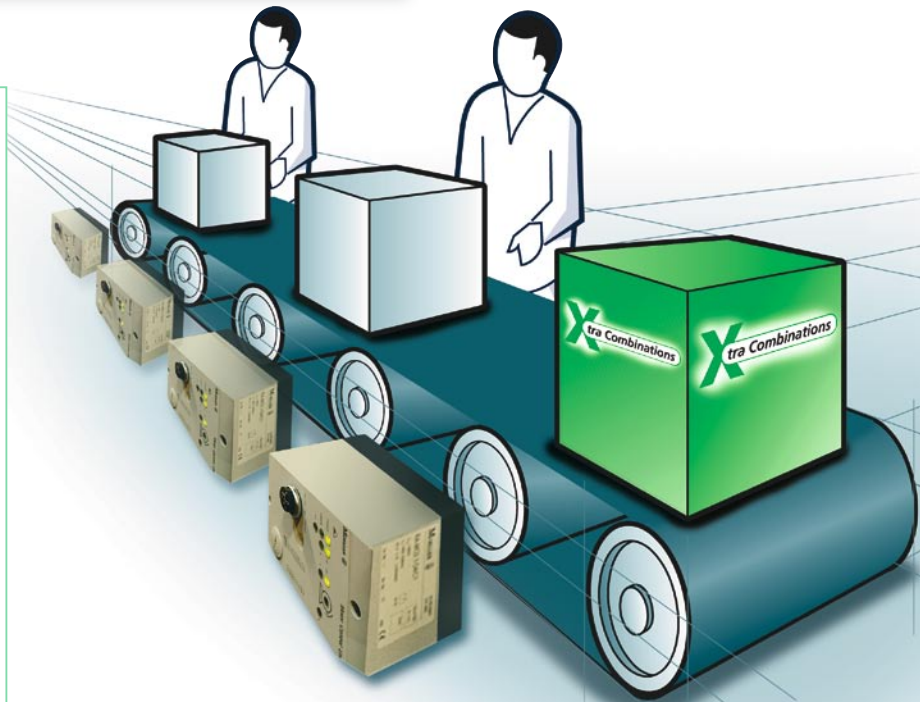


Rapid Link: Efficient Maintenance – Remote Starting



THE COMPANY

Gilgen Logistics Systems AG from Oberwangen, Switzerland, started up in 1967 as a supplier of part systems and components. In 1993 Gilgen Fördersysteme AG was founded and is still today a division belonging to Gilgen AG. Gilgen Logistics Holding AG was founded six years later. With the integration of the automation and IT division, Gilgen Logistics now offer total solutions for logistics applications, with activities in European and overseas markets. The Gilgen range covers all projects for conveying and storage systems, loading and special systems. Consulting, planning, engineering, development, construction, control, software, installation and training are some of the services available.



Materials handling projects have to be implemented within increasingly faster time frames. Rapid Link – the remote switching and installation system – is ideal for roller conveyors, buffer roller conveyors, belt conveyors, monorail and overhead conveying systems or skid conveyors and saves valuable time during installation, commissioning and maintenance. At the Coop's distribution centre in Wangen near Olten, Switzerland, automation components are used in the reusable container circulation system (roller containers and reusable containers). The buffered roller containers wait in the top floor for distribution in the individual conveying sections.

