

Leakage testing device *LTS 670L*



Basic Functions

The leakage testing device *LTS 670L* can be used for testing leakage on hollow bodies of all kinds, applying either compressed air or vacuum. Assuming the form of a desktop unit it is operated either manually or optionally via external control signals. Designed on one specific test method, it incorporates the following features:

- Test-result indication of „good“ and „reject“ results catered for by clearly visible indicator lamps,
- Measurement-value indication during four time-based test steps,
- numerical indication of the test steps,
- Constant self-testing through monitoring of measurement recording signals,
- Serial Interface for outputting test results on an inline printer or PC,
- Test-run sequence controllable either manually or via external signals (option),
- Diagnostic functions,
- One test program with adjustable limits and step times.

Available Optional Features

Digital inputs and outputs to a master control
Strengthened power supply,
Programming pin for protection of the stored data against unauthorized parameter changing (not available for Flow Method),
Test and calibration tools.

Technical Data

Energy Supply:

electrical: U = 110 - 240 V, 47 - 60 Hz
pneumatic: clean compressed air,
min 1 bar above test pressure,
max. 7 bar or vacuum

Test Pressure and Range of Measurement:

corresponding to installed pneumatic module

Resolution of Measurement:

1 / 20 000 of sensor range of measurement

Adjustable Times:

| | |
|--------------------|---------------------|
| filling time | 0,05 ... 999,95 sec |
| stabilization time | 0,05 ... 999,95 sec |
| test time | 0,05 ... 999,95 sec |
| emptying time | 0,05 ... 999,95 sec |

Designs:

Desktop housing IP 40
- ½ 19“, 6U high
235mm x 266mm x 326mm
(W x H x D)
or
- 19“, 3U high
450mm x 140mm x 326mm
(W x H x D)

Energy supply ports, serial interface, I/O interface and power switch at the backside.

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Test Method

The leakage testing device *LTS 670L* operates (corresponding to the installed pneumatic module) according to the

- differential-pressure method or
- flow method.

Differential-pressure Method

Range of measurement ± 20 mbar

Available test-pressure ranges:

- 1 ... 0 bar
- 0 ... 1 bar
- 0,5 ... 4 bar
- 0,5 ... 6 bar
- 1 ... 10 bar

Other ranges of test-pressure available on request

The adjustment of the test-pressure is done manually at a high precision pressure regulator.

Flow Method

Available measuring ranges:

- 0,3 ... 3 l/min
- 1,5 ... 15 l/min
- 5,0 ... 50 l/min
- 12,5 ... 125 l/min

Other ranges of measurement ore range switching available on request

test-pressure ranges: -1 ... 0 bar
0 ... 1 bar

Other ranges of test-pressure available on request

Testing

Test Procedure

- Start the test by pressing the „Start“ button on the front panel or by cutting in an external control signal (option).
- Filling function
- Stabilization
- Testing
- Hold (Measurement display is frozen)
- Evaluation
 - „Reject part“ test results must be acknowledged by pressing the "Stop" button or by actuating the external control signal (option).
 - If the result is „good“, the sequence will continue, the next step being
- Emptying

It is possible to stop the test run at any stage by pressing the „Stop“ button. In this state the step display is blinking. The test run is resumed by pressing the „Start“ button or setting the appropriate input (option), whereas a second pressing of the „Stop“ button or setting the appropriate input (option), will abort the test run.

Test Results

- Green LED "IO" lights up:
Measurement value at the end of the testing time is below the limit.
- Red LED "NIO" lights up:
Measurement value at the end of the testing time is above the limit.
- Both result LEDs light up:
The test has been aborted by pressing the „Stop“ button twice or by setting the appropriate output (option). The test specimen can not be rated.

The displayed measurement value and the test result (reject or good) are stored until the next test is started or the „Stop“ button is pressed.

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Displays during the test-run

During the different steps the following informations are shown at the display in the front panel.

During the step „Filling“:

The step counter display is set to 1.

At the measurement display the filling pressure is shown.

During the step „Stabilization“:

The step counter display is set to 2.

At the measurement display the stabilization pressure is shown.

During the step „Testing“:

The step counter display is set to 3.

At the measurement display the pressure decay (relative or differential) or the flow is shown.

During the step „Emptying“:

The step counter display is set to 4.

At the measurement display the final value of the pressure decay (relative or differential) or the flow is shown.

Interfaces

I/O Interface

As an option the following I/O interface to a master control is available:

| | |
|----------------------|----------|
| Start | (Input) |
| Stop/Acknowledge | (Input) |
| Test-result „Good“ | (Output) |
| Test-result „Reject“ | (Output) |

Serial Interface

The serial interface is set to the following data parameters

9600 bps
1 start-bit
8 data-bit
2 stop-bit
no parity

After the end of each test-cycle a 12 place sign chain is transferred, which includes the test-result as well as the measurement value.