We Optimize Your Supply Chain

DEMATIC

Dematic FlexSort SC3

CROSSBELT SORTATION SYSTEM

Dematic Crossbelt Sortation System

FlexSort SC3: Modular, Flexible, Scalable

OVERVIEW

Items to be sorted are tracked and controlled through the induction, transport and off-load process with precision. The items are sent to different destinations according to the business rules established for each application. The bar code on each item is scanned; a “look up” table in the WCS software is referenced to determine off load location. Alternatively, the sort controller can directly link to your host system for real-time destination confirmation.

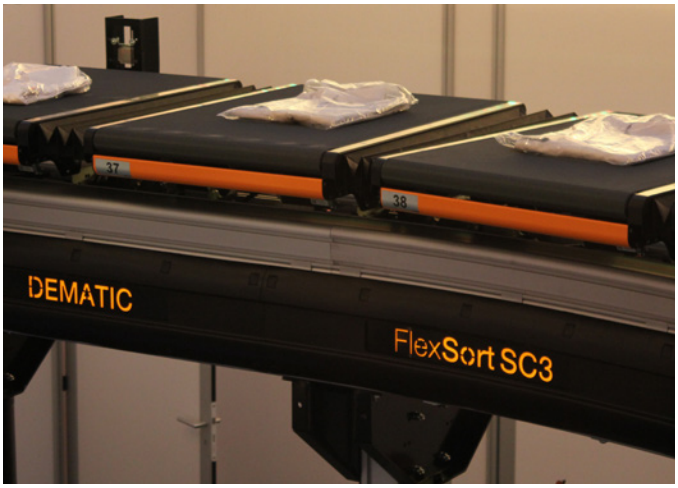
CROSSBELT SORTERS SUPPORT MULTIPLE APPLICATION ENVIRONMENTS:

Batch Pick & Sort: To maximize productivity, items for multiple orders are grouped and picked in a batch, typically hundreds of orders in a batch. The crossbelt sorter is used to sort the batched picked items into individual orders.

Interlink: Various processes in an operation are connected via use of the crossbelt sorter. This may include linking high density storage with pick/pack stations and shipping or linking put-away stations with high density storage.

Crossdock: For flow through operations that receive and ship only, the crossbelt sorter serves as the platform to distribute and sort loads to the appropriate shipping doors.

Shipping: The crossbelt sorter provides the sort function for the shipping sub-system. Typical sorting logic is associated with a geographical destination for the item or by shipping carrier. The items are sent to their destinations according to a correlation between a bar code on the load and a divert location in the system.



KEY ATTRIBUTES

- Capacity range: 15,000 - 80,000 items per hour
- Single, twin, double deck, & quad cell
- Positive two-sided sorting
- Quiet operation
- Precise & accurate off-loading
- Selectable off-load speed according to item ` size, dimension & weight
- Cells designed for fast removal, thus shorter time to repair (removable in less than 5 minutes)
- Redundant design omits single points of failure

One Modular Platform

Two Motion Drive Options, Two Power/Data Options

THE DESIGN

The modular architecture provides the foundation around which standardized mechanical, electrical and controls components can be configured. This engineering strategy allows the arrangement of multiple configurations ; users can select the motion drive and power/data options that are appropriate for their application.

For power and data transmission, the Dematic Crossbelt Sorter can be configured with either a bus bar with brush contact technology, or with non-contact technology . The contact technology uses a power rail and a collector brush on every master carrier. The non-contact solution includes IWLAN RCoax cable communication for data and a high frequency energized cable for power transmission. The non-contact technology operates with non wearing parts and therefore less maintenance.

The sorter drive system can be configured with linear induction drive motors (LIM) or with linear synchronous motors (LSM). The linear synchronous motors operate using 75% less energy than the linear induction drive motors. Also, cooling fans are not required.

OPERATIONAL FLEXIBILITY

There are no physical communication points (like an antenna) or physical (mechanical) diverter. Instead, loading and un-loading communication points are logical. The sorter cells can be activated anywhere along the sorter loop. Therefore, it is possible to add and/or move chutes, induction stations or change the sorter speed without additional hardware installation and commissioning (only a parameter in the data base). In addition, if there is a component failure, it does not compromise the availability of the system, only deferred maintenance is required.

