

## What does “Modular” Conveyor really mean?

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Modular is THE new Buzz word, often used to describe the latest developments in sortation conveyor systems. The Use of the term “Plug n Play” is increasingly and often used in conjunction with the term modular. But what do these terms really mean to users and why should they care?

Merriam-Webster defines modular as:

*“constructed with standardized units or dimensions for flexibility and variety in use”.*

Wikipedia goes further and states: *“Besides reduction in cost (due to less customization, and shorter learning time), and flexibility in design, modularity offers other benefits such as augmentation (adding new solution by merely plugging in a new module), and exclusion.”*

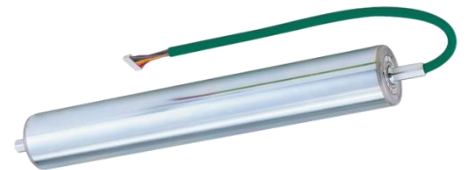
So, when you read modular, you should expect a lower cost with standardized units that can be “plugged in” with flexibility and variety. It can be argued that true modularity requires true plug n play capabilities or in the Conveyor world, “Plug in and Run”.



in and Run” Modular Conveyor system.

Tech Terms define Plug n Play as “used to describe devices that work with a computer system as soon as they are connected. The user does not have to manually install drivers for the device or even tell the computer that a new device has been added. Instead the computer automatically recognizes the device, loads new drivers for the hardware if needed, and begins to work with the newly connected device.”

In the real-time world of modern conveyor, Motor Drive Rollers (MDR) are the key component to any “Plug



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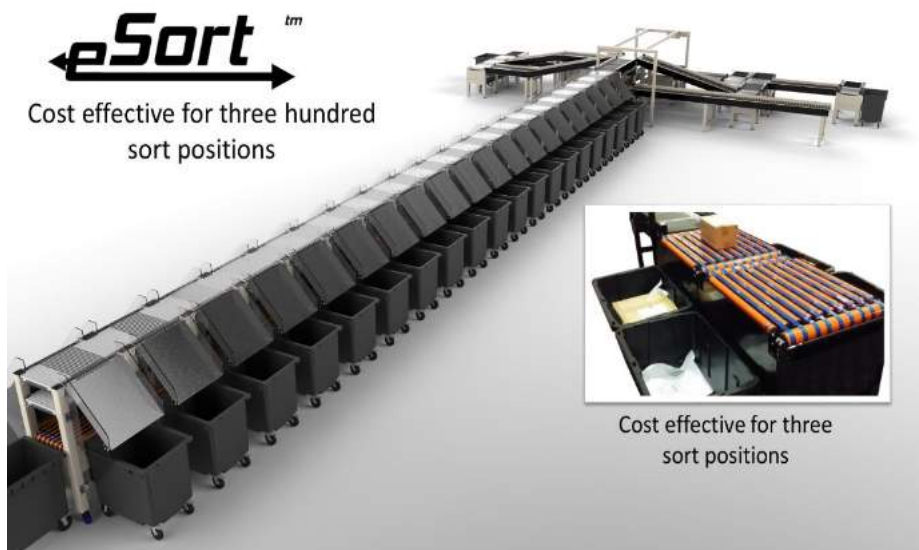
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*With Plug n Play / Run modular Conveyor, the savings and flexibility are quite obvious: Programming, Integration, Implementation and installation timelines are all dramatically reduced.*

*How should modularity and plug n play / run apply to a sortation system?*

The granularity for sortation modularity should be per sort position. Users have varying requirements for number of sorts required. Modularity with this level of granularity is impossible for sorters built on continuous track. Continuous track is narrow belts, bomb bay, tilt tray, shoe, or cross belt. Transfers or diverts provide this level of modularity. Pushers are single sorts while bi-directional transfers offer two sort positions per mechanism.

True modules should be capable of combining together without restriction in number or pattern. User's requirements and floor space restrictions change. Only number of modules required should change for users **Requiring 3 or 300 sort positions**. Sort patterns should be capable of branching in various directions, in lines or circular.



Designed into each module are simple mechanical and electronic interface. Innovations, by definition need to provide both. This is where Plug n Play / Run features provide a huge impact. True Plug n Play / Run provides the capability for the module to become self-aware, knowing its location and function relative to other modules. The various roles of each module are automatically known as a function of where it is located by nature of being plugged in with other modules.

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Variable Functions: The sort modules’ function(s) of are able to be changed automatically (auto-recognized), depending on positioning with other modules, with the benefit of the modules being mechanically the same.

Some modules are different by design for specific functions like scanning and weighing items to be sorted. These modules should plug n play with the transfer modules forming a complete system capable of sorting based on scans and weight.

**A true modular sortation system with plug n play capabilities should be capable of installation in minutes.** Reconfiguration should be similar.



Why should users be concerned with modular conveyor and plug n play? Quick answer is ROI (Return on Investment). Modularity provides economies of scale for manufacturing savings but also tends to produce a more reliable and well proven product. Flexibility allows user to cost effectively reconfigure for changes in business or expand as business grows. Pre-built modules mean faster delivery while plug n play offers very fast installation times.

As systems must come on-line faster, so do the savings and increased profits. Each module should be engineered with a design or innovation that provides both easy mechanical, electrical and electronic interface. This is where Plug n Play conveyor features have huge impact. True Plug n Play provides the capability for the module to become self-aware knowing its location and function relative to other modules. The roles of each module is automatically known as a function of where it is located by nature of being plugged in with other modules.

Sort modules are capable of changing depending on its position with other modules, yet the modules are mechanically the same.

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### Qualifications for real modular plug n play:

- 3 to 300 sort positions with the same module
- Fast delivery
- Fast installation
- Flexibility to grow sorter with business
- Zero or low engineering and programming cost