



# UCEC Builds Safety-Focused RFID-Enabled Control Panels

## PROJECT PARTNER



## THE PROBLEM

Logical Systems, Inc.'s customer is an international beverage maker with plants around the world. Each plant contains several machine shops with milling machines, lathes and other equipment.

After a serious injury occurred when an unqualified employee operated equipment in a plant machine shop in another state, the customer needed to find a solution that guaranteed only trained employees would be permitted to operate dangerous machinery.

## THE SOLUTION

Logical Systems, Inc. (LSI) designed a series of electrical control panels that enable user access through RFID technology. They partnered with UCEC to build the control panels in our Arvada, CO shop.

## BY THE NUMBERS

<b>0</b>	Accident Goal
<b>1</b>	Beverage Plant
<b>6</b>	Onsite Machine Shops
<b>2</b>	Levels of Employee Access
<b>36</b>	Machines Controlled by RFID Technology

## A Focus on Worker Safety

A beverage plant is a bustling center of activity. On-site machine shops help keep things working smoothly when a pipe cut is needed, a part has to be made and other tasks. The heavy machinery in these shops is open to most employees and generally, not segregated from the plant. As a result, untrained workers can access the machine shop equipment.

As the project kicked off, LSI did several site surveys to understand the scope of the issue. At this particular plant, six different machine shops are scattered across the complex with a total of 36 machines that needed to be controlled by RFID technology. To add to the difficulty, not all machine shop workers were trained to work all of the machines.

From there, LSI worked on a badging system that combined RFID technology and PLCs programmed to control power through a series of contact relays that allow power to switch on and off. Once an employee scans their badge, the PLC enables the machine for operation. The machine stays enabled as long as it is operating and shuts off after a specified amount of time without activity. This allows workers some time to reposition parts and continue working, without providing enough time for another unqualified employee to operate the machine. Workers have two levels of access based on their training.

“When a worker scans their badge, if they have access to that machine, it will power on,” says Owen Sampognaro, Controls Engineer at LSI. “Along with the machine power coming on, a log is made of who the worker is and how long they operated the machine. If the machine is inactive for a set period of time, the power will shut off until the next badge activity.” The contact relays sense when a machine is running, so it won’t shut off in the middle of activity.



## UCEC Brings Craftsmanship to the Project

When LSI looked for the right partner to build the RFID-enabled panels, they chose UCEC. “LSI tends to work with UCEC a lot,” Owen says. “They do clean work, and the panels are always done on time. They’ve become our go-to panel builder.”



“RFID panels are a new frontier for us,” says Operations Support Manager Zach Fothergill. “However, we have a combined 30-plus years of experience on the Assembly side of the shop, so we were able to look at the project objectively. We ‘read between the lines’ to uncover a few small concerns and quickly addressed them.”

“When we heard about the project, we said, ‘Let’s figure it out!’ And we did,” says Evan Coulter, UCEC’s VP of Business Operations. “We’ve learned to be flexible; to embrace new technology; and to use our creative minds to figure out problems with the help of talented vendors and clients.”

Owens says UCEC worked closely with LSI to get the panel fabrication just right. For example, the panels were designed with an opening at the top for the RFID antennas to stick out of the panel. UCEC pointed out that the install could be cleaner if everything was installed on a single piece of din rail, since the cable would be long enough to still reach the top of the enclosure. This allowed for a cleaner install that would be easier for initial “check out” and also easier for the electrical staff to maintain.

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“Two specialized companies collaborating to solve a customer’s problem often leads to a better result for the end user.”

**MARK INBODEN**

President and CEO of UCEC



“This project really brought the team together in terms of forward thinking,” says Garrod Massey, Operations Support Manager. “The panels don’t have a cable management system, so all wiring is exposed when the panels are opened. All wires had to be accurately and neatly bundled to provide the cleanest-looking panels, while maintaining an easy installation platform for the field technicians.”

“I’m very proud to be part of a team that is very ambitious, creative and willing to take on new challenges,” says John Beattie, Operations Manager for Production. “It’s one thing to view ideas on paper...but bringing them to reality is where we shine.”

Once the panels were built, UCEC powered up the panels for extensive testing. They are now being installed in the beverage plant.