

# INTERMEKS

Internet Machine Electronics Control Systems

(IMEKS-LC000 Series)

## AIR LEAKAGE TEST INSTRUMENT INSTRUCTION MANUAL



**Please read this manual thoroughly and carefully before installing and using your device.**

**Dear Customer,**

**We are pleased to present you the modern test device produced in parallel with the developing technology.**

**This user manual is prepared in order to install the device safely and with the aim to assist while you are using.**

**Please read the information and warnings in your manual carefully before installing and using your device.**

**This manual is part of the device, so it must be kept with the device as long as you use it.**

## RECOMMENDATIONS AND WARNINGS::



**This device only works with Air. It cannot be operated with flammable or other gases.**

- Disconnect the hose from the air inlet or shut off the compressed air with the valve when the device is not in operation (break and recess times).
- The device must be kept away from heat, humidity and dust. Otherwise the device may malfunction or make incorrect measurements.
- Protect the device hoses from the sun or heat sources. Failure to do so may result in incorrect measurements.
- The network which the device is connected must be well-grounded.
- The manufacturer accepts no liability for faults resulting from improper connection to not grounded lines or incorrect use of the device.
- There must be no high fluctuations or interference in the electrical network to which your device is connected.
- Some machines (e.g. spot welding machines) disrupt the network signal and generate surges and interference. Interference and fluctuations disrupt the operation of the device.
- Switch off the device power during long periods off time and outside working hours.

Air Inlet Pressure shall be maximum 4 bars. It should not be close to compressors or machines using alternating air. The device performs accurate measurements only with a regulated compressed air inlet.

- There must be water drying and dewatering systems before the air intake. Water or moisture in the air will cause the device to malfunction.
- Test Output Pressure is recommended to be 150 mbar
- Check hoses and connections frequently to ensure that they do not leak.
- Do not splash water, disconnect the appliance from the power supply before servicing, and contact a qualified service or qualified technician in case of malfunction.

## **CONTENTS**

- **Description of the Device**
- **Measurement Principle**
- **Principle of Measurement Cycle**
- **Installation**
  - **Definition of the Control panel**
  - **Connections**
- **Commissioning and Settings**
  - **Menus**
  - **Opening of device**
- **Operating Modes and Parameters**
  - **AUTOMATIC**
  - **MANUAL**
  - **PARAMETERS**
- **Technical Specifications**
- **Options**
- **Useful Information and Symbols**

## • DESCRIPTION OF THE DEVICE

Your INTERMEKS IMEKS-LC000 series device is a tester that works with external air pressure in the facility and produces low pressure leakage by means of the regulation system inside it.

The device is designed to measure air leaks of closed chambers under pressures at the milibars level in mass production or laboratories.

In particular, it is intended to have short measuring times in order to be used in mass production controls.

## • MEASUREMENT PRINCIPLE

The device is equipped with precision sensors. The minimized air pressure is connected to the unit to be tested via the device. As seen in the device settings section, the closed test volume of the unit is used for leakage calculations. The information produced by the sensors by evaluating the pressure drop on the product and the network conditions is the basis of the calculations.

## • MEASUREMENT CYCLE PRINCIPLE

The cycle is the process between two test operations. The cycle continues from the beginning of a test to the end of the test.

Commands that initiate the cycle Start is a button in "Manual Test" position. It is the start button and/or test piece replacement in the "Auto Test" position.

The replacement is detected by the device and is accepted as a command to start a new test.

The optional models can also be used to initiate cycles with external automation controls or pedal controls.

There is a flow limiter inside the device for detecting test pieces with very small flow rates.

- **INSTALLATION**
  - **Front Panel Introduction**



The device control panel is equipped with a touchscreen LCD interface display and a pressure adjustment knob.

On the touch screen, the user can access the necessary menus for entering the necessary commands, processing the settings and parameters.

With the pressure adjustment knob, the desired test pressure can be determined. The set pressure is monitored on the

- **Connections**  
**Connections and Important**

**Notices:**

- **Electrical Power Supply:** Switch off the power to the device during long periods off time and outside working hours.
- Always connect the power plug of your device to a grounded power outlet.



- **Input Max. Pressure:** Air Inlet Pressure will be maximum 4 bars.
- There must be water drying and dewatering systems before the air inlet.
- Water and even moisture in the air will cause the device to malfunction.
- Switch off the air supply during prolonged waiting and outside working hours. These measures will help to protect sensors of your device from contamination that may occur in a long time.



- **Test Outlet Pressure:** Test Outlet Pressure is recommended to be 150 mbar.
- **Outlet Hose Length:** It is recommended not to be longer than 2 meters.
- **Outlet Hose Outer Diameter:** 6-10 mm.
- Check hoses and connections frequently to ensure that they do not leak.



