Digital Lockout and Tagout for Hot Permit Maintenance Work

Increasing Productivity in the Process Industry with ECOM Mobile Devices

At a Glance

- Cuts cost by decreasing lost employee time
- Improves productivity by reducing equipment downtime
- Reduces rework in administrative and field activities
- Improves maintenance activities and planning



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The Application

Digital lockout and tagout is the process of de-energizing and safeguarding equipment, machinery, or processes to prevent hazardous energy from being reintroduced during maintenance or repair work performed from a mobile device. This includes closing circuits and valves, neutralizing extreme temperatures, securing moving parts, and more.

Although the terms “lockout” and “tagout” are often used interchangeably, their meaning is not the same. A lockout occurs when an energy source—electrical, mechanical, hydraulic, pneumatic, chemical, thermal or other—is physically isolated from the system that uses it (a machine, equipment, or process). Tagout is the process of affixing a label or tag that contains information about what is taking place on the machine or system and why it is important. In the case of digital lockout and tagout, these procedures are performed digitally from mobile devices, anytime, anywhere.

The Goal

A Brazilian oil and natural gas company was looking for a concept to create a digital environment to eliminate its paper-based processes in lockout and tagout procedures. In the past, tons of paper were used to register safety procedures. It was also difficult to get approval signatures, and eventually someone had to enter all the information into the computer, sometimes resulting in incorrect entries that took several days to complete. Data collection is critical when it comes to connecting frontline workers. Mobile solutions help companies capture data directly from frontline workers and resolve safety and operational problems faster. Data insights and communication capabilities support the right conversations at the right time to yield both cost and time savings.



The Solution

Digital lockout and tagout solutions from the Pepperl+Fuchs brand ecom allow users to easily upload all existing procedure documents, manage asset registers, link procedures to any device or machine, execute and view lockout and tagout procedures and share images via the integrated device camera, maintain and update equipment lists and hierarchies, and improve maintenance activities and planning using mobile devices such as the ecom Smart-Ex® 03 smartphone and Ident-Ex® 01 intrinsically safe Bluetooth® handheld barcode scanner/RFID reader as well as Pepperl+Fuchs RFID transponders. The devices feature NFC technology to read tags and Wi-Fi to enable wireless applications. It is now possible to view images from 360° cameras and view lockout and tagout points in augmented reality or on flat screen TVs, as well as display the status (locked, tested, etc.) in the control rooms.

The Benefits

With digital lockout and tagout, productivity in the process industry increases significantly. Mobile connected worker solutions enable a guided workflow with two-way communication that directs workers through the right steps, eliminating rework in administration and in the field. Time lost transferring data from spreadsheets in the field to the computer is no longer necessary. With digitized solutions, the entire database can be exported to the PC in .xls format. All inspections and reports can be exported in PDF format, eliminating the need for printouts. This ensures effective management of inspection progress. The mobile devices are globally certified, and a local support team is available to address the customer's inquiry quickly and directly.

Technical Features

All products are certified for Zone 1/21, Div. 1

Smart-Ex® 03

- Ultra-rugged large 6-inch multitouch display
- 5G and Wi-Fi 6 ready
- Android Enterprise Recommended (AER)
- Powerful and replaceable 4,400 mAh battery

Ident-Ex® 01

- Pairable with any Bluetooth device
- Ideal for rigorous scanning and intensive data collection
- High flexibility due to interchangeable head modules

RFID Transponder IQC21-30-EX

- ATEX approval for Zone 1/21
- Conforms to ISO 15693
- 896 bits memory available



For more information, visit: **pepperl-fuchs.com/px-mcc**

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