BACK UP SYSTEM

The Crossbelt System Architecture includes a warm back-up (hardware & software). If system operation is interrupted, the crossbelt sorter will restart in less than 5 minutes without losing the data of items loaded on the system to be sorted.

NEW DESIGN FEATURES

- Light weight platform with reduced mass carriers uses 23% less energy
- Non contact power & data communications reduces maintenance
- Linear Synchronous motors reduce energy consumption by 75%
- Low friction plate under load transfer belt reduces energy consumption by 60%
- Majority of components are non proprietary, industry standard, commercially available, for example, industry standard motor & controller for each carrier load deck
- Brushless drive motor on each carrier, 48 volts DC
- Carrier side plate design increases useable cell dimensions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Dematic FlexSort SC3 Technical Data

Load Types
Plastic tote box, cardboard carton, trays, stuffed envelopes, poly bags

Load Weight Capacity
Minimum: 20g (.4 pounds)
Maximum: 75kg (165 pounds)

Load Dimensions
Minimum: 50x50x1mm (2x2x.4 inch)
Maximum 1500x800x800mm (59 x31.5x31.5 inch)

Configurations
Single cell: One belted load section
Twin cell: Two belted load sections
Double deck: Two sorters with common track
Quad: Four belted load sections

Dematic Quad™ (patented solution)
- Four independent crossbelt cells per carriers
- Manage units in single, double & quad cells
- Ultra-high throughput
- Accommodates range of load sizes

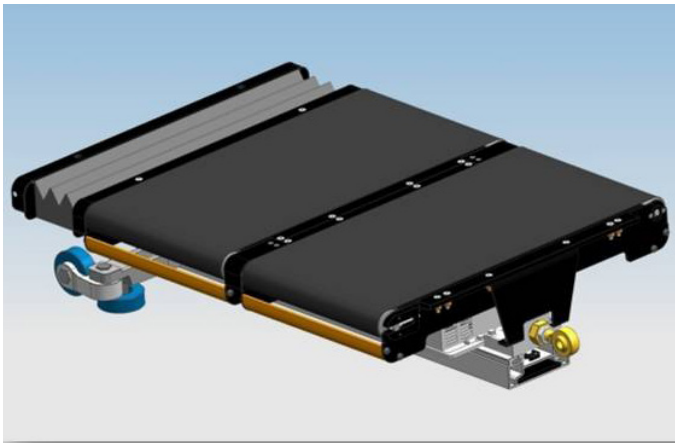
Carrier
Construction: Lightweight design
Electrical system: Low voltage 48v DC
Motors: Brushless
Speeds: Maximum 3m/sec (600 fpm)
Sound level: Less than 70 dBA
Elevation change: Up to 16 degrees

Power & Data Transmission Options
- Bus bar and collector shoes
- Non-contact technology
  -power: high frequency energized cable
  -data: IWLAN RCoax cable communication

System Drive Options
- Linear induction motors (LIM)
- Linear synchronous motors (LSM)

Load Induction
- Direct manual loading on carriers
- Manual loading onto induction station
- Automatic loading (side & top)
  -length orientation & cross loading selectable
  -high rate induct (up to 16,000 uph per line)

System Controls
- QNX real time operating system
- Industry standard controls components
- Logical control without physical device
- Real time dedicated 3D multi-client SCADA
- Bi-directional communications for diagnostics



The twin cell Crossbelt has two belts on the same carrier. This configuration accommodates items on a single cell or both cells. This arrangement allows higher system throughput capacity.

HIGH EFFICIENCY ASPECTS OF DEMATIC FLEXSORT SC3

- 20% reduction in carrier weight
- 60% less energy for loading & unloading
- 75% reduction in energy use with linear
- synchronous motors (LSM)
- Automatic standby mode for induction conveyor
- Automatic variable offloading speed
- Motor size on carriers to match load
- requirements of application
- Reduced number of wear parts
- 85% of parts can be un-assembled & re-cycledsions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