

Turnkey Test Solution

DEFA car engine heater EOL test



Application:

DEFA is a market leading company within car engine heaters and has many years of experience with innovative development and production of quality products. For a new generation of car engine heaters, DEFA decided to partner up with DSE for the development and manufacturing of a turnkey test solution, to ensure a high quality of their product.

Based on DEFA test specifications, DSE made idea-presentations for the mechanical design of the testsystem. Through a close creative dialogue the design ideas was visualized in 3D, to find the optimal solution for testing the DUT (heated up to 200° C). The main focus was product quality, operator safety & production cost.

DSE delivered the turnkey test system complete incl. CE certificate.

Hardware / mechanical design:

The DUT / heater element is cooled down by a customized water cooled fixture. The fixture-control includes IR temperature reading of the DUT, supply voltage read back and controlling lock/unlock of operator protection.

To protect the operator from High Voltage and heated DUT during the test, following hardware safety precautions was implemented:

- A safety-lid protects the operator from any contact with the DUT / Fixture.
- A safety-switch with lock-function is connected via a safety-relay to ensure, that the lid is locked during test."
- The safety-relay is connected to an interlock switch on the HiPOT safety-tester and the temperature of the DUT is monitored to ensure safe operation.
- Automatic fixture with pneumatic operation of the lid and automatic slide-in connection to the DUT.

Software:

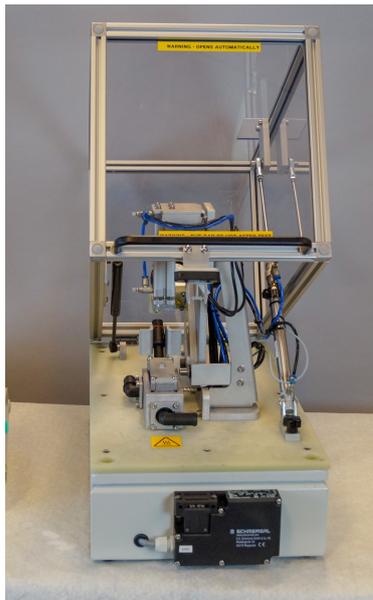
The testprogramming is based on National Instruments LabVIEW and cDAQ controller. LabVIEW is a well-defined and documented "market standard" for testprogramming, and will make service & maintenance, upgrades and future configuration of product parameters significant easier.

Based on DEFA requirements DSE implemented the testsequences, Graphic User Interface, Fixture control, testdata-log and a "plug-and-play" driver for barcode-reader & labelprinter.

The test system can be serviced/supported via remote connection.

Key features:

- Generic modular test platform based on standard elements.
- Can be used for future multiple test lines or expanding/changes of the test-specifications.
- Safe, easy and fast test operation.
- Easy and fast maintenance of the test system.



Agnar Kopperud, R&D Director at DEFA says:

" DSE offers a turnkey test solution to DEFA as a one-point-of-contact for the testsystem including fixture, measurement instruments, controller, testsoftware, rack, wiring and documentation. This allows DEFA to use our resources and focus on "what we do best" - innovation, development and manufacturing of new products to the car industry"