# COMMISSIONING

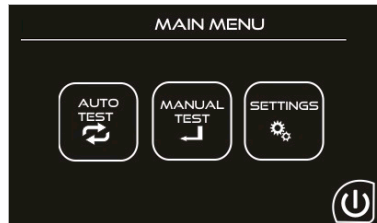
- **Turning on device**

The air connections are made as described on the connections page. The electrical connection is made to the AC input indicated on the connections page with the supplied 220V AC power supply. The brand and version information appears for a short time as the initial screen, then the main menu appears.



- **Menus**

The main menu: Auto Test, Manual Test and Settings appear as three headings.



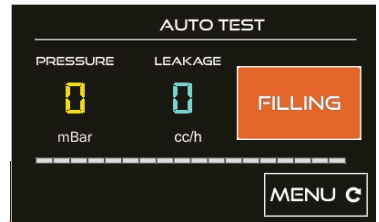
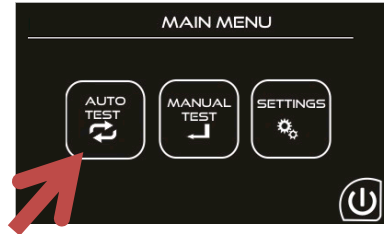


- **OPERATING MODES AND PARAMETERS**

### **AUTOTEST**

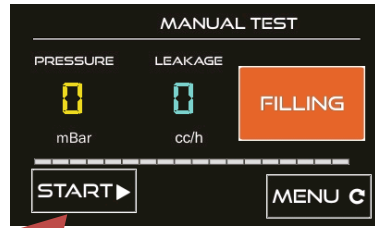
This mode is used for automatic and serial measurements. The test process is started by pressing the “AutoTest” button on the screen. The "test unit" is connected to the air outlet test end with a robust and flexible hose so that it does not leak the clamp connection is recommended here. By closing the hose outlet, checking “00 cc / h under “Leakage” caption to ensure that the hose does not leak. The "test unit" is connected. Text “Filling” appears on the screen. The "test unit" is automatically filled to the specified value by air. When the desired pressure is reached, the stabilization period starts automatically and “Stabilization” appears on the display. The measuring period starts at the end of the stabilization period and the measured values appear on the display at the end of the test period. At this time, “accept” or “reject” warnings appear at the end of the evaluation. The new measuring cycle starts when the test unit is removed.

- In case of excessive leakage, the testing process does not start and the text “Gross Leak” begins to appear. To start the test again, press the “START” button.



## • MANUAL

Press the “MANUAL” button on the screen. When the test piece is connected in manual mode and the “START” button is pressed, the one-cycle test process starts and ends. It waits until the “START” button is pressed again. In case of excessive leakage, the testing process does not start and the text “Gross Leak” begins to appear. To start the test again, press the “START” button again.



\* Pedal can be used in optional models parallel to this button.

## SETTINGS

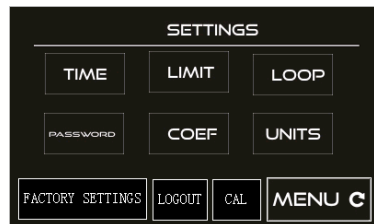
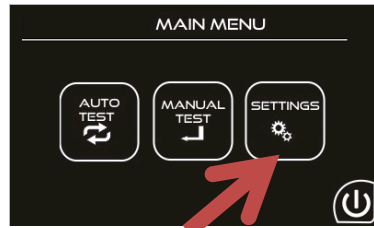
Press the “Settings” button on the opening screen. “Password” text will appear. (Default value is 1234). This screen is passed with a password to prevent unauthorized people from entering and changing settings. After entering the password, click “LOGIN” button and go to “Settings” page.

**TIME, LIMIT, LOOP,  
COEFFICIENT, UNITS**

Buttons are displayed and

**FACTORY SETTINGS, LOGOUT, CAL**

Buttons are displayed at the bottom line



**TIME** : Determines the processing times in the test process.

**Filling:** Filling time (default value is 800 ms)

**Stabilization:** Stabilization time (default value 800 ms)

**Test:** Measurement time (factory setting 1000 ms)

TIME		
Filling Time	0000	ms
Stabil. Time	0000	ms
Test Time	0000	ms

DEFAULT      SAVE      MENU C

**LIMIT:** It provides the determination of the tolerance values required for evaluation after measurement.

**Upper Limit:** Leakage Upper Limit. Values greater than this number are considered excessive leakage. In case of excessive leakage, the test stops and the warning screen appears "GROSS LEAK". In Automatic mode, the Start button must be pressed again to continue the test process. (Default value is 200 cc / h)

**Lower Limit:** Leakage lower limit. Values greater than the specified number are considered rejection. (Default value is 3 cc / h)

LIMIT		
Upper Limit	0000	cc/h
Lower Limit	0000	cc/h

DEFAULT      SAVE      MENU C

\*\* After changing the data, it is necessary to press "Save" button to save.

