inomatec
LEAK TEST SOLUTIONS

LTC-503

Highlights

- **Superior leak testing performance** with shorter test cycles
- **5" touchscreen** with new intuitive, smartphone-like navigation
- **Available for multiple test methods**
- **Graphical data displays**
- **Fast delivery**

High-performance entry-level leak testing made easy

The new LTC-503 is an entry-level leak tester like you've never seen before. Engineered innovation delivers high-performance measurement in a durable, robust design and its all-new interface simplifies your leak testing. The feature-rich LTC-503 is built on over 40 years of leak testing expertise and is suitable for a broad range of standard applications.

Entry-level leak testing made easy

Everything about the LTC-503 is designed to make it easy to set up and manage your leak test. From the first touch on its screen, you'll find it easy to use and navigate—just like a smartphone. Programs are conveniently organized. Configuration is simplified. The large colour capacitive touchscreen displays all the information the operator needs for the task.

Our system seamlessly adapts to your factory's requirements, offering user access controls, multilingual support, and the flexibility to operate in your preferred units.

Safe and secure integration into your test station and with your plant floor IT is also easy as is the ability to collect and export data in many formats. Use graphical live data view to troubleshoot issues or find good test parameters.

The LTC-503 is simple to use and manage from start to finish.

Entry-level leak testing that performs

The new LTC-503 offers better leak testing performance and superior repeatability. Design updates include high-accuracy sensors and internal volume optimization to provide reliable, precise measurements to detect leaks as fine as 0.1 Pa.

Low power usage and a new manifold design reduce thermal effects so that temperature within the instrument does not impact measurement.

The new system includes valve technology good for 16 million cycles to reduce service intervals and improve use in high cycle applications.

Entry-level leak testing connected

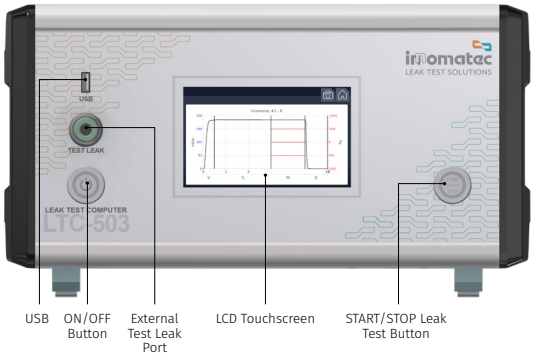
The LTC-503 can be integrated into fully automated testing machines and sequences via all common plant floor interfaces and protocols. It communicates directly with all peripheral devices for data transfer, management, evaluation and machine control. The unit is fully remote operable with advanced data export and integration options. It can also directly control small fixtures to reduce PLC programming requirements.

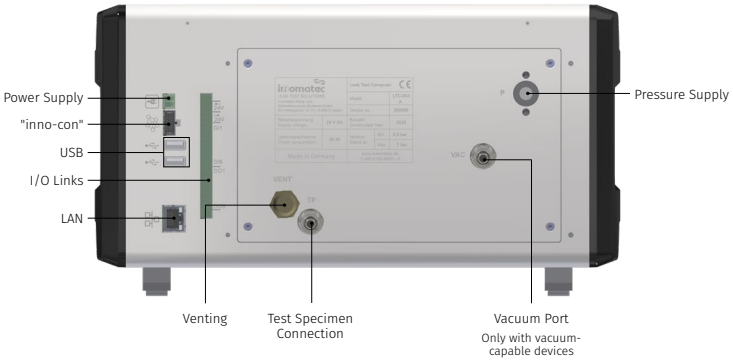
Leak testing for today's demands—and tomorrow's expectations

The robust hardware is built for reliability and long-term use.

The LTC-503 works for a range of applications

The LTC-503 delivers superior functionality at a cost-effective price, making it an excellent choice for organizations prioritizing both quality and budget.





Pressure Change Method LTC-503 A

The Pressure Change Method (A) with absolute/relative pressure sensors is one of the simplest and most reliable methods for leak testing. The test object is subjected to overpressure or vacuum, and the pressure change over time is recorded.

