Structural changes in mail delivery and additional demands arising from new communication media for on-line ordering of goods will lead to a further increase in the number of flats and goods sent by mail.

For this reason the sorting of mail with widely varying formats must be performed in an increasingly economic and efficient manner. Siemens has been involved in the development of flats sorting machines for more than 25 years and consistently applies this experience to the development of new systems.

Open Mail Handling System OMS

Innovative system architecture

The new generation of efficient and ergonomic flats sorting equipment, the Open Mail Handling System OMS, meets the market requirements for a system with a high throughput and the ability to handle a wide range of mail.

The system's architecture, which represents a new departure from conventional flats sorting machines, is based on moving outlets and two counterflow transport levels. This solution provides a high throughput of up to 50,000 items per hour, allowing the mail to be transported with great care and ensuring maximum stacking quality. The system enables a wide range of mail to be processed, from standard letters to flats of all types and packaging.

The new system facilitates not only simple inward and outward sorting, but also 1- and 2-pass sequencing.
The benefits of the OMS at a glance

Reduced operating and investment costs
- High productivity (up to 50,000 items per hour)
- High system scalability
- High availability through redundancy based on independent sorting sections
- Designed for a wide range of mail items
- Low rate of doubles
- Minimum number of jams
- High stacking quality reduces the amount of work during further automatic processing

Significant staff satisfaction
- Ergonomic design and handling thanks to the integrated tray unloading system

High flexibility
- Up to 650 outlets
- Scalable in throughput

Optimized logistics
- On-the-fly sort plan changing
- High level of tray filling and stacking quality

Sorting function
- Allows 1- and 2-pass sequencing
- Allows operation with several sort plans (virtual machines)
Even with high system throughput the mail in the sorter is transported at a low speed to the transfer pockets via two decoupled counter-rotating transport levels and dropped into circulating outlets. This reduces the risk of damage and jams during transport.

**Optimum stacking quality and tray filling**
The timing at which mail pieces are dropped into the customer trays is controlled according to format and thickness. A centrally located tray filling measurement system records the actual filling level of each tray. The result of this measurement is also used to determine the right moment for transferring the mail. This ensures the best possible stacking quality and alignment of the mail in the tray.

**Barcode printing and reading**
The OMS is designed to print and read both fluorescent and black-and-white barcodes. Where items cannot be directly printed on due to their surface properties (poly-wrapped), a label is applied beforehand by means of the high-speed label applicator.

**Fingerprint – alternative mail identification**
As an alternative to barcodes, the newly developed fingerprint system (digital mail signature) can also be used. There is no need for any processing equipment for the application of barcodes. This also results in additional savings for consumables (labels, ink) and maintenance. In addition, there are considerable marketing advantages in having the mail arrive at the recipient in its original state.
Open Mail Handling System OMS
Automatic address reader
The newly developed scanner with a resolution of 256 dpi allows image capture to a height of 306 millimeters and is equipped with state-of-the-art LED illumination with constant light emission and a long service life.
This new technology is the basis for the implementation of all future reading tasks and extensions, such as indicia detection or automatic forwarding.

Numerous configuration options
The innovative system design provides maximum flexibility with regard to configuring the system and adapting the logistics to a very wide range of sorting processes. The OMS can be scaled to suit many different requirements regarding throughput, available space and the number of required outlets.

Intelligent sorting
A high degree of efficiency is achieved thanks to the innovative approach of sorting mail into moving outlets rather than static outlets. The allocation of the trays to the sorting product is handled dynamically. Intermediate storage of mail in the transfer pockets also allows the option of 1-pass sequencing without the need for additional hardware. On-the-fly sort plan changing is possible, as is the operation of different sort plans depending on the feeder module (virtual machines).

Integrated tray handling systems
Integrated tray handling systems, which transport the full and empty trays within the operating area of the machine, ensure that the customer trays are moved as little as necessary by the operating staff based on ergonomic considerations. The full tray supply system transports and distributes the trays to the individual tray unloading devices. The empty tray supply system takes the empty trays to the empty tray buffer and the sorter. The full tray take-away system combines all the relevant functions for the removal and further processing of the completely sorted full trays, for example connection to an external handling system or manual commissioning.

Ergonomic design
The workplaces, which have been designed on ergonomic principles, provide for simple and low-stress operation. The high quality of the design, which reveals exemplary innovation in both form and function, also won the international "Red Dot Design Award".

Optimized operating concept
Each feeder module is equipped with an operating station for operative inputs and outputs.
An additional central operating station is available for administrative activities. All interactions for operating the system are implemented in web-based user interfaces.
Comprehensive diagnostics and analysis tools allow quick and easy troubleshooting and fault rectification, thus contributing to the high level of operational availability.

Simple maintenance and diagnostics
Access for repair and maintenance work was already taken into consideration during the design and development stages. Easy access and fast replacement of serviceable units help to reduce maintenance costs and increase system availability. The user-friendly electronic DirectDoc® documentation and the online diagnostics system provide the maintenance staff with the necessary information for rapidly identifying and rectifying faults.
Technical data

Types of mail
- Length: 101 mm – 406 mm
- Height: 85 mm – 305 mm
- Thickness: 0.5 mm – 32 mm
- Weight: 2 g – 2,000 g

Noise level
- 68 dB(A) (DIN EN ISO 11 204, DIN EN ISO 11 200)

Configurations
- 1 infeed section (2 feeder modules)
- 2 infeed sections (4 feeder modules)
- Tray unloading device for each feeder module
- (Pre-) barcode reader
- Barcode printer
- Barcode verifier
- High speed label applicator

Nominal throughput
- Configuration with 2 feeder modules: up to 25,000 mail items/hour
- Configuration with 4 feeder modules: up to 50,000 mail items/hour

Tray handling systems (optional)
- Connection to the customer’s full tray supply system
- Manual full tray supply
- Manual empty tray infeed
- Full tray commissioning

Further options
- Tray label printer
- Tray label applicator
- Fingerprint (virtual ID tag)

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