

Proventia Test Unit

Modular E-Mobility Solutions



Proventia is responding to the increasing need for e-mobility solutions with the introduction of a one-of-a-kind automotive test laboratory, built in a compact, transportable shape and structure. Modular e-mobility applications are optimised according to power range, thermal dynamics and other customer requirements. The test cell design, key components and measurement devices can be selected from the widest range of well-known suppliers creating further synergies for operational use.

Fast deployed test cell saves time and money

Proventia Test Units are CAD designed, manufactured and tested at the factory before shipment. This means shorter lead times, high precision quality and most of all, better productivity. After the factory acceptance test, the PTU modules are separated from each other for ordinary road & sea transport. At the destination, the PTU modules are simply put back into place, connected

to the local infrastructure and commissioned before the customer starts operating the new test laboratory.

The modular Proventia Test Solutions concept saves valuable time and money. Compared to conventional alternatives, building a PTU does not disrupt the customer's daily operations in their current test laboratories or require constant support. In addition, the PTU can easily be relocated at any time, should there be a change in situation.

Modular H-Powertrain Test Laboratory



The test lab can be operated from an integrated control room, main building operator corridor and remotely monitored using PC, tablet or smartphone.

The functional and flexible design of the Proventia Test Unit

The amount, capacity and size of PTU modules are determined according to the customer's space requirements and all the test equipment in question. The Proventia Test Unit transforms into various test configurations (ICE, e-motor, hybrid, e-powertrain, and battery testing) and integrates well with different sorts of facility arrangement. Each module, key component and test bed can be

easily replaced. A complete PTU can be switched to another like changing cassettes in slots.

All the infrastructural components dedicated to support test procedures, laboratory conditions, distribution of different supplies and safety aspects, are systematically managed by Proventia BAS and the test automation system in question. Controlled from an integrated operator room or the main building.

Hybrid and full electric powertrain testing

The pressure to develop better, even more sophisticated hybrid and fully electric vehicles in and around the powertrain package requires a significant amount of testing in the laboratories. Modular Proventia Test Units are designed to comply with hybrid powertrain test requirements and the transformation into fully electric P/T testing is

simple, allowing several test bench configurations. When two similar laboratories are integrated, the cell can accommodate a full size electric SUV, providing versatile 2WD and 4WD setups.

Modular Battery Pack Test Laboratory



Climate chambers accommodate full-size battery packs and packs in vehicles can be connected to the system.