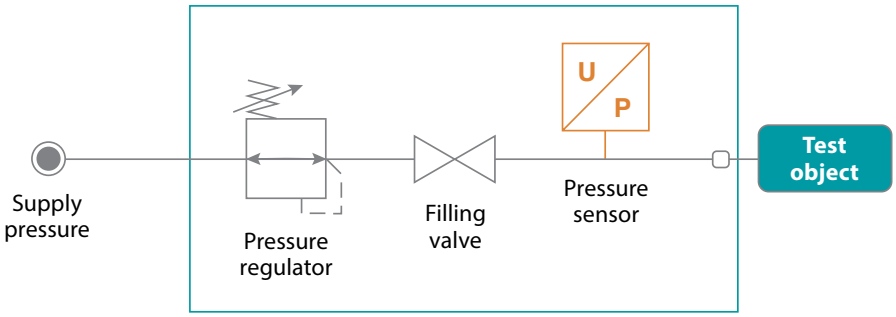
Pressure Change test types

- Pressure/Vacuum Decay: Leak Standard | ΔP | ΔP/ΔT
- Blockage Detection
- Membrane Test
- Hold Pressure
- Stagnation Pressure

Pressure transducer options

Range	Resolution [Pa]	Repeatability [Pa]
500mbar	0.03	1.5
2bar	0.06	2.5
8bar	0.14	7.5
14	0.28	15.0

Pressure Change test circuit



Pressure regulator options

Regulation ranges	
-1...1bar	0...6bar
-1...6bar	0...8bar
-1...10bar	0...10bar
0...0,5bar	0...14bar
0...2,0bar	

Measuring resolution test pressure/leak rate

Up to four decimal places selectable X-X.XXXX for pre-filling, filling, stabilizing, testing and venting processes.

Max. resolution	**0.0005 ml/min**

Additional functions

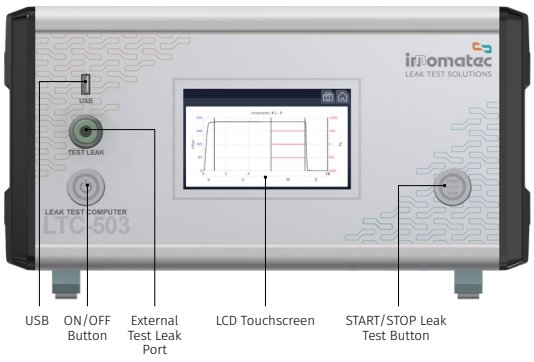
- Tool Control
- Endurance Test
- MSA Mode
- Ramp

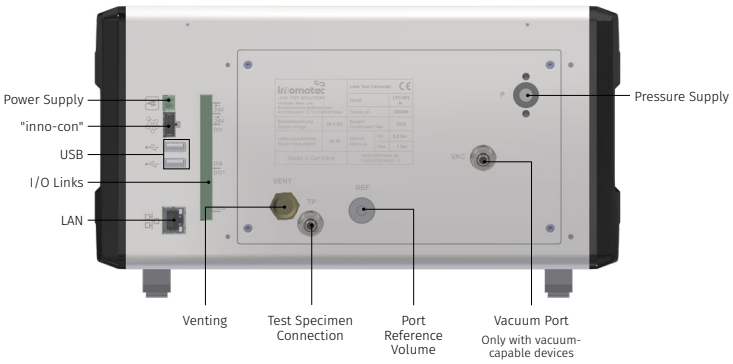
Auto test setup

- Automated optimization of test program based on maximum user allowable cycle time
- Simplifies instrument test programming and setup

Leak Standard

- Optional external test leak





Pressure Differential Method LTC-503 R

The Pressure Differential Method (R) with reference volume is the most common method for leak testing. A reference volume—either a small internal volume or an external volume such as a master test specimen—is pressurized together with the test specimen. After the stabilization time, the pressure change between the two volumes is measured using a highly sensitive pressure difference sensor.

