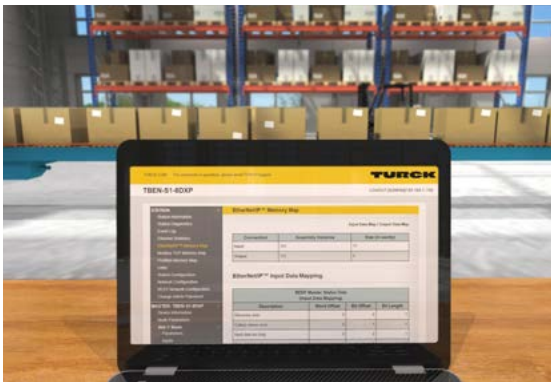
Reduce Costs & Setup Time of Package Handling & Conveying Equipment



The smooth flow of products through a fulfillment center is key to ensuring the fast and accurate delivery of goods consumers have come to expect. Setting up conveying and sortation systems and sub-systems is no easy task, especially when the system is complex such as in large e-commerce fulfillment centers. Smaller sized orders or mixed pallets with a much wider array of SKUs are now commonplace at distribution warehouses.

Sortation systems can be made up of multiple types of material handling solutions such as conveyors, product flow components, automatic identification products, automated sorters, diverters, elevators and more. All of these automation components and sub-systems must inter-operate. The ability of these modular sub-systems to communicate with each other and with other parts of the operation are growing in complexity.

The Challenge - Integrating Each Sub-System

Since a sortation system is a mission critical part of a distribution center, it is important that all of the components communicate properly back to higher level systems such as a PLC and enterprise level warehouse management systems. After you have selected the proper equipment, you need to consider your controls strategy. Choosing a control system and software that can dramatically shorten the configuration time required is ideal. For example, there can be hundreds of sub-systems in each distribution center facility. Each sub-system can be made up of multiple components and those systems often need to communicate back to a PLC. Each component has an I/O block. One of the difficulties that often arises is that each component installed into a sub-system could be made in a different plant across the country. If the components are not integrated into a sub-system before they arrive at the final location, that means they were built with no regard for the PLC they would eventually be connected to in the field. Customers may not want to have to address each block during startup at the distribution facility because of the time involved. During system setup, it can be a time consuming and costly task to set up an IP address on each sub-system and manually adjust each I/O block. Rather than touch every block, consider creating a high density I/O network that allows the devices to communicate as a single device.

The Solution - High Density I/O Network

Simplify communication: one recent development is the capability to network of up to 33 devices (1 Master + 32 Slaves) or 480 bytes of data to appear to the PLC as a single device on a single connection using a single IP address. By reducing the number of connections the PLC sees, the user will be able to create high density I/O networks and still utilize their low cost PLC. The solution, developed in the US by Turck, is called Backplane Ethernet Extension Protocol (BEEP). This technology is utilized by making the first device in the line a BEEP master, which can be done via the device webserver. The BEEP master can

then scan the entire network and create a new data map that includes all of the downstream devices, with all device configuration options saved in the master.

Advantages

- **Consolidation** of IP addressing
- **Saves time** - Automatically locates BEEP slaves upon power-up
- **Less downtime** - BEEP supports drop-in replacement of slave devices
- **Cost savings** - BEEP allows the user an opportunity to invest in a lower cost PLC that supports fewer connections

Additionally, BEEP is compatible with all standard Ethernet components and does not require special equipment. For more information about BEEP and Turck's I/O solutions, contact us at 1-800-544-7769.

More Information
For Technical Support click here.
Other Questions and Comments click here.