



Industry-Leading Test Solutions

Market Application Case Study:

PORTABLE AIR BRAKE LEAK TEST SYSTEM

Market driver:

A truck manufacturer needs to leak test installed air braking systems to ensure they do not leak and meet federal leak rate standards for commercial vehicles. The system requires semi-automatic operation; requiring the operator to make only necessary connections to run the test. The system can be configured to use on-site shop air or execute the test on a pre-charged air brake system using the vehicle's air. For this application a customer supplied Vehicle Automated Test (VAT) system will manage and execute the air brake test. Pass/fail test decisions are system controlled.

CTS test solution:

The customer requested a portable and self-contained air brake test system that will be moved to the test location. The test system has integrated air supply hoses for quick connection and with on-board storage. A heavy-duty steel enclosure packages the test instrument and all system components and hinged front and rear doors provide easy access.

The system utilizes the CTS Sentinel I28 test instrument; configured to operate with a pressure range of 1 – 200 psig, perform a pressure decay test with a resolution of 0.00005 psig/s, optional ½ inch high-flow pneumatic valves for quick fill and exhaust, 32 bit processor and 24 bit A/D converter for fast and accuracy test results, and 4 million cycle valves for low maintenance. The system is equipped with station lights to identify test status at a glance. Optionally, this air brake test system includes on-board battery backup to allow the test system to operate without connection to 110 VAC power.



**View of a Portable Sentinel I28
Air Brake Leak Test System**

To start the air brake test, the operator connects the two air lines and the VAT communication interface to the truck being tested. The air volume for truck air brake systems can range from 4000 to 8000 cubic inches, to ensure correct test specifications the VAT system requires the truck serialized number to validate, and if necessary update, test perimeters used for the test. The air brake leak test is initiated by the VAT system messaging to the I28 instrument to run the pressure decay leak test cycle without operator intervention. If the air brake system holds set point pressure specification the system passes the air brake leak test. At the conclusion of the leak test the I28 uploads specifications and test results to the VAT system for a dated and serialized event history of the test.