High Performance HMIs Key to Optimizing Operations

A high performance HMI (HP HMI) is an advanced but user-friendly graphical representation (interface) of an industrial process with simple visuals that are easy to view and understand. Design principles focus on displays that convey relevant information. For example, these applications feature navigation and displays structured to provide a system overview with a hierarchy that allows drilling into further levels of granularity.

High performance HMIs also have simpler designed graphic displays with standards-driven recommendations for navigation and presentation *and* monochromatic color schemes that provide clear and actionable information. Operators therefore do not waste time or make mistakes interpreting operational displays resulting in more efficient operations.

Below are some of the key characteristics of HP HMIs:

- **Intuitive design**: Interfaces are simple and easy to use and understand resulting in better operational monitoring and control.
- **Contextual information**: Operational information is presented logically and contextually, so operators can more quickly and thoroughly understand the status.
- **Trend visualization**: Real-time data and historical trends are displayed for enhanced operational analysis and decision-making.
- **Alarm management:** Alarm indicators are simple, clear, and prioritized, so operators can promptly respond to the most critical alarms for improved alarm management.
- **Customization:** Displays can be customized to suit specific processes and user preferences for an enhanced user experience and adaptability.

Moreover, HP HMIs offer crucial advantages over traditional HMI systems like:

- **Enhanced situational awareness:** HP HMIs provide relevant contextual information allowing operators to quickly recognize and understand the status of the operations. This level of operational visibility improves response time to abnormal situations and improves decision-making.
- **Reduced information overload:** HP HMIs present information concisely and clearly to reduce information overload. By minimizing the interface to only show the most relevant operational details, operators can efficiently focus on critical information and tasks.
- **Historical data and trend analysis:** Through the display of real-time data and historical trends, HP HMIs allow operators to analyze operational patterns to identify potential issues before escalation. This capability promotes proactive rather than reactive decision-making in addition to improved maintenance planning.
- **Effective alarm management:** HP HMIs offer the capability to prioritize alarms based on set conditions, so operators can respond to these based on severity. This capability also

prevents alarm overload to ensure that attention is directed to the most critical events. Consequently, operators can quickly identify and respond to critical issues.

- **Reduced downtime:** The HP HMI's ability to quickly identify and respond to issues due to top level situational awareness reduces downtime and avoids operational malfunctions and failures, resulting in substantial savings.
- **Improved operator efficiency:** HP HMIs provide the necessary tools for operators to effectively monitor and control operations for increased operator efficiency. Operators can then make informed decisions to affect process optimization.

These systems also offer:

- Increased integration with advanced technologies such as touchscreens, connectivity, and mobile solutions for a more modern and connected operational environment.

- Intuitive and user-friendly interfaces that are easy to learn and navigate, thereby easing the training and onboarding of new operators

- Increased overall operational excellence, a goal shared by all industrial and critical infrastructure organizations.

At the end of the day, high performance HMIs are the outcome of a fundamental commitment to progress, efficiency, and continuous improvement and provide tremendous value to the end user.

Learn more about HP HMIs in ICONICS blog: [High Performance HMIs Key to Operational Optimization](#) or download the ICONICS whitepaper: [High Performance HMI Guide](#)

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