

Benchmark Briefing

TME: Warehouse grows to meet Requirements





Expansion in three steps

Sustainably planned high-bay warehouse meets growing expectations

Transfer Multisort Elektronik (TME) is a fast-growing, international distributor of electronic components with a focus on the B2B sector. The family-owned company, which was established in 1990 and is based in Lodz, Poland, supplies a wide range of electronics, electromechanics and automatic components, as well as workshop equipment. Of the approximately 500,000 listed articles, most are permanently available in the 18,800 square-meter central warehouse at the company's headquarters.

From its HQ's, 5,000 packages are shipped daily to some 150 countries. TME employs more than 1,000 people from almost 20 different countries. TME also operates 11 national subsidiaries in Europe, China, and the USA.

**Sustainable
planning**

**Multi-
stage
extension**
to reach today's
5 aisles

**Supply
capability**
for approx.
500,000
articles

Case at a glance

Location

Lodz, Poland

Case

Transfer Multisort Elektronik (TME) is an international distributor of electronic components. Its rapid business growth requires a flexible storage solution.

Solution

Kardex Mlog constructed an automated high-bay warehouse in three construction stages with a current capacity of approximately 12,500 pallet storage spaces.



Large-scale trading

In the initial extension phase, the 23-meter high, 96-meter long, and 8.3-meter wide building had only one aisle, which was served by a single stacker crane of type Kardex MSingle. Eleven years ago, the capacity of approximately 2,500 pallet storage spaces was more than sufficient. In 2011, TME's product range consisted of 64,350 items and the daily total of incoming orders was 1,300.

Just three years later, in 2014, these numbers had almost doubled, leading TME to commission Kardex Mlog for the first extension and add two aisles. By tripling warehouse capacity it would ensure that TME was equipped to face forecast demands for the next five years. In 2016, the company decided to optimize the distribution vehicles to increase throughput at the plant.

The next major works were planned for 2019: By now, TME was receiving 3,650 incoming orders every day and the product range had grown to 329,000 items.

Fit for the future

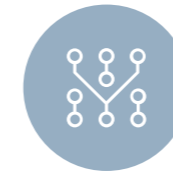
Family-owned companies tend to focus on forward planning: This certainly applies to the international electronic components distributor Transfer Multisort Elektronik (TME), headquartered in Lodz, Poland.

Back in 2011 when the fast-expanding mail-order and online retailer teamed up with Kardex Mlog to plan an automated high-bay warehouse for pallets, the plans included significant space for further growth. Specialist distributor TME commissioned Kardex Mlog to construct a high-bay warehouse at their base in Lodz, Poland and, since then, Kardex has carried out two extensions to the plant, which now has five aisles.

The most recent extension phase, which added 4,920 pallet storage spaces, was completed in August 2020. In May 2022, the conveying technology will be converted from distribution vehicles to continuous conveyors to meet the significantly increasing requirements.



5 stacker cranes of type Kardex MSingle A600/23-E with a height of 22.1m each



Controls (SPS) of type Siemens S7-1500F and SEW MoviPLC



Monitoring of 5 stacker cranes and the conveying technology via the Kardex MVisu visualization software



57 single cycles or 35 double cycles per stacker crane per hour

Features and background

As in 2014, Kardex Mlog installed two additional warehouse aisles during ongoing operations. The project also included two stacker cranes, conveying technology for storage and retrieval with eight drives, and steel racking. This increased the storage capacity of the high-bay warehouse by a further 4,920 pallet storage spaces to a total of approximately 12,500.

Thanks to the meticulous scheduling carried out by Kardex Mlog, the conversion work was completed in August 2020 after less than four months. "We've been working together with Kardex Mlog for more than ten years now and, during the most recent construction phase, our expectations with regard to the implementation were met in full," reports Kornel Betkowski, the TME specialist in charge of the extension project.

In this third phase, TME also opted for stacker cranes of type Kardex MSingle A600/23-ET. Unloaded, they travel at up to 60 meters per minute through the aisles and are controlled by state-of-the-art controls (PLC) of type Siemens S7-1500F and SEW Moviplc. This enables up to 57 single cycles or 35 double cycles per stacker crane per hour. Each operation and the current positions of the five stacker cranes and of the conveying technology are graphically displayed in the warehouse control center with TME's newly introduced visualization software Kardex MVisu. The software previously in use at TME was no longer compatible with the latest browsers and was also no longer supported by the manufacturer.



Smooth remote maintenance

Kardex MVisu has been developed by Kardex Mlog specifically for warehouse handling devices. Once purchased, the license is valid indefinitely and the number of users is unlimited. In conjunction with TeamViewer, the Kardex MVisu license forms the basis to ensure it is easy to remotely maintain the machines. Visualization takes place via a TCP/IP interface with the PLC and data exchange runs permanently. An integrated notification system with powerful filter and search functions completes the solution.

Each stacker crane has an on-board control box, which is fitted with a touch panel. This means that the stacker crane can be operated semi-automatically, manually, and in set-up mode. Cameras installed on the stacker cranes allow users to identify and localize any errors or disruptions during operations quickly and easily. The field of view of the cameras is illuminated for improved image presentation.

Cost-effective automation

The low-maintenance technology of the Kardex MSingle A enables a cost-effective automation variant coupled with high throughput performance and maximum space utilization.

The machines supplied to TME are 22.1 meters high and have a load capacity of 1,000 kilograms. The compact tubular mast construction and the absence of an enclosed operator platform means that the Kardex MSingle A weighs less than conventional stacker cranes. As a result, it was possible to fit smaller and more economical drives for the chassis and lift units. The slimline design also enables a narrower aisle width and very small approach dimensions for the chassis and lift units. A further design feature is the cable deflection at the column head: This is facilitated by two plastic pulleys fitted with roller bearings and ensures a longer service life of the lift cable.

Summary: With the second major extension of the automated high-bay warehouse at TME's central logistics center in Lodz, the long-term investment has (almost) reached its capacity limit. The current dimensions allow the distributor space for further growth. Nevertheless, the next expansion stage has already been planned: With the five currently active stacker cranes, the distribution vehicle deployed for transport of the pallets in and out has reached its limits. To increase throughput in this area, the distribution vehicle will be replaced by a continuous conveyor in May of 2022. Kardex Mlog has been awarded the contract.