

MILWAUKEE ELECTRONICS NEWS



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IN THIS ISSUE

Rebranding	1
Letter from Mike	1
'Hot' Redesign	2

About Milwaukee Electronics

Milwaukee Electronics designs and manufactures custom circuit board assemblies for the medical, transportation, military, HVAC and a variety of other industries. The Company operates over 135,000 square feet of manufacturing in Portland, Oregon; Milwaukee, Wisconsin; and Tecate, Mexico. In addition to EMS and product design and engineering services, it offers quick-turn prototyping through its Screaming Circuits business unit.



Is Now



Milwaukee Electronics Rebrands

In February, MEC returned to its original name of Milwaukee Electronics. The name change is part of a rebranding effort designed to highlight the Company's evolution from a regional electronics manufacturing services (EMS) provider to company with an expanding global footprint. During the last 15 years, Milwaukee Electronics grew and diversified its business model, expand-

ing volume EMS operations to include facilities in Milwaukee, WI; Portland, OR; and Tecate, Mexico, plus an International Purchasing Office (IPO) in Singapore, Tech Centers in Pune, India and Design Centers in Corvallis, OR and Milwaukee, WI.

In 2003, its Screaming Circuits business unit was created as a standalone quick-turn pro-

(Continued on page 3)

Letter from Mike

We are beginning a new year and the beginning of our 60th year in business with a new name: Milwaukee Electronics. It symbolizes both a return to our roots and a focus on better capitalizing on the synergies among our business units. The last 60 years has seen our company evolve from a Milwaukee-based contract engineering and manufacturing firm to a multinational business. Throughout that



evolution our commitment to finding innovative ways to support customer needs and building perfect product has remained unchanged.

Our rebranding efforts are discussed in greater detail elsewhere in the newsletter. This month I'd like to focus on the results of our annual customer satisfaction survey. Individual survey responses are collected by a third party because we believe preserving anonymity provides more candid responses. We see only the aggregate response. We averaged a 30 percent re-

(Continued on page 3)

The Engineering Design Group Turns Up the Heat

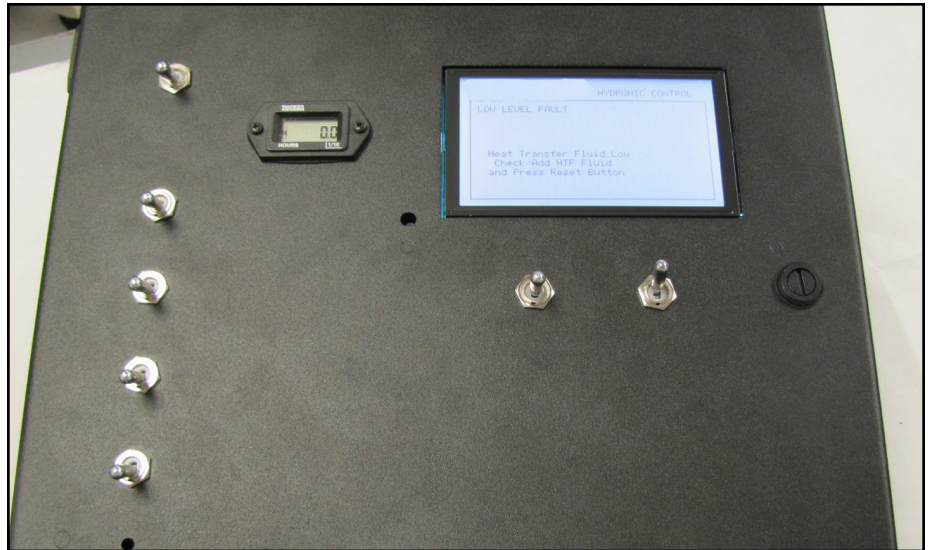
When the average person encounters cold winter weather they think of the inconvenience of driving to work or how difficult it is to stay warm. However, for people who work in construction, the challenges are much greater. Frozen ground is difficult to excavate. Concrete won't cure properly below certain temperatures. Tasks such as running electrical wiring can be difficult to do in heavy gloves. In short, colder temperatures make it very difficult for construction crews to get the job done. Fortunately, one of Milwaukee Electronics' customers makes solutions for that. And, when they decided to convert the controls on their equipment from mechanical to electronic, they contacted Milwaukee Electronics' Design Engineering Group to get the job done.