Pressure Differential test types

- Pressure/Vacuum Decay: Leak Standard | ΔP | ΔP/ΔT
- Blockage Detection
- Membrane Test
- Hold Pressure
- Stagnation Pressure

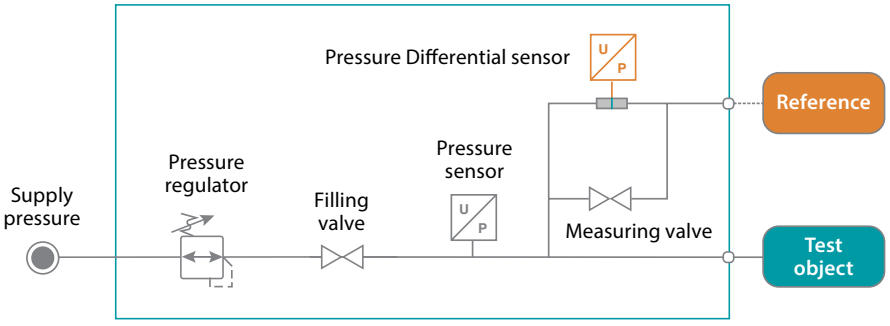
Pressure transducer options

Range	Resolution [Pa]	Repeatability [Pa]
500mbar	0.03	1.5
2bar	0.06	2.5
8bar	0.14	7.5
14	0.28	15.0

Pressure Differential transducer option

Range	Resolution [Pa]	Repeatability [Pa]
-300...300mbar	0.007	0.9

Pressure Differential test circuit



Pressure regulator options

Regulation ranges	
-1...1bar	0...6bar
-1...6bar	0...8bar
-1...10bar	0...10bar
0...0,5bar	0...14bar
0...2,0bar	

Measuring resolution test pressure/leak rate

Up to four decimal places selectable X-X.XXXX for pre-filling, filling, stabilizing, testing and venting processes.

Max. resolution **0.0005 ml/min**

Additional functions

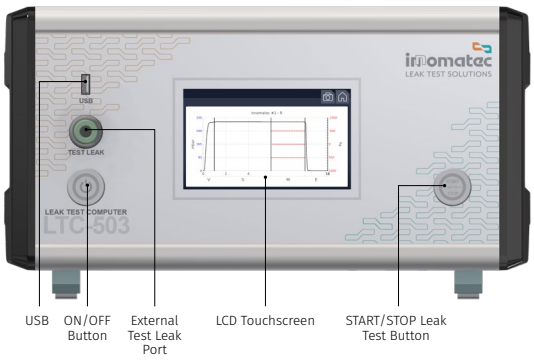
- Tool Control
- Endurance Test
- MSA Mode
- Ramp

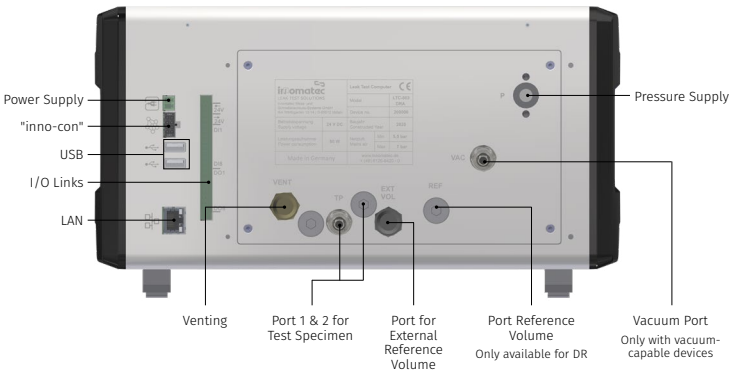
Auto test setup

- Automated optimization of test program based on maximum user allowable cycle time
- Simplifies instrument test programming and setup

Leak Standard

- Optional external test leak





Dosing Method **LTC-503 D**

The Dosing Method (D), also known as the “closed component” method, is used for completely closed components such as watches, cell phones or control units. The test specimen is placed in a measuring chamber (bell jar) and sealed. This chamber is pressurized via an evacuated or filled pre-volume. A leak in the test specimen changes the pressure ratio, which is detected by a pressure transducer (DA) or pressure difference sensor (DR).

