



**ENGINEERING SPECIALISTS** INC.

Providing Technical Engineering Services Worldwide Since 1974



KNOWLEDGE & EXPERIENCE YOU CAN TRUST

## Sensor Calibration and Tester

### Situation:

An internationally known manufacturer of Control Products (Sensors and Gages) for the Automotive, Motorcycle, Mass Transportation, Heavy Truck, Material Handling, and HVAC markets wanted to develop a testing system that would condition and tightly control the temperature of deionized water, and to calibrate a new product in that water for one of their overseas facilities. Other requirements were to design and certify the testing system to be CE/EN compliant.

### Solution:

Engineering Specialists, Inc. designed and built the system that provided the ability to simultaneous test up to 12 units at a time in three different stations. The three stations were not only designed to increase capacity but they balanced out the work load for the operators allowing parts to be removed or loaded while other stations were in cycle. The conditioning and water flow requirements were handled with a pump skid, designed to include UV light treatment, filtration, concentration control, 5 VFD controlled pumps and heaters to precisely condition and control the water.

Controls used were; Siemens PLC, HMI, I/O communications, and integration to the customer's PC and test software. Because of the CE and EN requirements and certifications, components were chosen carefully and the line filtration was designed to pass EMC testing.

### Objectives and Results:

The objective of the project was to meet the production rates while using the new media of DI water while tightly controlling temperature, flow, and eliminating agitation in the system which affect the calibration of the product. Another objective was to design the system to meet CE and EN standards and certifications to EN 60204-1:2006+A1:2009, EN ISO 1389-1:2008, EN ISO 4414:2010 and EN ISO 12100:2010.

The finished system resulted in meeting the cycle time and line balancing requirements along with successfully using the DI media to do the calibrations of the product. The system was fully run off at Engineering Specialists Inc. and was fully tested and certified to comply with the CE/EN standards, and successfully shipped to the customer's overseas facility.



## Our History

**A REGISTERED PROFESSIONAL  
ENGINEERING FIRM**

UL508 Certified (NNNY, NRBX, NITW)



Engineering Specialists, Inc. was founded by Robert Miller, a graduated of Marquette University's Electrical Engineering Program and Robert Phillips, a graduate of MATC.

The two close friends in need of a change had thought about consulting, but instead began building and designing the sophisticated equipment used by many of the most competitive businesses in the market today. Bob Miller recalls filing the very first customer file in his cabinet wondering if he would ever fill it. That was over 40 years, 1400 customers, and 20,000 projects ago!

With the technological challenges that all businesses experience, sometimes on a daily basis, Engineering Specialists has managed to evolve with the times to keep its customers in motion and ahead of their competition.

Contact Engineering Specialists today and find out how our skilled engineers and technicians can provide your unique business with the tools it needs moving forward successfully into the future.

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## 3 Convenient Locations

### **CORPORATE OFFICE**

21360 Gateway Court  
Brookfield, WI 53045  
Phone: (262) 783-8000  
Fax: (262) 783-8001

### **NEENAH OFFICE**

2416 Industrial Drive  
Neenah, Wisconsin 54956  
Phone: (920) 751-3900

### **RACINE OFFICE**

1139 Sunnyslope Drive  
Mount Pleasant, WI 53406  
Phone: (262) 783-8000  
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## Partners