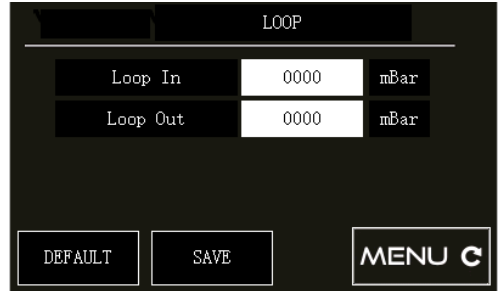
\*\* Default Button allows to reset the set values to the factory settings (see "Default" title).

**LOOP:**

“AUTOMATIC” is the part where the inlet and outlet pressures are specified in the test.

**Loop in Pressure:** The value of the filling pressure required for the start of test operations during “filling”. The test will not start until this value or higher is reached and “FILLING” flashes. (Default value is 150 mbar)

**Loop out Pressure:** The test is automatically exited when the test pressure drops. When the new test piece is connected or when the hose end is removed from test piece, the pressure comes down below "loop out pressure". (Default value is 146 mbar) then, “Filling” text appears and new process starts automatically.



**PASSWORD:**

It is an updateable password change button for access to Settings section.

**COEFFICIENT:** Accuracy factors of measurement results. (Changing is not recommended)

**Volume:** The closed chamber volume of the test piece, this is required for accurate measurement.

**UNIT:**

Setting the selection of pressure units: The factory setting is mbar.

Pa: Pascal

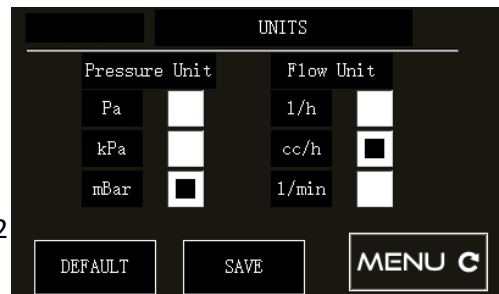
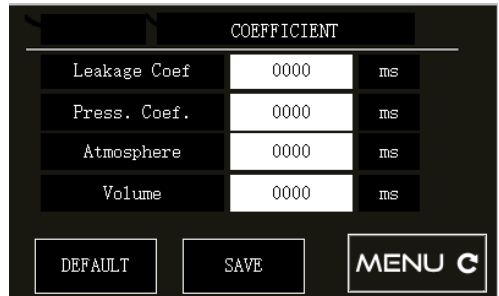
KPa: Kilopascal

mbar: Milibar

l/h : Liters per hour

cc/h: Cubic centimeters per hour

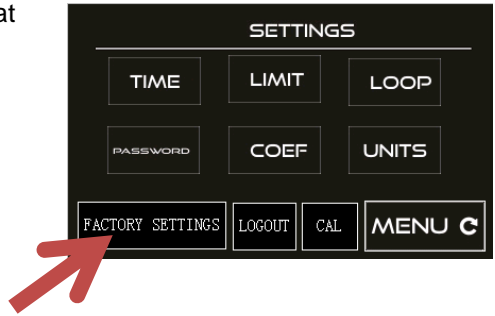
l/min: Liters per minute



## DEFAULTS:

The factory settings are the settings that are stored in the device when it is first switched on. These values are defaulted as follows:.

1. Pressure Unit: mbar
2. Filling Time: 800 ms
3. Stabilization Time: 800 ms
4. Testing Time: 800 ms
5. Lower Limit: 3 cc/h
6. Upper Limit: 200
7. Test In Pressure: 150 mbar
8. Test Out Pressure: 146 mbar
9. Filter Cycle: 64
10. Volume :300 cc
11. Calibration Pressure Coef.:
12. Calibration Leakage Coef.:
13. Password: 1234



## TECHNICAL SPECIFICATIONS

- a. Power Input: 230V 50Hz
- b. Input Pressure: 4 Bar
- c. Output Pressure: Max 250 mBar
- d. Filter..... 40 micron
- e. Regulator.....0-500mBar
- f. Ambient temperature: (Working temperature) : 5-55 ° C
- g. Dimension: 44x30X24 cm
- h. Weight: 6 Kg

## • OPTIONS

- a. Remote Control
  - i. External Start Terminal (For Pedal etc)
  - ii. External Stop terminal
  - iii. Passed Output Contact Terminal
  - iv. Rejected Output Contact Terminal