Dosing Method test types

- Pressure/Vacuum Decay: Leak Standard | ΔP | ΔP/ΔT
- Blockage Detection
- Membrane Test
- Hold Pressure
- Stagnation Pressure

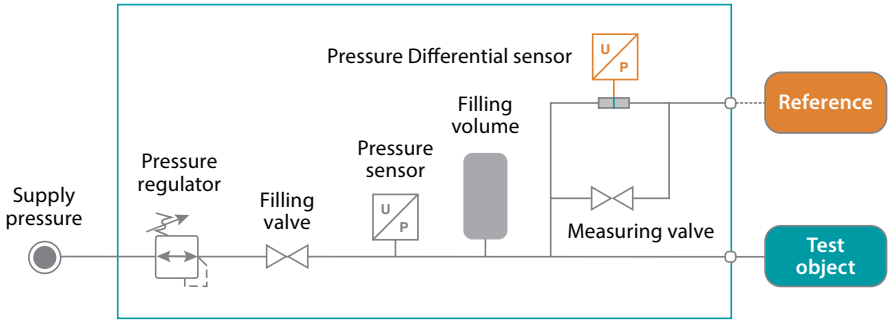
Pressure transducer options

Range	Resolution [Pa]	Repeatability [Pa]
500mbar	0.03	1.5
2bar	0.06	2.5
8bar	0.14	7.5
14	0.28	15.0

Pressure Differential transducer option

Range	Resolution [Pa]	Repeatability [Pa]
-300...300mbar	0.007	0.9

Dosing Method test circuit



Pressure regulator options

Regulation ranges	
-1...1bar	0...6bar
-1...6bar	0...8bar
-1...10bar	0...10bar
0...0,5bar	0...14bar
0...2,0bar	

Measuring resolution test pressure/leak rate

Up to four decimal places selectable X-X.XXXX for pre-filling, filling, stabilizing, testing and venting processes.

Max. resolution **0.0005 ml/min**

Additional functions

- Tool Control
- Endurance Test
- MSA Mode
- Ramp

Auto test setup

- Automated optimization of test program based on maximum user allowable cycle time
- Simplifies instrument test programming and setup

Leak Standard

- Optional external test leak

LTC-503 features

Test ports

- Single, configurable in back of instrument
- 6/4, 8/6, 10/8 ...
- Other connection sizes available (consult factory)

Test methods

- Pressure change (A)
- Pressure differential (R)
- Dosing for closed components with either pressure change (DA), pressure differential (DR) or optional automatic volume determination (C)
- Stagnation pressure / Membrane test / Blockage detection

Global usability and UI

- Graphical history with live pressure and leak rate data
- Full colour, capacitive touch screen
- Screenshot and documentation tools for easy management of test parameters
- RGB LED status display for clear visibility of test progress and results
- Available in EN, DE, CN, NL and more
- Program parameter overview
- Program linking

Interfaces

- BUS "inno-con"
- Digital I/O for remote control
- PROFINET, Modbus, Ethernet / IP and TCP Socket for industrial integration
- FTP and Samba for extended connectivity
- OPC UA for seamless communication with modern control systems
- Export formats: CSV (Excel), JSON, XML over USB, FTP or Samba
- Firmware-upgrade via USB / OTA
- Ethernet / WiFi

Data management and storage

- Memory for up to 100,000 results (expandable up to 1 million)
- Up to 200 different test programs
- Statistics
- Counters
- Tamper-proof logging and 21 CFR Part 11 compliance for regulated environments
- Secure Linux system with modern encryption and over-the-air updates

New in the LTC-503

- Pre-fill and fill ramp enhancements for precision in complex tests
- Enhanced batch testing capabilities
- Built-in program management for streamlined operations
- Advanced logging and tracing features for user actions and parameter changes
- Comprehensive test history management with export and analysis options
- Self-test, MSA mode
- Remote control / Global remote service

Accessories

- Test leaks
- Test status indicator light for improved visibility
- Vacuum generator for enhanced leak testing performance
- Test distribution system for multi-piece testing
- External ventilation for specialized testing environments
- External marker for clear identification of test results
- Well-tested standard solutions supported by innomatec

Technical specifications

Housing (WxHxD)

340x190x300mm

Weight

8.5 kg

Display

5" 800x480 Touchscreen

Electricity supply

24VDC

Test medium

Air / Non-aggressive gases

Operating humidity

Up to 90% (non-condensing)

Air quality

ISO 8573-1:2010 [2:2:2]

Compressed air or nitrogen only

Digital I/O

8 inputs and 8 outputs each, 24 V–1 A max.

Expandable to up to 24 inputs and outputs each

Start / Stop / Results / BCD

innomatec
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