The redesign involved two products: a hydronic temperature control and an air temperature control. The hydronic temperature control is used with a system that pumps water into 2-inch flexible hoses which are used to heat the ground to allow for excavation of foundations and/or basements. The control unit includes a graphic display housed in a NEMA-4 industrial enclosure which supports extended temperature operation.

The second control is used as a forced air furnace and conduit system that provides a temporary source of heat in buildings under construction before the normal heating system is installed.

According to Larry Holten, Engineering Manager for Milwaukee Electronics' Design Engineering Group, the team was selected because they had an established relationship with other divisions at the customer and they were able to support a fast-turnaround on a prototype needed for a feasibility study.

"We were able to build a quickturn demo unit using parts from other prod-



Above, the hydronic temperature control unit that the Design Engineering Group re-designed from a mechanical system to an electronic system.

ucts we built for them early last year. That enabled them to show it to their sales team and conduct a feasibility study on market interest in the new version. We then did a full redesign," Holten added.

In designing the units, the team looked for ways to save the customer money over the long term.

"We used a common printed circuit board assembly (PCB) and common software for both units. This adds some flexibility in the production process, since PCBAs can be built and stocked in a Kanban to support configure-to-order of the higher level assemblies. However, the biggest cost savings is that it reduces the customers' overall number SKUs in their spares inventory," he said.

The team also utilized their existing expertise to overcome a few design challenges.

"These units are used with high power motors, which means they must work in an electrically noisy environment. We needed to design a control

that would prevent interruption when motor speeds were switched. We also needed to implement a new communications protocol, as the customer uses a proprietary communications protocol. We have a long history of successfully designing controls for generators and other types of high power motor controls so we able to tap our existing expertise to develop the right solution," Holten added.

The air control units are undergoing final testing in Russia this winter. Milwaukee Electronics' EMS business unit will begin production of the hydronic control complete units in June. In addition to production, the EMS team will also be supporting the customer's repair depot requirements.

Letter from Mike

(Continued from page 1)

sponse rate across the EMS customers surveyed. The majority of responses related to performance ranked us over 3.5 out of 5, where 1 equaled poor and 5 equaled exceptional. The ratings varied by facility with our Portland, OR facility scoring the highest and our Tecate, Mexico facility scoring the lowest. We also got a very good picture of customer challenges and where you would like to see us invest in improved processes.

There are several trends we plan to address. First, we feel that our performance should be consistently high in all facilities. We recognize that ERP system implementation timing in each facility and the move of our Tecate, Mexico facility to a new campus may have played a role in the variance in performance ratings last year. However, we are closely analyzing performance metrics to determine where improvement opportunities may still exist. Our goal for this year is consistently

high ratings throughout the company.

Second, the biggest issue most customers identified was the need for speed. Your response lead-times have shortened and you need our lead-times to shorten, as well. The main reason we made an investment in both a new ERP system which increases our materials status and production status visibility throughout the company plus an international purchasing office (IPO) in Singapore which increases our supply chain options, was to put the necessary building blocks in place to become a more nimble and responsive supplier. We've fully implemented the ERP system and have been modifying our internal processes to take advantage of the added visibility and capabilities that system provides. Expect to see improvements in our responsiveness over the coming year as a result.

Third, another key issue customers

identified was that products were becoming more complex. Milwaukee Electronics was founded as a company that was strong in both engineering and manufacturing. We intend to continue investments in maintaining our engineering bench strength, and adding production equipment aligned with our customer's needs.

The main reason we are celebrating 60 years in business is because we do listen to what you tell us. Exciting things are happening at Milwaukee Electronics. We value your support and look forward to demonstrating how our more unified business approach and system enhancements help us better address your needs for greater responsiveness and support of more technically complex product. We look forward to your assessments of our progress in next year's survey.

P. Michael Stoehr

President

Rebranding

prototype service. Around the same time, the Company formalized its Design Engineering group, and more recently a custom motor and controls design group. In 2011, Milwaukee Electronics started reorganizing to streamline operations and offer customers the ability to seamlessly work with multiple business units and enhance shared processes through a com-

mon ERP system.

The website address has been changed to www.milwaukeeelectronics.com and content has been updated. There is also a new EMS [blog](#) that includes a variety of information on Milwaukee Electronics and industry trends searchable by date or topic. Email addresses have also changed from @meccompanies.com to

@milwaukeeelectronics.com. Marketing material has also been updated.

The one thing that hasn't changed is Milwaukee Electronics' commitment to delivering the highest quality products and services in the EMS industry—a commitment we've now been keeping for 60 years!

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