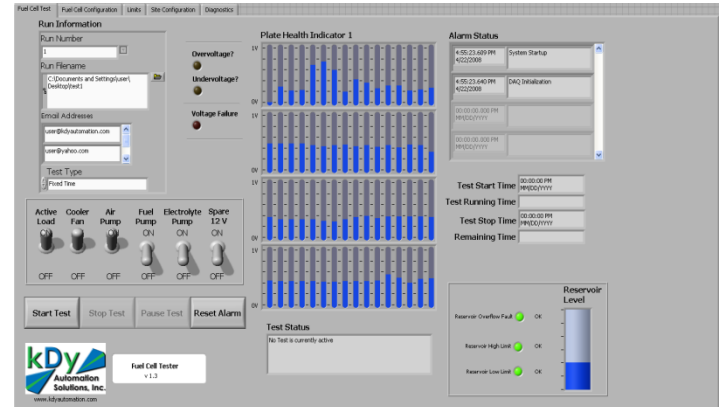


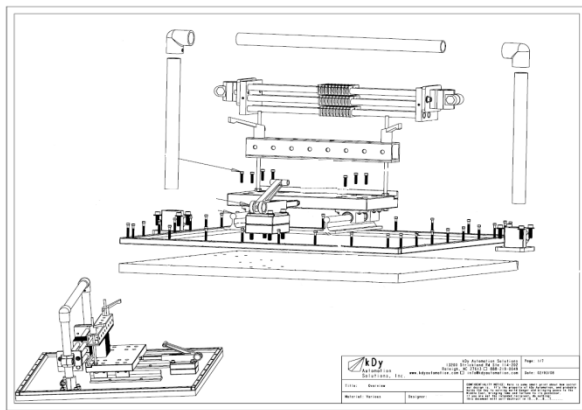
## Fuel Cell Test System

- Intelligent user interface concisely displays the status of more than 641/O channels
- Custom testing fixture designed using in-house CAD expertise
- Easy to configure software permits unattended testing over many hours.
- Data logging of all acquired channels with adaptive sampling- sampling rate increases as acquired values shift away from normal
- Alarm logging with email and text message notification



## Overview

A manufacturer of next generation fuels cells asked kDy to develop a reliability test system that would permit unattended operation for more than 100 hours while controlling cell operation and logging individual cell voltages. A National Instruments™ PXI-based data acquisition system used with PC control and hardware watchdogs to protect against system failures. The solution kDy delivered allowed the customer to significantly reduce development time, as the product testing can now occur during evening and weekend hours and continuously.



## The Custom Test Fixture

To compliment the data acquisition system kDy designed and fabricated a robust, easy to use fixture that secured and made electrical contact to the devices under test. The fixture also included a signal conditioning circuit to attenuate the large voltages that may be present in the system and containment for hazardous substances. The fixture was flexible enough to accommodate a wide range of device dimensions.

## Data Logging with Adaptive Sampling

The software kDy developed used an adaptive sampling method that automatically sampled the cell voltages faster when a trend towards failure was detected. This permitted scientists and engineers to obtain critical failure related data.