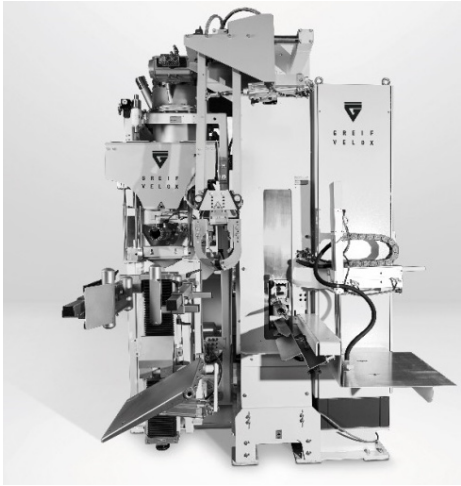
INTELLIGENT AND NETWORKED PRODUCT HANDLING FOR SMART FACTORIES

Application for the manufacturing industry



SUMMARY

The interconnection of product handling systems across manufacturers enables sensor-based horizontal and vertical integration in value chains.

CURRENT SITUATION

Nowadays, the filling line as the core component of a product handling system, robot palletizing systems, load securing, etc. all consist of systems fully monitored by sensors. The systems currently offered by Greif-Velox feature transparent representation of the respective system status in the customer network. They optimize themselves automatically on the basis of changed ambient conditions and process adjustments. Data transmission from running processes including process and quality parameters; faults, fault identification, capacity utilization, etc. are also transmitted.

PROJECT DESCRIPTION

Future system requirements will call for great flexibility in setting up new product types for packaging. Orders from the ERP system will have to be executed to perfection in the production systems. This also means that when errors occur in the filling process – for example when dosing times or the filling weight is changed – the process technicians on the shop floor are not only able to parameterize the filling line manually as was previously the case but also based on recommendations from Big Data analyses or data service technologies. Processes will be continuously optimized and adapted to further boundary conditions on the basis of networked sensors.

REFERENCES

www. greif-velox.de

INDUSTRIE 4.0 – FEATURES

Performance optimization through process optimization by means of sensors, mapping of customers' individual processes directly from ERP and MES, quality assurance services, remote services for various applications, flexible usability also with changing packaged goods.

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GREIF VELOX

SOLUTION

Industrie 4.0 approaches in product handling systems:

- Individual system components communicate as a cyber-physical system (controlled by a touch panel or mobile device)
- Data transmission from running processes including process and quality parameters, faults, fault identification, capacity utilization, etc. is implemented on a modular basis
- Integration into the customer network: the system is completely monitored by sensors and the system status is represented in a transparent fashion. Sensor data provides information for services such as quality control, documentation, etc. (e.g. torsion monitoring for barrel screw joint)
- Remote services for process optimization, e.g. when setting parameters to a new medium
- Sensor-based performance optimization services: optimum adaptation of processes to volatile ambient conditions

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STANDARDIZATION APPROACHES

Currently available open standards such as IO-Link, OPC UA, Profinet, etc. provide the basis for the entire communication of the factory components and connection of the factory to the outside world. This enables integrated communication and the replaceability of modular subsystems. An administration shell would be desirable as it would reduce the equipment required for establishing a system network.