inomatec
LEAK TEST SOLUTIONS

LTC-503

Highlights

- **Superior leak testing performance** with shorter test cycles
- **5" touchscreen** with a 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 control, multilingual support, and the flexibility to operate in your preferred units.

Safe and secure integration into your test station and production networks. Easy data export into various formats. Use the graphical live data view to troubleshoot issues or to optimize test parameters.

Entry-level leak testing that performs

The new LTC-503 offers outstanding leak testing performance and superior repeatability for industrial applications and challenging lab environments. Design updates include high-accuracy sensors and internal volume optimization to provide reliable, precise measurements to detect pressure drops as small as 0.1 Pa.

Low power usage and a new manifold design reduce thermal effects so that temperature-related effects are minimized.

The new system includes robust and durable valve technology that is suitable for high-cycle applications and tough environments.

Entry-level leak testing connected

The LTC-503 can be integrated into fully automated testing machines via all common plant floor interfaces and protocols. The unit can be fully operated remotely 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

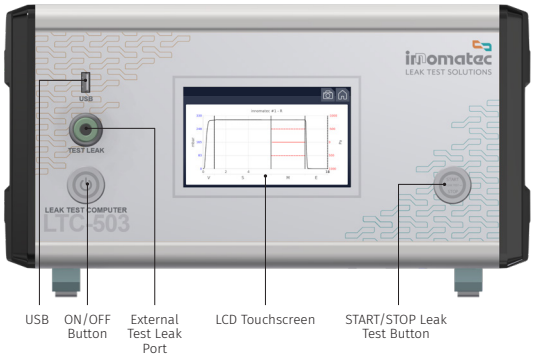
The robust hardware is built for reliability and long-term use.

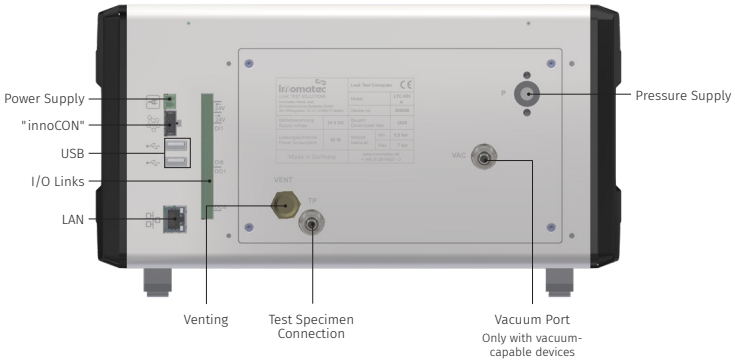
The LTC-503 works for a range of applications

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

- Leak rate (V/t)
- Pressure decay (ΔP)
- Pressure decay (ΔP/Δt)
- Membrane Test (optional)

Pressure ranges

Range (rel.)	Resolution	Standard Regulator Accuracy
-0.95 ... 0.95 bar	0.03 Pa	19 mbar
-0.95 ... 5.8 bar	0.10 Pa	67.5 mbar
-0.95 ... 9.8 bar	0.18 Pa	107 mbar
0.001 ... 0.19 bar	0.02 Pa	1.89 mbar
0.005 ... 0.49 bar	0.02 Pa	4.85 mbar
0.05 ... 1.9 bar	0.04 Pa	18.5 mbar
0.05 ... 5.8 bar	0.10 Pa	57.5 mbar
0.10 ... 7.8 bar	0.10 Pa	77 mbar
0.10 ... 9.8 bar	0.18 Pa	97 mbar
0.10 ... 13.8 bar	0.18 Pa	137 mbar

Better accuracy on request.

