Leakage Measurement System
CoM4.LEAK

Version: 01.07.2025

The CoM4.LEAK leakage measurement system enables highly precise and dynamic measurement of leaks and the smallest flows.

- Very fast and precise leakage detection
- Excellent repeatability
- Controller as a measurement and control system

Technical Description

The test pressure is electronically regulated on the test specimen and in a reference volume. After closing the separation valves, the pressure on the test specimen drops compared to the sealed reference volume, caused by a leakage. This pressure difference is measured with highly sensitive differential pressure sensors and can be converted into a quantitatively determined leakage after calibration with test leaks. The measurement system independently carries out the testing process and can digitally transmit the measurement results. The CoM4.SYS controller manages the entire testing process, as well as the collection and evaluation of the measurement data.

Scope of Functions

- Electronic test pressure regulation
- Supervisory control (PLC operation)
- Averaging and statistical data for all measured variables
- > 100 different tests configurable
- Leakage measurement with auto-calibration using built-in test leaks (without test definition)
- Fully automatic setup of tests: auto-calibration and process time optimization
- High process reliability through self-testing of tightness and leakage quantification
- MSA process with repeat measurements
- Variable shock filling

Additionally, all sensor signals supplied to the measuring system, such as differential pressure, absolute pressure, temperature, etc., can be linearized and displayed in various physical units.

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Specifications

Smallest measurable leakage	2 Pa/s (using a 50 mL volume)
Control accuracy of test pressure	≤ 0.1% f.s.
Measurement uncertainty pressure drop	1% o.r.+ 0.25 Pa/s
Measurement Ranges	Diff. Pressure: -25..25mbar Rel. Pressure: -1..1 / 2.5 / 6 bar
Operating Conditions	Inlet Pressure: 0 ... 7 bar abs Inlet Temperature.: 0 ... +45 °C Humidity: 0 .. 100 %, non-condensing
Environmental Conditions	Pressure: Atmospheric Temperature: -10 .. +50 °C Humidity: 0 .. 100 %, non-condensing
Media Compatibility	Clean, dry, non-condensing, non-corrosive gases and air. The measuring medium must meet the requirements of ISO 8573-1. In addition to a 5 µ filter, an oil/ water separator in the compressed air supply is absolutely necessary.
Overload Limits	Double the measuring range end value of the pressure sensors, at most the specified pressure rating of the piping.
Display	Graphical User Interface on 4“ Display
Enclosure Dimensions (WxHxD)	3 HE: 450 x 150 x 316 mm 6 HE: 225 x 280 x 316 mm or other on request
Protection Class	IP 20 or IP 54, higher on request
Process Connections	G1/8 thread or on request
Electrical Connections	IEC connector
Interfaces	Ethernet, USB 2.0 (Typ A), RS-232, 9-Pol. D-SUB, 8 opt.el DI/DO

Specifications

Power Supply	90 .. 260 VAC (Power supply unit), 50/60 Hz, max. 80 W
Approvals	The measuring device complies with the European standard EN 61010-1 (Safety requirements for electrical equipment for measurement, control, and laboratory use) and the provisions of the 'Machinery Directive - 89/392.'

Special Features

Mounting Options Measuring/Control Device

The CoM4.SYS controller is ready for connection in a stable rack or desktop housing with 3U or 6U. Sensors and flow measurement sections are also available as separate components.

Measurement Sections

Up to 2 measurement sections can be connected to the measuring/control device and operated or evaluated continuously or program-controlled. The calibration data for determining sensor values and flow rates are stored in the measuring/control device.

Measuring Medium

Usable media: The substance database supports the use of air and more than 12 gases.

Operation

Touch display with apps for program and parameter selection, optional browser GUI with COMM window and y/t graph.

Available Functions include:

- Temporal representation of measurements
- Measurement results
- System diagnosis/system information
- Settings with parameter settings
- Data logging

Order Information

The system can be customized in special cases to meet specific requirements. Please provide us with the following information for design and quotation purposes:

- Desired leakage amount
- Type(s) of gas
- Test volume
- Operating conditions (pressure and temperature)
- Control requirements
- Measurement and control accuracy
- Environmental conditions
- Enclosure requirements
- Power supply
- Data acquisition requirements
- Other specific requirements