

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



TEK-Mate[®]
Refrigerant Leak Detector



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 and maintained and used in applications for which it was made.

Equipment Description TEK-Mate Refrigerant Leak Detector
Model Number 705-202-Gxx (Applicable to all group numbers)
Applicable Directives 2014/30/EU General EMC
2011/65/EU RoHS

Applicable Standards:

- Safety:** EN 61010-1:2010 Safety requirements for electrical equipment for measurement, control, and laboratory use. General requirements.
- Emissions:** EN 61326-1:2013 Edition 2.0 (Radiated, Conducted & Harmonic Emissions) (EMC - Measurement, Control & Laboratory Equipment) CISPR 11/EN 55011:2009 Emission standard for industrial, scientific, (+A1:2010) and medical (ISM) radio RF equipment (Class A)
- Immunity:** EN 61326-1:2013 Edition 2.0 (EMC - Measurement, Control & Laboratory Equipment) Immunity per Table A.1 - Portable Test and Measurement Equipment
- RoHS:** EN 50581:2013 Technical documentation for the assessment of electrical and electronic products with respect to the restriction of hazardous substances
- Other:** Performance of portable leak detectors and of room monitors for halogenated refrigerants

CE Implementation Date:

April 20, 2016

Manufacturer Representative

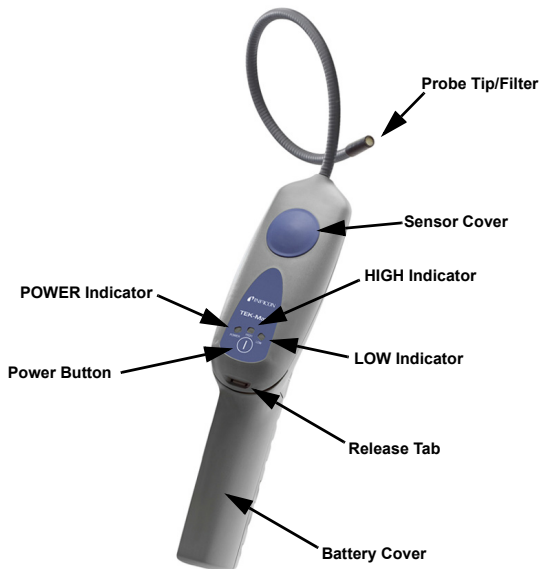
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ANY QUESTIONS RELATIVE TO THIS DECLARATION OR TO THE SAFETY OF INFICON'S PRODUCTS SHOULD BE DIRECTED, IN WRITING, TO THE AUTHORIZED REPRESENTATIVE AT THE ABOVE ADDRESS.

To get the best performance from your TEK-Mate Leak Detector, please read this manual carefully before you start using it. If you have any questions or need additional assistance, please call 800-344-3304. We'll be happy to help you.



WARNING

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

TEK-Mate®, Laboratory Accurate, Toolbox Tough® and INFICON® are trademarks or copyrights of INFICON GmbH.

Getting Started

1. Install the batteries. See [How to Install the Alkaline Batteries](#).
2. Install the sensor. See [How to Install or Change the Sensor](#).

NOTE: Installation of the batteries and sensor is required before use.

3. Long press the power button to turn TEK-Mate On or Off.
4. Wait for TEK-Mate to warm up. All three indicators will illuminate and TEK-Mate will alarm during warm up. When the HIGH indicator starts flashing and TEK-Mate beeps about one beep per second, warm-up is complete.
5. To toggle between HIGH and LOW sensitivity modes, press the Power button. HIGH sensitivity is the default setting.

The INFICON TEK-Mate Refrigerant Leak Detector provides similar responses to all CFCs, HCFCs, HFCs, HFOs, and refrigerant blends (e.g. R-410A, R407c) as well as SF6.

How to Install the Alkaline Batteries

1. Remove the battery cover by releasing the latch and sliding the cover down and off the handle. You may need a screwdriver or similar tool to do this.
2. Install two “D” size alkaline batteries as shown in [Figure 1](#).
3. Reinstall the battery cover by aligning it with the handle and sliding it up until the latch engages.

NOTES:

- ♦ Low battery is indicated by the green POWER indicator flashing. TEK-Mate may continue to operate for up to one hour.
- ♦ Dead battery is indicated by the POWER and HIGH indicators flashing.

Figure 1. Properly Installed Alkaline Batteries



NOTE: Dispose of depleted alkaline batteries according to applicable state and local regulations. In the absence of such regulations, recycle and/or dispose of batteries through voluntary waste recycling programs.

How to Install or Change the Sensor

A new TEK-Mate is shipped with its sensor packed separately. **The sensor must be installed before use.** This specialized sensor will operate for about 100 hours before it will need to be replaced.

1. Remove the rubber sensor cover by lifting at the outer edge.
2. If you are replacing a worn out sensor, remove the worn out sensor by pulling it straight out of the socket and discard it.

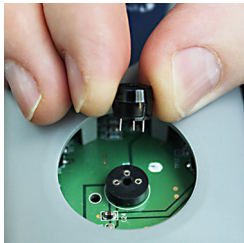


WARNING

The worn out sensor may be hot.