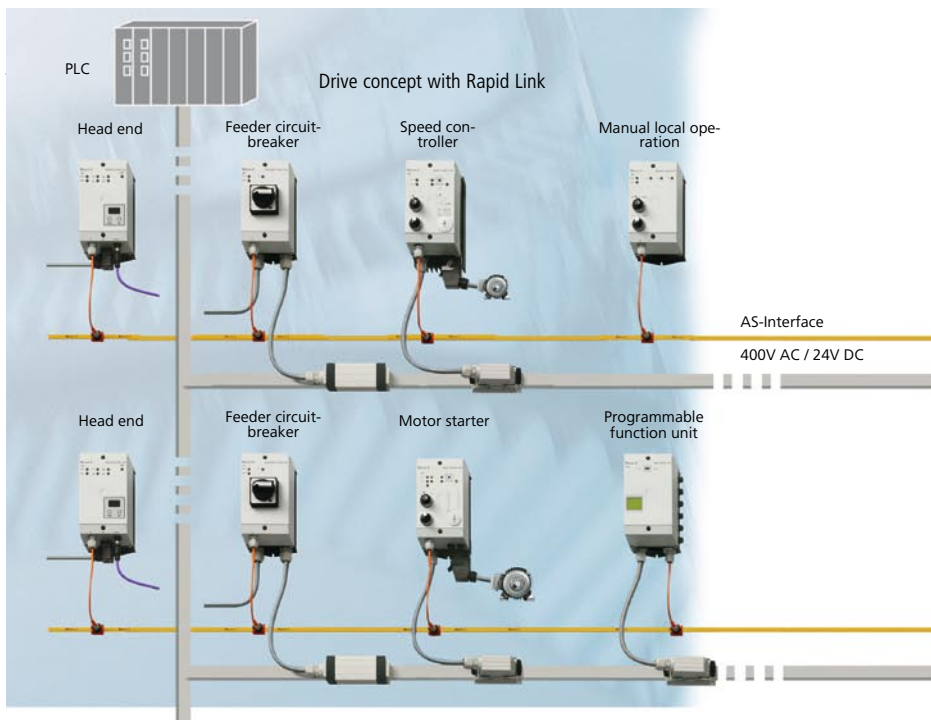


When the project was tendered for 5000 roller containers per day, Coop gave clear specifications as to the circulation capacity required. The roller container system has been successfully tried and tested in all branches so that hand-pallet trucks are no longer necessary. The engineering for the Coop project was carried out by Hayek Engineering. Gilgen Logistics was awarded the tender to supply the reusable container circulation system.

As Dipl. Ing. Othmar Neuhaus, manager of control engineering at Gilgen Logistics, said: "With this system we had to take some new approaches, and we were also under time pressure. AS-Interface, Rapid Link's data bus, considerably reduces the time required for engineering. What is more, the system can be commissioned in stages. This is a significant advantage since it means that every individual module of the conveyor section can be tested beforehand. We used over 100 motors in total.

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We keep power under control.



were controlled separately, whilst all belt conveyors of the horizontal sections were controlled by Rapid Link. All system sections are virtually tailor-made." Another clear advantage is explained by Dipl. Ing. Andreas Köstinger, responsible for hardware planning in control engineering at Gilgen Logistics: "The problem with conventional systems was that the control cabinet could not be planned until the drive solution had been clarified. With Rapid Link, however, we don't have to worry about this any more. Furthermore, thanks to the adjustable current range between 0.6 and 5 A, we could use the same motor starters everywhere. The entire sensor system is also connected to the motor starter. Additional slaves to process the sensor signals are no longer necessary."

The conveying system uses optical sensors to detect whether reusable containers are required or whether roller containers are being transported full or empty. Optimised utilisation of the buffer space was of key importance. This required the type of unit to be detected correctly: The decision which type of unit was to be sent on which section is made in the shuttle car. It has to be ensured that both types are available at the right time. If conveyed goods get jammed, this generates a timeout in the control system. It is now only a matter of disconnecting the appropriate

mechanicians set the priorities but don't interfere in the program structure: for example, this kind of program intervention allows the buffer area to be emptied immediately if required. The operators can disable certain areas or fill individual sections more than others using the appropriate operator units.

"Rapid Link meets our requirements for plug and play functionality to a very high degree," says Othmar Neuhaus. "That's also the reason why we based the system on the AS-i bus, since it is suitable for a wide range of sensors and actuators available on the market. We can also cover virtually the entire conveyor section with only two cables – one power cable and one data cable. Installation requirements are considerably reduced. The individual conveyor section modules are compact, both in terms of their mechanical design and the electrical system, and can be connected up together without any problems."

The Rapid Link series

Rapid Link is used in small and large materials handling systems, particularly in distribution and production logistics. It offers all the necessary functions (IP65) for switching and protecting spatially distributed drives remotely via Profibus-DP and AS-Interface.

The Rapid Link system requires few spare parts, is quick to install and easy to commi-

sion – around 50 drives per day are normally possible. The modular Rapid Link system includes a wide range of functionally tested units that are ready to connect:

- Head end (Interface Control Unit, interface to the open fieldbus),
- Feeder circuit-breaker (lockable with three padlocks, protected against overloads and short-circuits),
- Motor starter 3-phase electronic motor protection (value range from 0.12 to 3 kW),
- Speed controller (frequency inverter controls AC motors up to 3 kW, four fixed speeds and two directions of rotation),
- Manual local operation of material handling units and
- A programmable function unit (intelligent slave for stand-alone I/O processing).

A power bus system based either on a flexible busbar or round cable design is used to feed all the modules. The profiled cable (7 x 2.5 mm²) supplies the 400V AC voltage and the 24V DC control voltage. Load junction sockets can be installed at any point on a flexible busbar, and fault-free load junctions can be created using insulation displacement termination. The modules use IP65 plug connectors to ensure rapid module connection and exchange.

Quicklink ID:

CONCLUSION

Whilst the Coop previously processed 28 to 29 railway wagons a day with 14 to 15 employees, it now manages at least the same volume with only nine to ten. The new reusable container circulation system operates without any problems. Rapid Link ensures flexibility for the user. The system uses the AS-Interface, and is open for all standard fieldbus systems: With the Interface Unit providing the gateway solution, higher-level networks such as Profibus DP, Interbus, CANopen or DeviceNet can be installed using standard hardware. Apart from the gateway function, the Interface Control Unit also provides the AS-i power supply. RAPID LINK is thus a sound financial investment offering security for the future.

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