

Air Permeability Measurement System

Pulse





Pulse is a portable compressed air based system which is used to measure the air leakage of a building or enclosure at an ambient pressure level (4Pa).

By measuring at a lower pressure, the system provides an air change rate measurement that is representative of normal inhabited conditions, helping to improve understanding of energy performance and true building ventilation needs.

The full Pulse system comprises of an air receiver, an air compressor and a touch screen control module.

Why measure at low pressure?

A 4Pa reference pressure is widely recognised as representative of the typical pressure differential across a building envelope throughout the year. It is the basis for infiltration assessment in the ASHRAE Handbook of Fundamentals, ASTM E741, and in building codes across France, Switzerland and the United States.

Pulse operates uniquely and innovatively within this low-pressure range, directly measuring air-permeability characteristics under normal ambient conditions. This provides valuable insight into background infiltration levels and enhances the accuracy of energy-performance assessments. While high-pressure fan testing remains useful for fabric stress testing and identifying leakage paths, Pulse offers complementary, real-world data that reflects how buildings actually behave in everyday conditions.

Key Features

Quick & Easy

Set up, test, and pack down in just 10 minutes with single-button operation. Simply place the Pulse unit at the center of the building.

Practical

Pulse tests the entire building envelope, including all doors, and can also be used for individual rooms.

Low Pressure

Testing mimics natural conditions without overstressing the building or creating artificial leaks.

Minimal Disruption

No need to vacate the building – the test doesn't alter temperature or breach the envelope.

Accurate & Repeatable

Delivers consistent low-pressure results while minimising wind-related pressure variations.

Modular & Scalable

Link multiple Pulse units for larger buildings, ensuring even and precise pressure distribution.



Applications



New Build

Simple, quick and accurate testing can provide effective quality assurance throughout the construction, commissioning and compliance testing process. Adopt the BTS Leak Checker as a tool to diagnose air leakage issues during the build phase, increasing pass rates and cost efficiencies when it comes to a final Pulse compliance testing.



Existing Homes & Retrofit

Low impact, low pressure testing of occupied homes can determine the root cause of mould, condensation and indoor air quality issues. Testing can also be used to determine retrofit strategies and to validate the quality and performance of delivered works.



Non-Residential

Link multiple Pulse air receivers to cost effectively carry out air permeability testing on large non-residential buildings or in multi-residential blocks; new build or existing occupied.



Specialist

Pulse can be used in a range of other specialist conditioned environments such as cleanrooms, laboratories, refrigeration chambers, data centres and server rooms where quick, safe, non-disruptive testing of enclosure integrity is required.



Scan here to find out more about our Pulse system.



How Pulse Works



2 Step Pulse Example

- 1. Pre-test:** Background pressure is measured. This is used as a baseline and for wind adjustment
- 2. Valve opens:** The air receiver begins releasing air. The rate of release is measured.
- 3. Pressure peak:** The pressure increases quickly and typically peaks at 10Pa.
- 4. Quasi-steady flow:** Airflow through the fabric exceeds the tank's output, causing a steady pressure drop. This period is used to calculate air permeability by comparing released air volume to room pressure.
- 5. Valve closes:** Pressure returns to normal through leakage.
- 6. Post-test:** Background pressure is measured again for a baseline and wind adjustment.

PULSE 3.0

Maximum Operating Pressure	10 Bar (145 psi)
Operating Voltage	220-240V 50-60Hz (110v available on request)
Max Power Consumption	569W, 2.63A (compressor)
Min Operating Temperature	4°C (frost free)
Max Operating Temperature	40°C
Outlet Filtration	5µm (particulate)
Communications	2.4 GHz and 5.0 GHz IEEE 802.11ac wireless, Bluetooth 5.0, BLE
Storage	Over 100,000 tests
External Dimensions	Air receiver: Ø 381 x 824 (H) mm Controller: 363 (L) x 282 (W) x 120 (H) mm Compressor: 390 (L) x 385 (W) x 180 (H) mm
Weight	Air receiver: 13.0kg Controller: 3.4kg Compressor: 16.2kg
Ancillaries Supplied	1 x 4m Data Cable; 1 x 3m Controller power plug, 1 x 2m IEC Compressor power cable, 1 x Compressor air line
System Outputs	Air Leakage rate (m ³ /h) Air changes per hour (h ⁻¹) Effective Leakage area (m ²) Air Permeability (m ³ /m ² h) Achieved Pressure Range (Pa)

Optional Extras



Additional Air Receiver
(for increased system capacity)



Hose Splitter with additional Compressor Air Line for dual AR charging



Technical Support & Extended Warranty



Leak Checker for air leakage diagnostics



Scan here to find out more about Leak Checker.



Contact

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PART L1
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