Measuring resolution test pressure/leak rate

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

Max. resolution	0.0005 ml/min

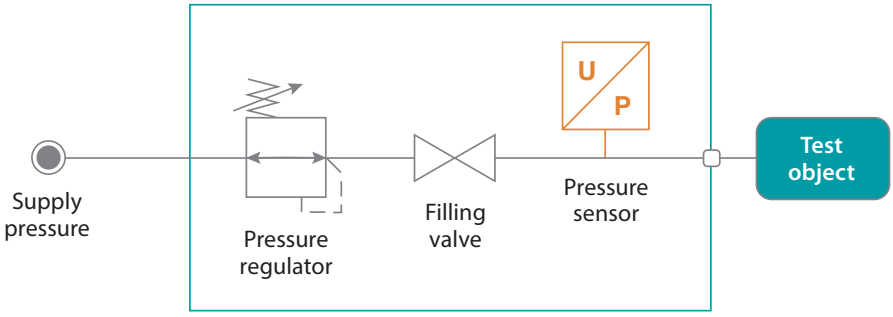
Additional functions

- Tool Control
- Endurance Test
- Ramp

Leak Standard

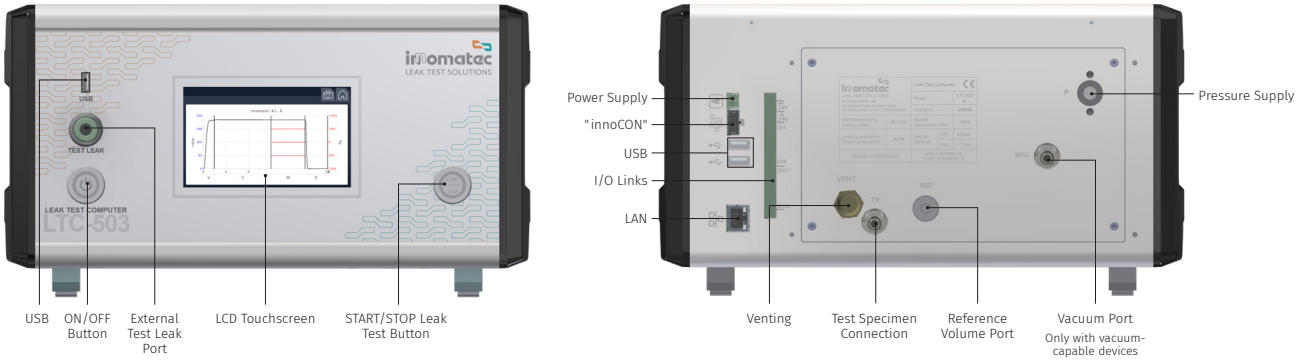
- Optional external test leak

Pressure Change test circuit



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

- Leak rate (V/t)
- Pressure decay (ΔP)
- Pressure decay (ΔP/Δt)
- Membrane Test (optional)

Pressure ranges

Range (rel.)	Resolution	Standard Regulator Accuracy
-0.95 ... 0.95 bar	0.03 Pa	19 mbar
-0.95 ... 5.8 bar	0.10 Pa	67.5 mbar
-0.95 ... 9.8 bar	0.18 Pa	107 mbar
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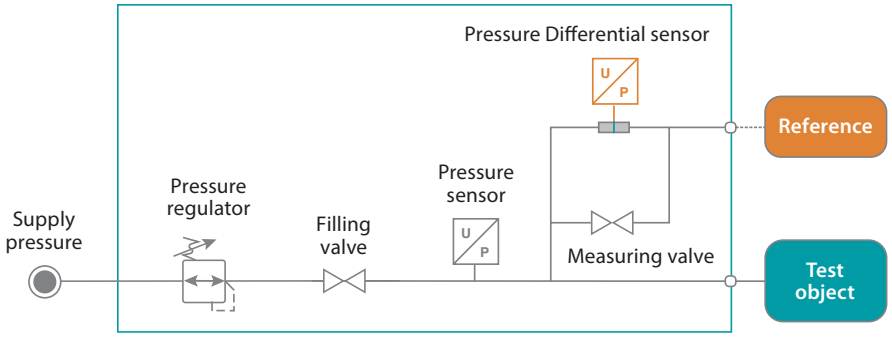
0.10 ... 7.8 bar	0.10 Pa	77 mbar
0.10 ... 9.8 bar	0.18 Pa	97 mbar
0.10 ... 13.8 bar	0.18 Pa	137 mbar

Better accuracy on request.

