![wireflow logo]

Acticon uses LabVIEW™ for data acquisition

in their Air and Acoustic Technology Laboratory
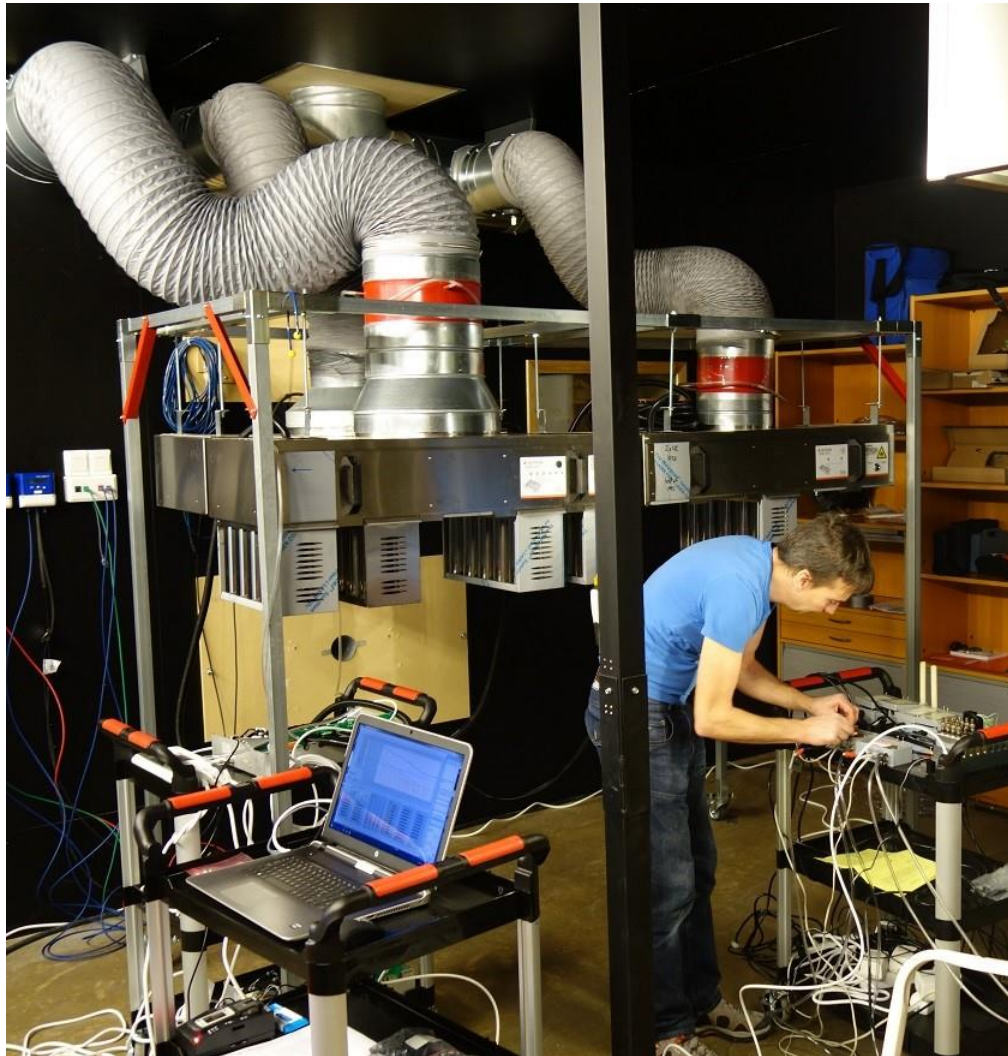
Abstract

Acticon used products from National Instruments and services from WireFlow in order to quickly set up a data acquisition system for evaluation of ventilation products in their air and acoustic technology laboratory.

The Challenge

Acticon is a leading supplier of ventilation products for sustainable, healthy and safe indoor climate solutions for residences, work places and public areas.

The Acticon air and acoustic technology laboratory is used when developing and evaluating standard products as well as customer-specific solutions. To increase the efficiency and the capabilities of the laboratory, Acticon needed to add a measurement and data acquisition system that could log multiple channels of air pressure, air speed and air flow as well as temperature and sound. All sampled data must be synchronized and displayed in real time. It shall also be possible to store the measured data on hard drive for post analysis in a variety of tools.

Figure 1. Acticon kitchen ventilation

The Solution

An NI 9148 Ethernet RIO Expansion Chassis is chosen as the platform to collect measurement signals from a variety of sensors:

- Sensor nodes, 0-10 V, air speed
- Sensor nodes, 0-10 V, air pressure
- Thermocouples for temperature

The chassis is equipped with two types of C Series modules to match the sensor signals:

- NI 9215 ±10 V, Simultaneous Analog Input
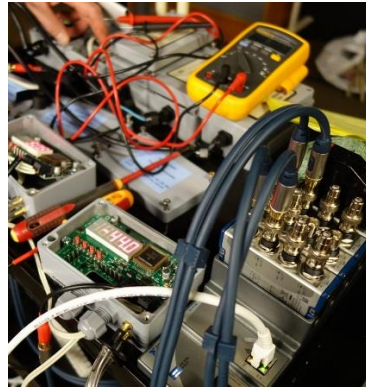- NI 9211 ±80 mV Thermocouple Input

Figure 2. NI 9148 RIO Chassis

A standard Ethernet cable is used to connect the chassis to the measurement PC. Furthermore, the PC also receives electrical measurements from a custom made data acquisition unit, and sound measurements from an acoustic real time analyzer device connected through a USB port.

The logger application written in LabVIEW executes on the measurement PC. It collects and synchronizes the data and displays it in real time on gauges and on trend graphs. The application functionality was specified by Acticon and implemented by WireFlow.

When setting up a new test in the laboratory, the logger application is configured for the current setup and immediately ready to display and record all measurement channels. Besides presenting the data in real time, the application can also stream it to the PC's hard drive for post processing.
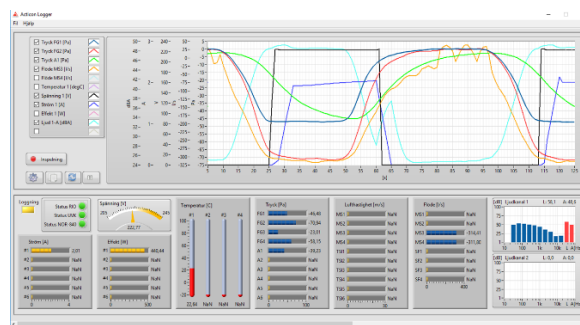

Figure 3. The Acticon logger application developed in LabVIEW

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