3. Remove the new sensor from its packaging and carefully align the three sensor leads (small wires coming out of the bottom of the “can”) with the three holes in the sensor socket. Insert the leads into the holes by gently pressing straight down on the sensor until the sensor leads contact the bottom of the socket. Be careful not to bend the sensor leads. See [Figure 2](#).
4. Reinstall the rubber sensor cover by pressing it down firmly around the edges. Be sure the edges of the cover are flat against the surface of the detector.

Figure 2. Installing the Sensor



Using your INFICON TEK-Mate



WARNING

Do not operate TEK-Mate in the presence of gasoline, natural gas, propane, or in other combustible atmospheres.

How to Find Leaks

NOTE: A sudden whipping of the leak detector probe or blowing into the probe tip will affect the air flow over the sensor and cause TEK-Mate to alarm.

1. Turn TEK-Mate On and wait for warm-up to complete.
2. Place the tip of the probe as close as possible to the site of the suspected leak. Try to position the probe within 1/4 in. (5 mm) of the possible leak source.
3. Slowly (approximately 1 to 2 in. (2.5 to 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. If held on a leak, the auto zero feature will gradually zero out the leak signal.

4. When the instrument detects a leak, it will beep more rapidly and the indicator flash rate will increase to signal the leak.
5. When TEK-Mate signals a leak, pull the probe away from the leak for a moment, then bring it back to pinpoint the location. If the leak is large, toggle sensitivity to LOW to make it easier to find the exact site of the leak.
6. Return sensitivity to HIGH before searching for additional leaks.
7. When finished leak-testing, turn TEK-Mate Off.

How to Change the Filter

The foam filter at the probe tip should be replaced if it becomes plugged with water or oil or appears dirty. To replace the filter, pull out the old filter (with a paper clip or similar device). Then, push in the new filter.

Cleaning and Storage

TEK-Mate's plastic housing can be cleaned with standard household detergent or isopropyl alcohol. Care should be taken to prevent the cleaner from entering the instrument. Since gasoline and other solvents may damage the plastic, protect your INFICON TEK-Mate from contact with these substances.

Troubleshooting

Except for the batteries and the sensor, the internal parts of the TEK-Mate Leak Detector are not user serviceable. If you experience a problem with TEK-Mate, see the Troubleshooting Table below to determine how to remedy the problem. If you cannot remedy the problem, take TEK-Mate to your wholesaler for evaluation.

PROBLEM	CAUSE	REMEDY
1. Poor sensitivity. TEK-Mate does not find leaks.	1a. Sensor has reached the end of its useful life.	1a. Replace the sensor. See page 6.
	1b. Sensitivity set to LOW instead of HIGH	1b. Set the sensitivity to HIGH and scan for the leak again.
2. TEK-Mate responds slowly to a leak.	2a. Dirty or wet filter.	2a. Replace the filter. See page 7.
	2b. Failure in the pumping system.	2b. Turn TEK-Mate on and listen for a high-pitched motor sound. If you do not hear the motor, return TEK-Mate to your wholesaler for evaluation.
	2c. The sensor cover is not sealing.	2c. Make sure the sensor cover is properly installed. See step 4 on page 6.
3. Will not power up.	3a. Batteries are worn out.	3a. Install a new set of batteries. See page 5.
	3b. Batteries have been improperly installed.	3b. Check battery installation as shown in Figure 1. on page 5.

PROBLEM	CAUSE	REMEDY
4. False alarms - TEK-Mate alarms when the probe is moved or bumped.	4a. Sensor leads are bent.	4a. Remove the sensor and inspect the leads. Straighten the leads with needle nose pliers, if necessary, and reinstall the sensor.
	4b. Moisture was absorbed by the sensor during a long period without use.	4b. Run TEK-Mate for at least 20 minutes. The absorption of moisture does not affect the life or sensitivity of the sensor.

Return Authorization Procedure

All defective TEK-Mates should be returned to your wholesaler for warranty evaluation. If you have any questions, please contact INFICON at 800-344-3304.

NOTE: Do not return your defective unit directly to the factory without first contacting your wholesaler.

Specifications

Usage	Indoor or Outdoor
Minimum sensitivity	High Sensitivity 0.25 oz./yr. (7 g/a)
Operating temperature range	-20 to +50 °C (-4 to 122 °F) ¹
Storage temperature range	-20 °C to +60 °C (-4 °F to + 140 °F)
Humidity	95% RH NC Max.
Altitude	2000 m (6500 ft.)
Power Supply	Two "D" cell alkaline batteries
Battery Life	Approximately 16 hours
Pollution degree	2
Overvoltage category	2
Weight (with batteries)	0.58 kg (1.28 lb.)

¹May be operated for a limited time in lower temperature environments.

Specification Table in Accordance with EN 14624	
Minimum sensitivity to R134a, fixed (static)	2 g/yr
Maximum sensitivity to R134a, fixed (static)	>50 g/yr
Minimum sensitivity to R134a, moving (dynamic)	2 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*	12 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.	

Replacement Parts and Accessories

Replacement parts and accessories for your INFICON TEK-Mate Refrigerant Leak Detector are available through the same dealer from whom you bought the instrument.

Plastic storage case 705-700-G1

Replacement sensor 703-020-G1

Tip filters, package of 20 705-600-G1

Warranty and Liability

INFICON warrants your TEK-Mate 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 cells, sensors 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's 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's 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.



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