Success story

Omron solution helps Japanese manufacturer reduce panel size, wiring time and overall costs

ULVAC, Inc., a specialist manufacturer of thin film deposition systems based in Japan, provides a wide variety of equipment that includes sputtering systems, chemical vapor deposition (CVD), vacuum evaporation and etching systems. The company recently upgraded its control panels to reduce manufacturing costs, since the conventional products required two control panels and involved complex wiring and labor-intensive installation and maintenance.

Upon evaluating the panel component offerings of several manufacturers, ULVAC chose to use Omron's "Value Design for Panel" components as these were superior in product availability and support. ULVAC was particularly impressed with Omron's unified design platform, which ensures a standard, miniaturized height and thickness for all components. This reduces dead space and helps reduce the overall size of the control panel.

In addition to the unified slim design, the Value Design for Panel concept features terminals with Push-In Plus technology instead of conventional screw terminals. These Push-In Plus terminals can be wired without tools in less than half the time it takes with conventional terminals, since the process is as easy as inserting an earphone jack. Even though only a slight force is needed to insert the wire, it is held as firmly in place as that of a screw terminal.

Business need

Japanese manufacturer ULVAC needed to minimize wiring work and reduce panel size in order to speed up assembly time at its customers' factories.

Unique solution

Omron provided Push-In Plus panel components as part of its "Value Design" platform that delivers a next-generation solution for control equipment.

Customer benefits

The manufacturer was able to reduce panel size by 30%, wiring time by 50%, and manufacturing costs by 30%.

The solution
Value Design with Push-In Plus

The need

The primary goal was to shorten assembly time. According to Masanori Sugimoto from the ULVAC's Control Designing Department, FPD PV Division, minimizing wiring work was an obvious strategy for achieving this goal. The ability to simultaneously reduce panel size would also speed up assembly and save valuable space at customers' factories. Many of these factories are in China, so the wiring is done there. Due to the large variations in workers' skill levels, wiring could take a long time.

With less time required to assemble a production line and more space available for adding more functionality, the company would be able to significantly cut down on manufacturing costs. Product availability and support was also crucial, particularly for when production and maintenance need to take place abroad. With a local presence in nearly all regions of the world, Omron is a clear choice for manufacturers who operate globally.

The technology

For production equipment, control panels are often a secondary consideration, since they are not directly responsible for manufacturing competitive products. However, they are actually very important in creating new potential for production equipment. All Omron panel components are built on a common platform termed "Value Design" that delivers a next-generation solution for control equipment, and the early adoption of these technologies can lead to competitive products and added value in the very near future.

Omron solutions also focus heavily on ease of use. In fact, terminals that incorporate Push-In Plus technology are easy to use regardless of a worker's skill level, and the wires will hold fast even in environments with significant amounts of vibration.

The outcome

Sugimoto says that ULVAC's customers have been highly satisfied with the speed of wiring, ease of maintenance, and exceptional space efficiency of the Value Design solution. In fact, the miniaturized components saved so much space that they could fit in just one panel instead of the previously required two panels. This is because all the terminal holes could be positioned on the front to eliminate the need for work space to the rear of the components. By reducing panel size by 30% and wiring lead time by half, the company enjoyed a 30% reduction in overall manufacturing costs.

About 80% of components inside ULVAC's signal system control panel in CVD systems now have Push-In Plus terminals, and the company is currently looking into ways to use them for the remaining 20%. They have also decided to use Omron safety relays with Push-In Plus technology and are working toward a new Internet of Things (IoT) solution. Many IoT solutions require additional components, making space efficiency a key consideration.