

DG-1000 Application options



Evolution of the Minneapolis BlowerDoor pressure gauge


Special features of the DG-1000

The DG-1000 differential pressure gauge can be used as a stand-alone pressure gauge independent of the BlowerDoor measuring system. With the large measuring range from 2,500 to + 2,500 Pascal, a wide variety of applications are available in the field of differential pressure measurement.



The high-resolution touch screen makes intuitive operation of the DG-1000 easy.

The high measurement accuracy and the integrated WiFi module enable uncomplicated recording of measurement results via BlowerDoor APP ([TEC GAUGE](#) & [TEC AUTO TEST](#)) or with the BlowerDoor software TECLOG.

The hold function  of the DG-1000 also offers the opportunity to directly record a measured value or for photo documentation.

With an operating time of more than 15 hours, the rechargeable lithium batteries offer a wide range of options for use independent of mains power.

Task: an even pressure distribution

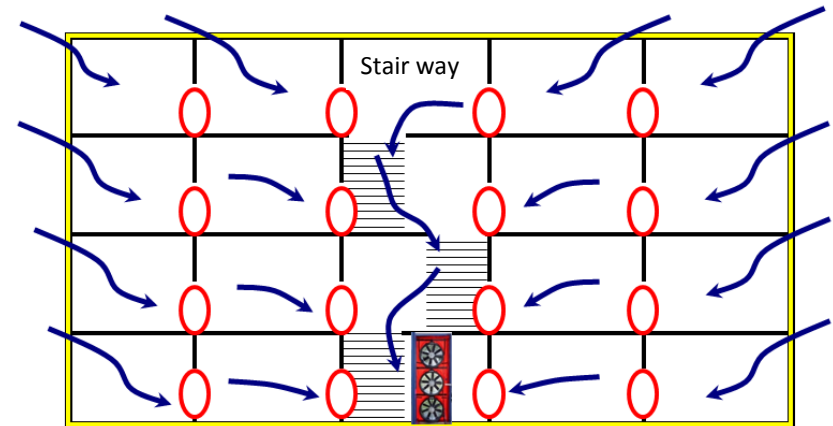
A basic requirement for conducting an airtightness tests is, that the building can be treated as a “single-zone building”. All rooms and building parts of the test object must have air connection, so that an even pressure distribution is ensured during the test.

The pressure differences within a building are determined by comparing the pressure near the measuring device with the pressure in “critical” zones (e.g. the most remote rooms or building parts).

Requirements from the standards for differential pressure measurement according to DIN EN ISO 9972:

5.2.4 Openings inside the measured extent

The entire building or part of the building to be tested shall be configured to respond to pressurization as a single zone.



Schematic representation of flow paths for an even pressure distribution

and according to EN 13829 :

For the purpose of method B (building envelope) all adjustable openings shall be closed and remaining intentional openings shall be sealed.

The entire building or part of the building to be tested shall be configured to respond to pressurization as a single zone:

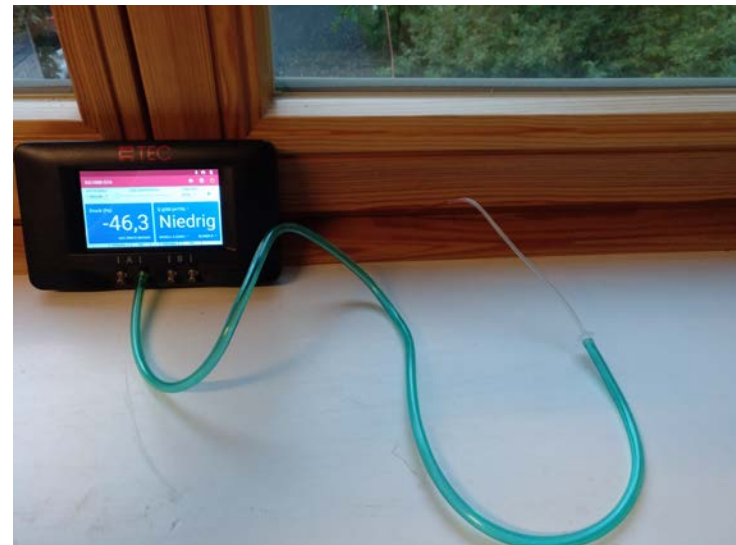
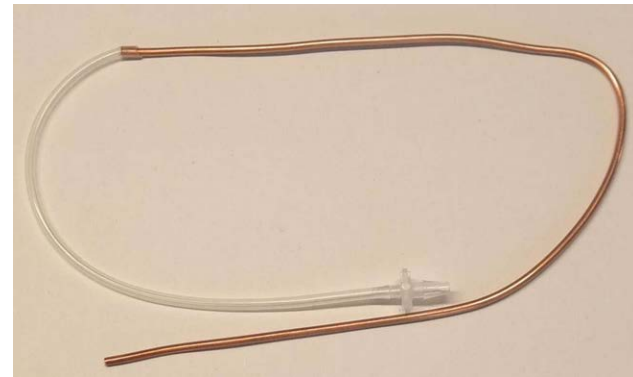
All interconnecting doors (except for cupboards and closets; which should be closed) in part of the building to be tested, shall be opened so that a uniform pressure is maintained within a range of less than 10 % of the measured inside/outside pressure difference.

