

## Leak Tests

- Overpressure or underpressure test with threshold evaluation or leakage rate measurement
- Modular adapters with integrated measurement technology open up a comprehensive test spectrum
- Integration of external measuring devices for high-end testing tasks
- Customized parameterization via NT Control operating software
- Extensive logging of the measurement results
- High flexibility in combination with additional test requirements in the adapter

ADAPTER

# Leak Tests

## Field of application | Concept

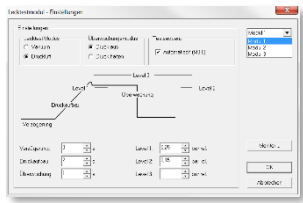
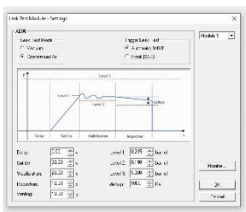

The leak test is a non-destructive test method used to test cable harnesses and connectors for leaks against gaseous media. The most common test medium is air.

The basic criteria for the selection of test methods and procedures for leak testing are described in the standard DIN EN 1779:1999.

Driven by e-mobility, the quality requirements for the tightness of the high-voltage cable harnesses and their components have now increased significantly. Various OEMs are already demanding proof of the tightness of the cable harness as a complete system from the cable assemblers. Even the smallest leaks must be detected.

Where it used to be sufficient to check the presence of a seal in the connector, today it is often necessary to determine the leakage rate. For the determination of a leakage rate, a threshold evaluation of the air pressure is not sufficient. In addition to a high-resolution measurement technology, the parameterization of filling and waiting times as well as the calculation of the leakage rate including a reference volume is required.

To cover the market requirements completely, adaptronic has extended the modular Adapter Control kit by the option Adapter Extension 06 (AE06). The option includes a high-resolution measurement technology for the determination of leakage rates up to 2.5 ml/min as well as the required reference volume for the integration in the adapter. The parameterization is done with NT Control. The parameters themselves are stored in the adapter. This trend-setting development offers not only cost efficiency but also significant technical advantages. The measuring technology is optimally located close to the Unit Under Test. Losses and sources of error due to pneumatic interfaces and external tubing are reduced to an absolute minimum.

Technical specifications			
Hardware	AC03 Adapter Control 03	AE06 Adapter Extension 06	Differential pressure measuring device ATEQ F620
	Basic version	Extended accuracy	Highest accuracy
Test medium	Air	Air	Air
Resolution / accuracy	Pressure difference 1000 Pa	Pressure difference 1 Pa	Pressure difference 0.1 Pa
Evaluation type	Threshold evaluation	Optional threshold evaluation or leakage rate	Leakage rate
Parameterizing via NT Control	✓	✓	-
Calibration	-	✓	✓
Unit	bar	bar or l/min	l/min
Measurement result	OK / NOK	Optional OK / NOK or leakage rate	Leakage rate
Measurement method	Relative pressure measurement 	Absolute pressure measurement / differential pressure measurement 	Absolut pressure measurement / differential pressure measurement 
Integration	In adapter	In adapter	Connected with test device e.g. in the test table
What is reported?	Test result OK or NOK	Measured value (leakage rate)	Measured value (leakage rate)
Classical application example and detection	Is the connector seal in place?  Yes or No	How tight is the cable set from plug to plug across the cable?  Leakage rate lower than e.g. 2.5 ml/min	How tight is the cable set from plug to plug across the cable?  Leakage rate lower than e.g. 0.7 ml/min