

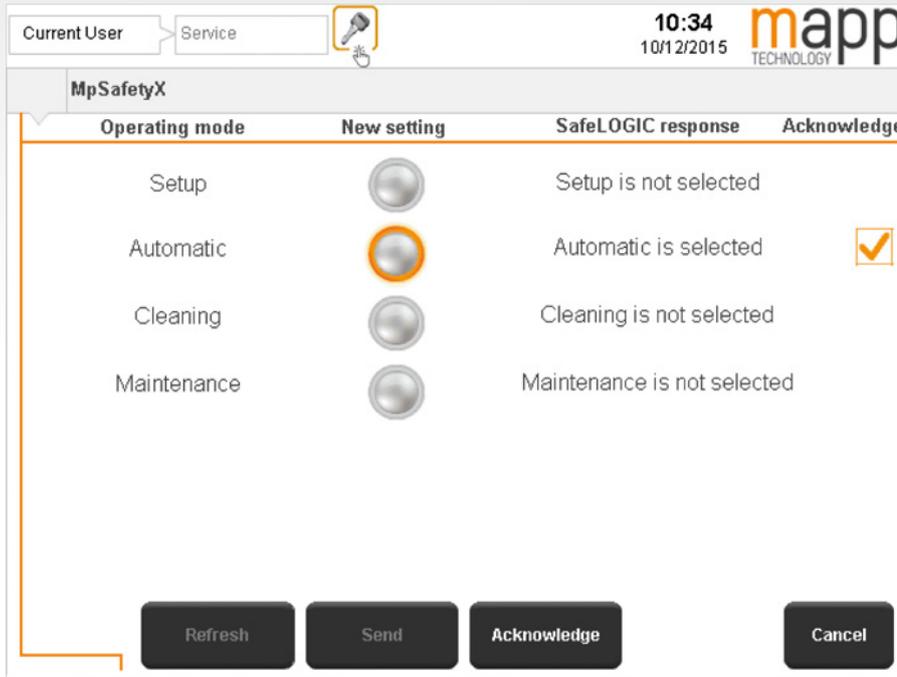


HMI-integrated safety

The key to keyless mode selection



Today's machinery and equipment increasingly requires special operating modes for tasks such as setup, cleaning and troubleshooting. Conventionally, key-operated selectors have been necessary to prevent these modes from being misused. Integration of safe mode selection into the HMI application now offers a solution that is more efficient and more elegant.



Operating modes are selected conveniently on the HMI screen using the pre-coded and certified widget.



Plant operators and service technicians use special operating modes to set up, test or correct the behavior of a system. Doing so requires them to open safety doors and covers without immediately stopping the machine. “The only way to do

that is by disabling certain safety functions,” notes Franz Kaufleitner, product manager for Integrated Safety at B&R. As a result, access to these operating modes must be restricted to employees with special training.

Adapting safety to special operating modes

“Until now, the only way to guarantee that only authorized personnel are able to select special operating modes has been with a key-operated switch,” explains Kaufleitner. To prevent special operating modes with reduced levels of safety from being misused for normal production runs, special operating modes generally involve reduced production rates or single-step operation.

Today’s machinery and equipment frequently requires a variety of special operating modes, each authorized for use by specific personnel. These solutions would traditionally require multiple key switches. “In larger plants, you also need to have each of these switches positioned in multiple locations,” adds Kaufleitner. The time and cost involved in wiring the hardware – and later in managing the respective keys and authorization levels – multiplies quickly.

Integrated in the HMI application

“A much more elegant approach is to inte-



mapp Technology

The mapp software framework is comprised of modular blocks that handle basic machine functions. Software developers can implement user management, alarm systems or even control functions for motion axes with no more than a few clicks. Relieved of these repetitive, low-level programming tasks, they can instead focus their energy on implementing and optimizing the machine’s core value-adding processes.

mapp components are fully networked and exchange data automatically. The audit trail and user management components, for example, work together to log the who, what and when of any changes to the system – without the developer having to write a single line of code. Of course, the same now also applies to operating mode changes made using mapp SafeOPTION.



Safe mode selection via the user interface works independently of the specific hardware used. Users are free to choose whichever B&R Automation Panel best suits their needs.

grate mode selection into the HMI application,” says Kaufleitner. Until now, there hasn’t been a product on the market that would permit such a solution. With mapp SafeOPTION, however, B&R has finally made it possible to safeguard input via the HMI application without requiring dedicated safety hardware.

Certified and approved

mapp SafeOPTION consists of a mode selector widget for use in the HMI application and a corresponding function block for the safety application. “Both of these elements are certified and approved for use in safety-related applications,” says Kaufleitner. The secure data exchange and confirmation sequences this requires are completely pre-coded.

As part of the mapp Technology software framework, the widget is automatically linked to the application’s user management system. To integrate the widget into the HMI application, all that remains for the software engineer to do is link the operating

modes to text objects and the roles defined in the user management system. Machine operators can then authenticate their identity using a password, RFID tag or fingerprint.

Seamless user management

“The result is a seamless solution for controlling all access to a machine or plant, including its special operating modes,” summarizes Kaufleitner. The need for key switches is eliminated without any compromise in safety. mapp Technology offers the additional option of logging and archiving all mode changes along with an exact timestamp and user ID.

Technicians have to cover much less ground when servicing particularly large plants since they can set the operating mode at any terminal rather than having to walk all the way to the next key switch.

“These days you also can’t underestimate the design aspect,” adds Kaufleitner. Modern machinery is more and more frequently being subjected to strict design guidelines

where key switches can be an unwelcome distraction. B&R has solved this problem elegantly by integrating mode selection into the HMI application. ←



The safety application runs on the SafeLOGIC controller, which also monitors safe mode selection.