Pressure Differential transducer option

Range	Resolution
-300 ... 300 mbar	0.007 Pa

Pressure Differential test circuit



Measuring resolution test pressure/leak rate

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

Max. resolution	0.0005 ml/min

Additional functions

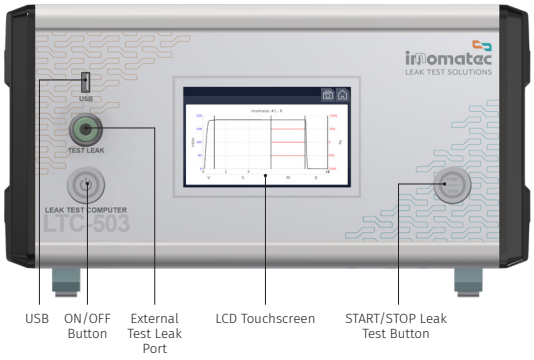
- Tool Control
- Endurance Test
- Ramp

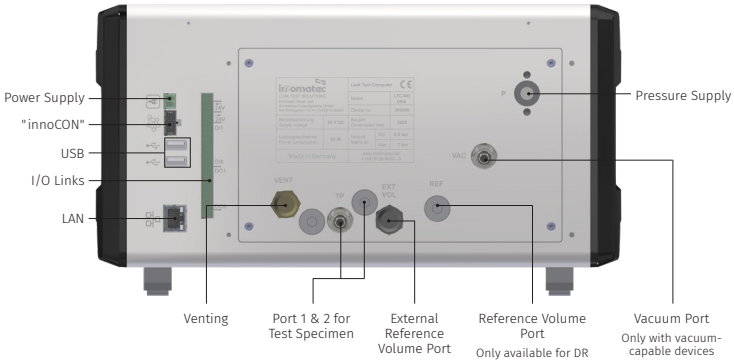
Leak Standard

- 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

- Leak rate (V/t)
- Pressure decay (ΔP)
- Pressure decay (ΔP/Δt)
- Membrane Test (optional)
- Dosing
- Volume determination

Pressure ranges

Range (rel.)	Resolution	Standard Regulator Accuracy
-0.95 ... 0.95 bar	0.03 Pa	19 mbar
-0.95 ... 5.8 bar	0.10 Pa	67.5 mbar
-0.95 ... 9.8 bar	0.18 Pa	107 mbar
0.001 ... 0.19 bar	0.02 Pa	1.89 mbar
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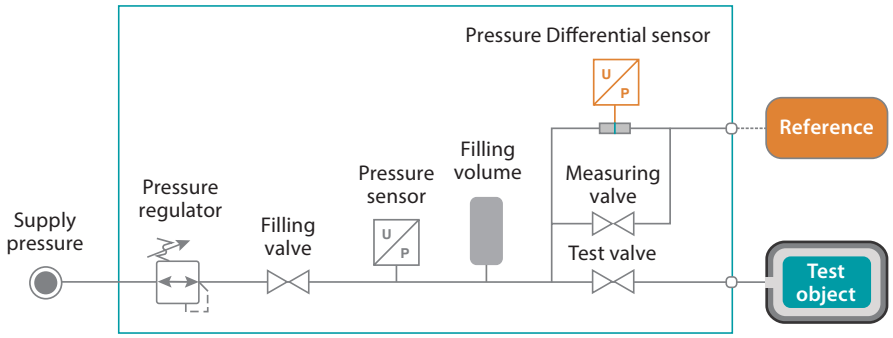
0.10 ... 13.8 bar	0.18 Pa	137 mbar

Better accuracy on request.

Pressure Differential transducer option

Measuring Range	Resolution
-300 ... 300 mbar	0.007 Pa

Dosing Method test circuit (DR)



Measuring resolution test pressure/leak rate

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

Max. resolution	0.0005 ml/min

Additional functions

- Tool Control
- Endurance Test
- Ramp

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 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
- Batch Test (Program linking)

Interfaces

- BUS "innoCON"
- Digital I/O for remote control
- PROFINET, 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, XML, JSON
- Firmware-upgrade via USB / OTA
- Ethernet / Wi-Fi (optional)

Data management and storage

- Ring 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 (optional)
- Remote control / Global remote service

Accessories

- Test leaks
- Test status indicator light for improved visibility
- Vacuum generator
- 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 (W×H×D)
340×190×300mm

Weight
Approx. 8.5 kg

Display
5", 800 × 480 pixels
Multi-Touchscreen

Power supply
24 V DC
~80 W

Test medium
Air / Non-aggressive gases

Operating humidity
Up to 90% (non-condensing)

Operating temperature
0–50 °C

Air Quality & Supply
ISO 8573-1:2010 [1:4:1]
Supply pressure min. 5 bar

Digital I/O
8 isolated inputs (16-32 V)
8 isolated outputs
(16-32 V, max. 350 mA per output)
Expandable to up to 24 inputs and 24 outputs
Start / Stop / Results / BCD

Manufacturer's laboratory accredited to DIN EN ISO/ IEC 17025

Scan the QR code to view all certifications.

innomatec
LEAK TEST SOLUTIONS

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