Hybrid & electric vehicle battery testing

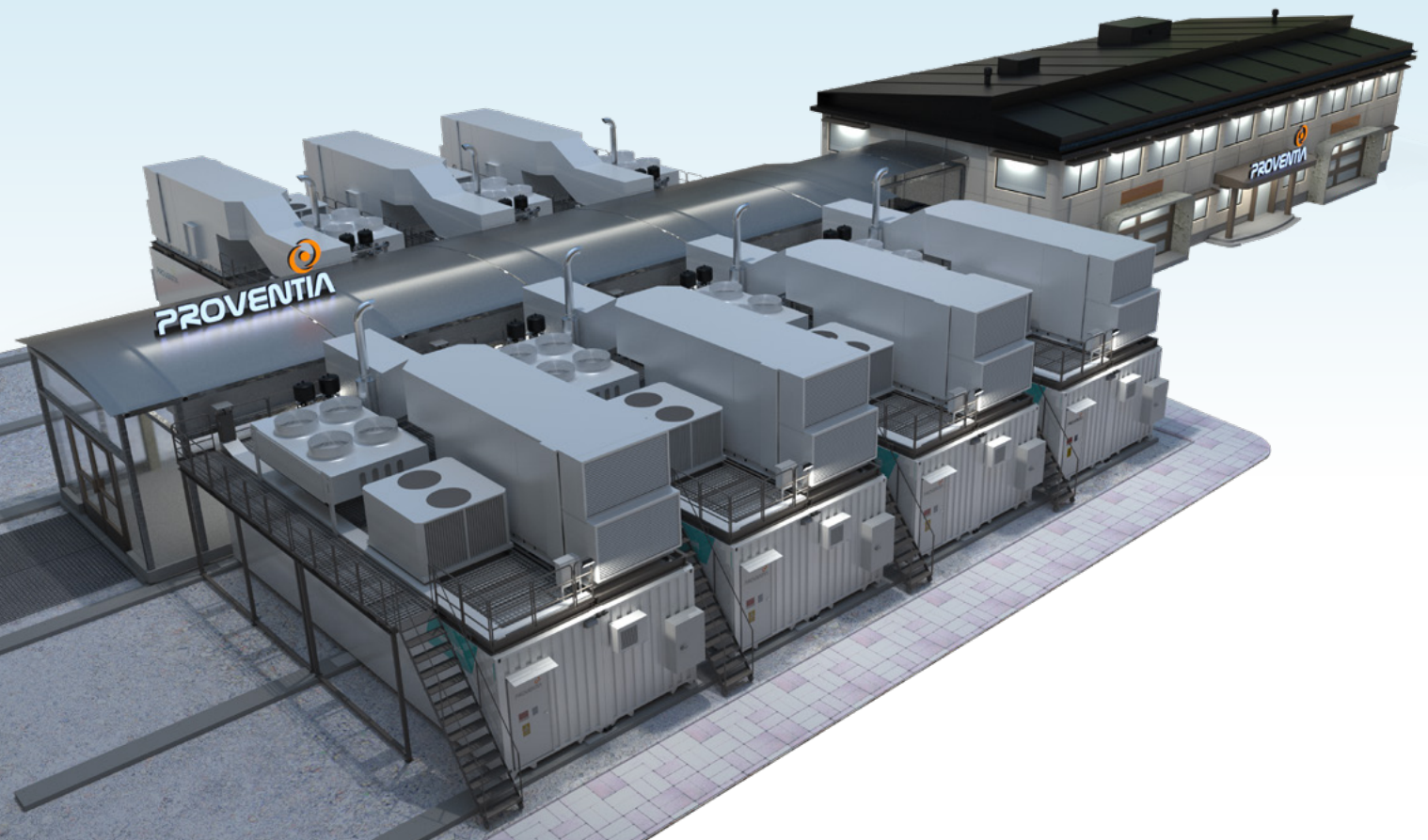
Battery testing is one of the critical areas where development is running fast. Proventia Test Units offer numerous modular configuration and alternatives for automotive battery testing. Climate and temperature chambers vary between single cell test cabins and large chambers for full-size battery packs. As many as two packs can be in the chamber simultaneously; both can be running battery cycles, or the second pack could be simply withstanding the same climatic cycles. The PTU provides complete safety features and conditioning solutions for power electronics and test specimens. Thanks to modularity, special arrangements are easily done, for example, the R&D test cells can be placed apart from buildings providing additional safety in the case of more hazardous battery tests.

Key features of the Proventia Test Unit

- Factory tested and quick to set up
- Integrates with various test applications, automation systems and facility arrangements
- Optimized hardware configuration
- Adapts to customer-specific test practices
- Easier to upgrade when changes become necessary
- Transportable and relocatable during the whole lifecycle
- Safe. Complies with EU Machine Directive, Health & Safety regulations
- Scales from single unit to test centres

Proventia Test Units & Test Centres

Deployable in stages – flexible for changes.



From test units to test centres

Numerous Proventia Test Units can be connected through service corridors and buildings into larger test centres. Supportive facility units complete the common supplies and services to several test laboratories (measurement devices, compressed air, chilled water, calibration gases, fuels, energy storage, etc.). The flexible Proventia Test Centre concept offers cost-efficiency and optimization to various investment needs and in the long run as further expansion or cell update becomes again necessary. There is no need for special investments in the main building which may open up new locational opportunities and further synergies to be enjoyed now and in the future.



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