NOTE When testing large or complex buildings this condition becomes increasingly important and can be verified by selected differential pressure measurements between different rooms at the highest pressure contemplated.

Task: an even pressure distribution

Each BlowerDoor measuring system is supplied with a capillary tube which allows to measure the external pressure of the building through a closed window or door.

This capillary tube can be attached to a closed window in a remote room of the building to control an even pressure distribution.



Task: an even pressure distribution

When using multiple fans and multiple pressure gauges, one of the DG-1000 can pilot all fans to create a differential pressure of 50 Pa in the building by using the cruise control function. Since the volume flow does not have to be measured at this moment, another DG-1000 can now be connected to the prepared capillary tube in a distant room. This can be used to check whether the desired differential pressure exists even in the most distant room and whether the requirement of a maximum pressure loss of 10% is met.



However, if this standard requirement is not met, an alternative measurement setup should be used; e.g. in this way:



Weitere Anwendungsgebiete dieser Messmethode

Beside the monitoring of pressure distribution in the building, the differential pressure measurement can also be used in other areas. For example, to check the pressure conditions in special rooms such as laboratories, clean rooms, operating rooms, etc. where pressurization or depressurization is operated.

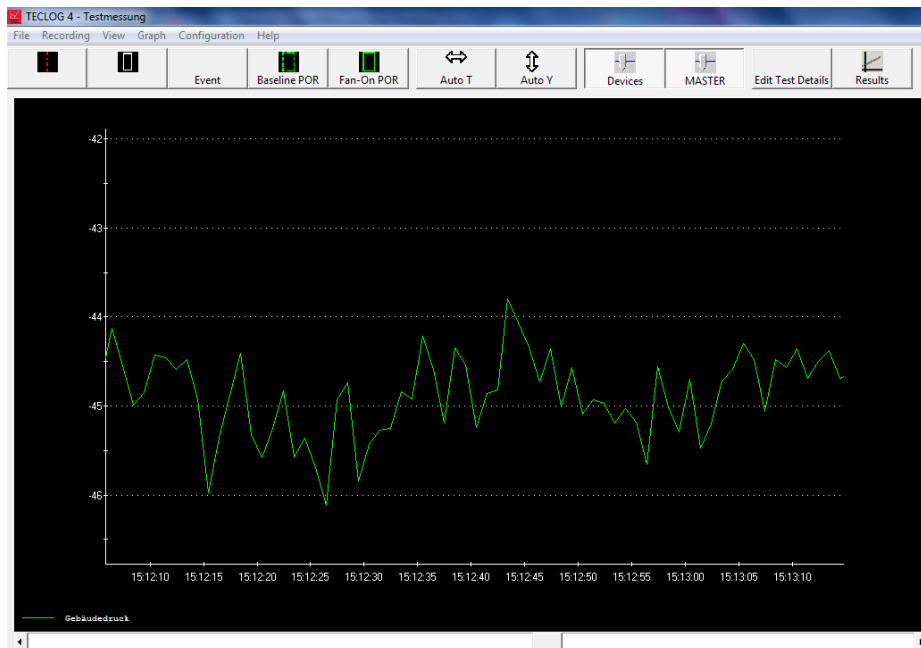
By operating these special rooms at negative or positive pressure, pollutants can be kept constant inside or outside the room.

Operation at depressurization is also used to keep odors inside buildings. Examples are fish processing or livestock farms.

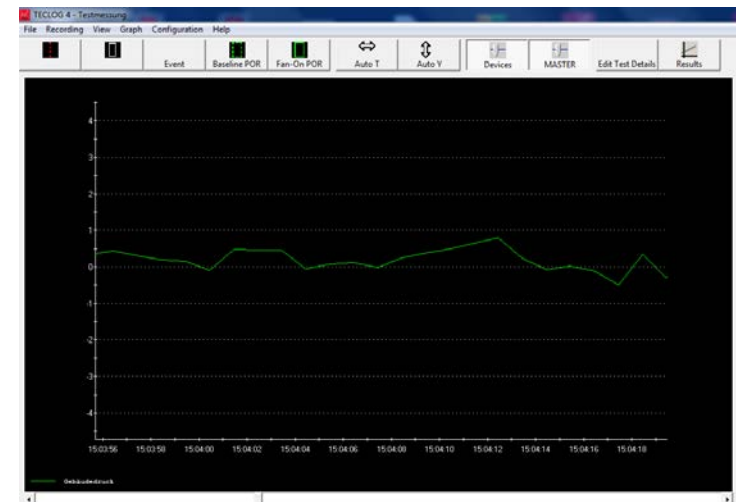
Another field of application is long-term pressure recording for building analyses or for testing ventilation systems.



Recording of pressure processes with the TECLOG software



*Recorded pressure process on a window.
The pressure curve can now be averaged over
several minutes and evaluated further.*



*Example of a recording of the natural
building pressure for later evaluation*