



ARC Base RFID sorting station

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Many logistics and production environments rely on operators and manual barcode scanning to ensure items are sorted accurately to pallet or gutterboxes: an operator uses a mobile barcode or finger scanner to scan the item barcode and subsequently the “destination” barcode, e.g. the SSCC label on a palletbox. As operators often must process multiple items for multiple destinations simultaneously, sorting errors are easily made, especially when operators are distracted. Also, handling items and a barcode scanner together with the items to be sorted, reduces the throughput.

Mieloo & Alexander’s RFID sorting station eliminates the need for manual and “conscious” barcode scanning and reduces sorting errors to a minimum by alerting an operating when an error is made, after the item is placed in the pallet or gutterbox.



RFID sorting station process and functionality

When a new, empty palletbox is placed at one of the RFID sorting stations, it needs to be assigned to the correct SKU, picking order or shipping route. This can either be done:

- Manually: a UI on the tablet above each sorting station (and a barcode scanner attached to the tablet) allows a barcode scan of the palletbox identification to that location, and subsequently the selection of the correct SKU, order or shipping routes.
- Automatically: placing the first item in an empty palletbox determines the allocation; all subsequent SKU’s or colli placed in that palletbox must be the same SKU or for the same order or shipping route.

If a palletbox should contain multiple SKU’s or items for multiple orders or routes, only manual assignment is possible. It’s also possible to assign multiple palletboxes to 1 order or route.



RFID sorting station process and functionality (continued)

The assignment of each palletbox is shown on the UI on the tablet above each sorting station. Once assignment is completed, the operator(s) can start stacking items into the palletbox. Advanced sensors trigger the RFID read cycle only when 1 or more items are placed in the palletbox. The system reads the RFID tags on the newly placed item(s) and neglects any items already assigned to palletboxes in previous packing cycles. The system checks if the newly added items match the pallet assignment. If this is not the case, a visual and audible error alert is provided, and the display shows the number and ID's of the items that are wrongly placed in the sorting station. The operator retrieves the incorrectly placed items and places them in the correct palletbox, after which these items are removed from the packing list of the 1st palletbox.

Logistics MIELOO & ALEXANDER **Fehrer**

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Hardware components

RFID reader and antennas

1 RFID reader with up to 8 antenna ports serves an equal number of RFID sorting stations.

Android tablet and barcode scanner

A low-cost Android tablet VESA mounted above each sorting stations displays the ARC UI sorting application, provides user feedback and supports the initial assignment and closure of the sorting process. A cabled or BT barcode scanner is used for the manual assignment or for error correction.

Sensor and audio horn/lightstack

The physical environment and positioning of the sorting stations determine which sensor needs to be used. In case multiple gitterboxes are placed against each other, a time of flight laser distance sensor can be used. If pallet boxes are placed with some distance between them, a light curtain is used. Optionally, the sorting system is extended with an audio horn and/or lightstack to provide operator feedback in case of errors or system issues.

**Automated sorting
and error
correction**

**Hands-free
operations**

**Sorting products
per SKU's, order or
shipping routes**

Fast and Accurate

**Easy integration
with MES or WMS**

**Versatile
configurations**