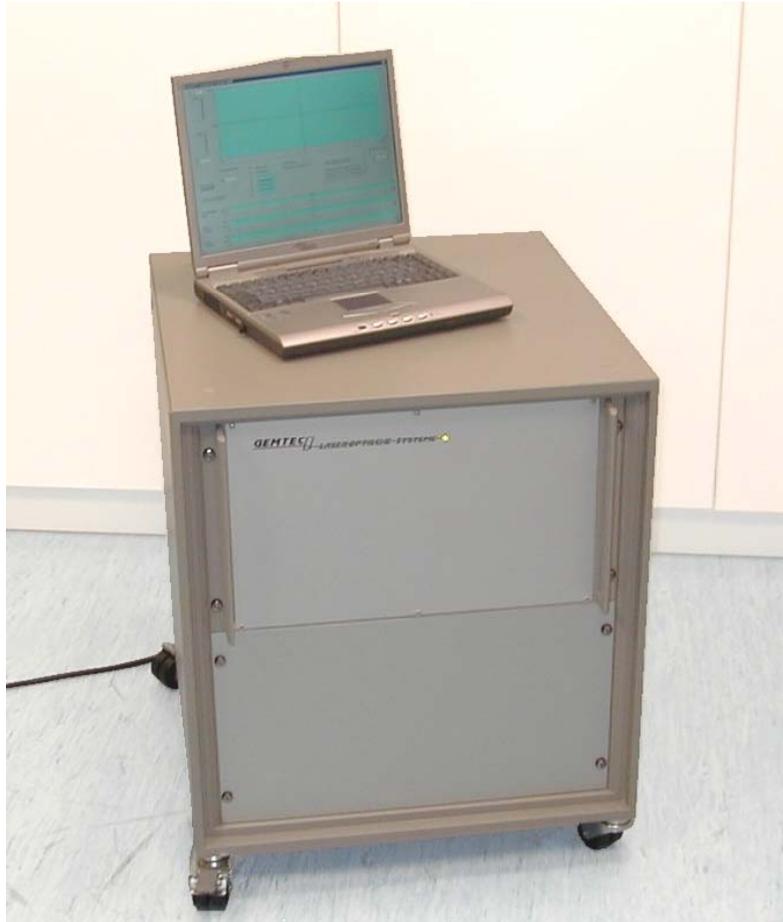


Mobile Leak Testing System



LTS-M-AI5

- extremely sensitive (10^{-9} mbar l/s)
 - fully automatic mode (with a PC/Laptop)
 - integral test / sniffing without the influence of permeation
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Mobile Leak Testing System LTS-M-AI5



Range of Application

LTS-M-AI5 was developed for mobile testing. It permits - on the spot and under atmospheric pressure - a highly sensitive leak test of very complex or very large testing objects within moments. Therefore it is no longer necessary to supply complicated and expensive vacuum chambers for the leak test. The use of test gas SF₆ will eliminate a permeation of the test gas (for example through plastics or washers) and thus not influence the leak rate. The permeation of SF₆ through plastics and other commonly used sealing materials within typical test times is negligible in contrast to the very high permeation in the case of hydrogen or helium. By using the measuring probe SSL 400 the system can very accurately determine the integral leak-rate (down to 10⁻⁹ mbar l/s). The sniff probe SM-12K allows the localization of very small leaks.

Principle of Operation

The laser-optical gas-detection system integrated in LTS-M-AI5 uses a laser beam. The test gas used in this optical leak test system is in most cases the inert gas sulfur-hexa-fluorid (SF₆). The laser is a CO₂-wave-guided laser. As in all highly sensitive gas-detection systems gas is taken from the surroundings of the pressurized test object and transported into the detection cell. The detection cell has windows through which the laser beam can enter. If the cell contains test gas, the concentration is determined, using the photo-acoustic effect, which in turn allows the calculation of the leak rate. The advantage of photo-acoustic gas-detection systems lies in the fact that the test-gas concentration can precisely and quickly be measured at normal atmospheric pressure.

Tools

The mobile leak-test system LTS-M-AI5 consists of a small rack with an integrated optical gas-detection system LTS 310 A (including a measuring probe SSL 400), a membrane pump MP-12, and an interface unit ST-M5 with 5 analog inputs (0-10 V), two digital outputs, a USB interface to a PC or laptop (running Microsoft WINDOWS ME or 98SE). The laptop necessary for the operation can be delivered as an accessory.

Accessories

Various leak calibrators, measuring probes (SSL 400N), sniff probes and PCs or laptops can be offered. Also various customer-specific modules for handling the gas and other periphery, such as mixing or test-gas recovery devices can be delivered.

Technical Data

Test Procedure:

Integral Test	Measuring probe SSL 400
Sniff test	Sniff probe SM-12K
Test gases:	Sulfur-hexa-fluoride SF ₆ , Ethene, R134a, Dimethylether and others.

Lowest detectable test gas concentration	1 ppb*)
Laser class	1 (no safety measures necessary)
Self diagnosis	continuous and automatic
Weight	about 60 kg
Size	600 x 553 x 660 mm
Electricity	230 V, 50 Hz, 1200 W
Interfaces	RS232, USB, 5 analogous inlets, 2 switch outlets
Analog input voltage range	0 – 10 V
Digital output contract type	SPDT switch; 30 VDC; 0.5 A
Scanning rate	up to 10 Hz

*) in the case of SF₆

Environmental conditions

Operational temperature	between 10°C and 40°C
Storing temperature	between 0°C and 50°C

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Subject to alterations!