

**Which Wired Clock System Best Aligns with the Requirements of Your Facility?**

Selecting the appropriate clock system technology for your facility can be a complex decision. Are you involved in a new construction or renovation project? Are you implementing a completely new wired clock system or just replacing malfunctioning clocks? Does the specified system incorporate the latest technologies? Choosing a wired system can be particularly perplexing due to the various available technologies. This guide aims to assist you in making an informed decision for your facility.

We produce three distinct wired systems: Two-Wire Digital Communication, RS485 Protocol Wired, and Three-Wire Sync. The exclusive 2-Wire Digital Communication stands out as a highly advanced wired system in the industry, integrating technology, functionality, reliability, and cost-effectiveness.

**Why Use 2-Wire Digital Communication System?**

The 2-Wire Digital Communication System commences with the SMA Series Master Clock, delivering precise time data to the Converter Box. Powered by 110 VAC, the Converter Box efficiently reduces the voltage to 24V. This process consolidates both power and time data signals onto the same wire pair, ensuring exceptional accuracy for the secondary clocks. This system not only provides superior precision but also facilitates straightforward installation. The 2-Wire Digital Communication system boasts several advantages over alternative wired technologies:

1. Operates with just two wires, efficiently delivering both power and data, resulting in time and cost savings and eliminating the need for additional wiring.
2. Powered by 24V, the clocks typically don't require a certified electrician for installation, avoiding stringent high voltage wiring regulations in most locations.
3. The 2-Wire Digital Communication System features an automatic polarity detection function. In case of wiring errors during installation, the clock can self-correct. Even with incorrect wire installation, the clock detects and reverses the wrong polarity, ensuring proper functionality.
4. The 2-wire system operates independently in parallel, without relying on power or data from other clocks. In the event of an issue with one clock, only that specific clock is affected, while all other clocks in the system continue normal operation.
5. The system provides corrections as frequently as once a second, ensuring unparalleled accuracy.

The 2-Wire Digital Communication system is well-suited for diverse applications. With its advanced design and functionality, the system is easy to install and demands minimal maintenance. Supporting both analog and digital clocks within the same system adds to its versatility. 2-Wire Digital Communication system is an ideal solution for seamless timekeeping, combining simplicity in installation with innovative technology to meet your needs.

**Why Use an RS485 System?**

The RS485 Communication protocol offers an ideal solution for smaller clock systems, typically recommended for setups with 10 clocks or fewer. Each secondary clock is locally powered, supporting 24V, 110V, or 220V. Time data is transmitted over a separate pair of wires, ensuring synchronization as frequently as once per second.

The RS485 Communication protocol is recommended for very small projects due to its daisy-chained configuration. In this setup, each secondary clock receives data from the clock immediately preceding it in the chain. For instance, if clock number 6 experiences an issue, it could disrupt the accuracy of data for clocks 7 through 10. Consequently, troubleshooting can become challenging, especially when determining the original installation order and addressing issues with clocks further down the line.

**Why Use a 3-Wire Sync System?**

The 3-Wire Sync System employs older technology, primarily utilized for retrofitting and replacing clocks in existing systems. Clocks receive hourly corrections to synchronize minute and second hands, with the hour hand corrected every 12 hours. The clocks recognize various Sync Wire protocols and can be powered by 24V, 110V, or 220V, offering flexibility for system integration. Capable of interfacing with other systems, clocks are ideal for retrofitting projects. However, due to twice-daily synchronization at around 6 am or 6 pm, power loss may result in clocks resynchronizing only at the next scheduled time, such as 6:00 pm.