoltage category	2
Weight (with power cells)	0.58 kg (1.28 lb.)

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

Troubleshooting Guide

Problem	Cause	Remedy
1) All yellow lights flashing together.	1a) IR sensor cell has become unseated.	1a) Remove sensor access door and push both ends of sensor down. (Do not remove/reinsert sensor cell.) Restart unit and examine.
	1b) IR sensor cell has failed.	1b) Replace with new sensor, part number 712-701-G1.
2) Will not detect refrigerant.	2a) Unit may not be warmed up and ready to use.	2a) If yellow lights are scrolling, wait 90 seconds to see if the unit starts to beep and the lights stop scrolling. If not, contact INFICON.
	2b) Battery may be dead.	2b) See #3 below.
	2c) Filter cartridge may be clogged, preventing air and refrigerant from passing into IR cell.	2c) Replace used filter cartridge with a new one.
	2d) Pump may have failed.	2d) You should hear the pump running after the warm up sequence is completed. VERIFY it is not a low battery condition (see #3). If not, contact INFICON.
	2e) User may be working with R-11.	2e) This refrigerant is only detectable if the leak is quite large.
3) After warm up sequence, the green, the last yellow and the amber charging LEDs flash.	3a) Battery needs recharging.	3a) Charge battery for 10-12 hours.
	3b) Power stick has failed.	3b) Replace power stick with part #712-700-G1.
4) Pump is not working.	4a) Pump has failed.	4a) See 2d.

Problem	Cause	Remedy
5) Unit does not power up. HI/LO indicators flash in a rapid, alternating manner when AC adapter is connected.	5a) Power stick/ battery has been connected in reverse.	5a) Reverse the battery's connection and power unit up.

Warranty and Liability-Limitation

INFICON warrants your D-TEK Select 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 cell 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, not 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 is to 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.



TWO TECHNOLOGY PLACE
EAST SYRACUSE, NY 13057-9714 USA

Phone: +1.800.344.3304
Fax: +315.437.3803
E-Mail: service.tools@inficon.com
www.inficonservicetools.com

© 2016 INFICON

074-392-P1M