

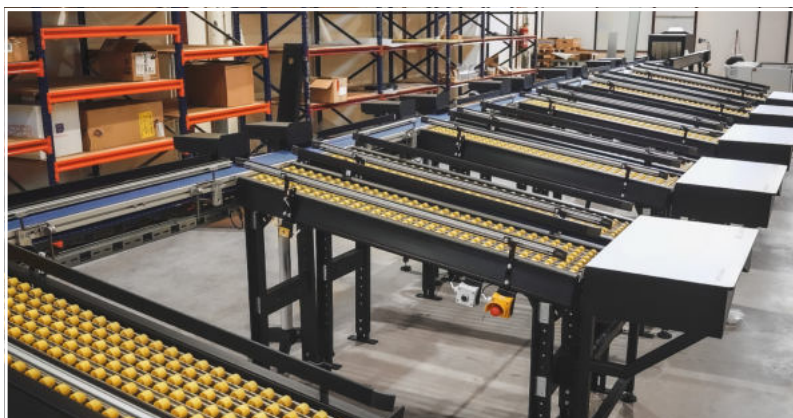


AS-Interface | Application

10/2023

## RIELEC: AUTOMATED PACKAGE SORTING WITH ASi-5

**Sorting 1800 cartons per hour to the correct vehicle for further transport by parcel services requires either a considerable number of people, or a flexible and cost-effective intralogistics solution like the RIELEC Fit Sorter package sorter, which relies on ASi-5 and ASi Safety from Bihl+Wiedemann.**



The RIELEC Fit Sorter package sorter can sort up to 1800 cartons per hour.

### RIELEC: AUTOMATED PACKAGE SORTING WITH ASi-5

With headquarters in Valencia, Spain, RIELEC (see picture above) represents a high degree of experience in industrial automation and intralogistics robotics. The internationally operating company has since 2015 developed and implemented intelligent solutions for intralogistics, RFID systems for the logistics sector, conveying systems and custom-tailored software solutions.

RIELEC consists of three business units: the brand RIELEC Logistics Systems, which deals with consulting, conception and production, installation and maintenance of material handling systems and industrial installations; CLUSTAG, the division for RFID solutions; and CODOPI, which is dedicated to the manufacturing of components for industry and design elements made of metal. When implementing projects, the focus of RIELEC is always the optimization of work processes with the goal of improving the efficiency of the logistic sequences of its customers. For this purpose, the company not only relies on the latest state of the art, but also on the integration of innovative technologies such as ASi-5.



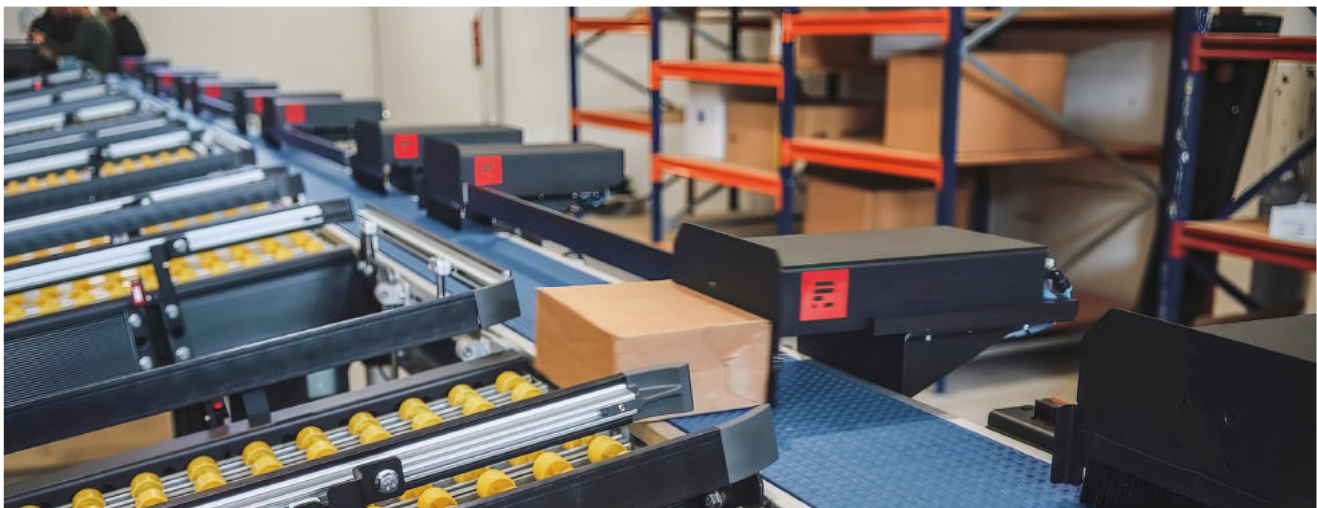
ASI-5 Motor Module BWU4246 (left) and ASI-5 Active Distributor for RGB stripes BWU4083 (right).

## AS-Interface at RIELEC

AS-Interface has long been recognized as an internationally standardized wiring system in intralogistics due to its high user comfort – simple installation, high functionality and flexibility as well as low cost. In this respect, it is not surprising that RIELEC implemented the first applications with ASI-3 motor modules from Bihl+Wiedemann as early as 2018 and now uses products from the German company in many of its machines. ASI-5 has been in use at RIELEC since 2020, as this new AS-Interface generation is a perfect fit to the requirements of RIELEC with respect to flexible automation concepts – keyword Intralogistics 4.0.

The ASI-5 technology from Bihl+Wiedemann enables not only configurable and expandable designs of the machine in the engineering phase, but also more flexible and therefore faster production processes, since AS-Interface allows both safe and standard signals to be simply integrated into the machines just where they are needed.

And because the efficient nature of the ASI-5 installation concept means that machines can be assembled and, when necessary, disassembled in a much shorter time with less effort and material, no additional connectors are required and programming and commissioning with AS-Interface is simpler than with other systems, thereby RIELEC is saving both installation and commissioning costs.



## RIELEC Fit Sorter package sorter

The RIELEC Fit Sorter package sorter is an application that can automatically transport many packages from the entry point to various stations in a short period of time. For example, it can be used in a logistics center to load many delivery vehicles from parcel delivery companies process and diagnostic information of the safe and standard nodes in the network and sends all control-relevant data for processing to the PLC. If necessary, it can also take over some of the tasks of the control itself, thereby unburdening the PLC. In addition, the gateway can also transfer data to a cloud, SCADA or ERP system via integrated OPC UA having different delivery districts. Packages marked with an SKU barcode (SKU = Stock Keeping Unit, article number) are placed one after the other on a conveyor belt driven by motorized rollers, scanned and provided with a tracking code.

They are then transported via a second conveyor belt to a defined discharge point, where they are pushed by pneumatic actuators from the conveyor belt and travel via roller conveyor to their final destination. For the Fit Sorter, RIELEC not only uses its CLUSTAG RFID solution, but also employs ASi-5 and ASi Safety solutions from Bihl+Wiedemann at many points in the application.

The RIELEC Fit Sorter can sort more than 1800 packages per hour. An operator first scans the SKU barcode of an article. The system then assigns it a tracking code, which it uses to travel throughout the installation to its destination. The package is then placed on a conveyor belt.



Conveyor belt with LED stripes and SKU barcode scanner (front) and CLUSTAG RFID technology.

ASi-5 motor modules for two 24 V motorized rollers of type BWU4246 control the motorized rollers driving this conveyor belt and thereby regulate speed and acceleration in the respective sections. Via an ASi-5/ASi-3 PROFINET Gateway model BWU3862, which monitors the ASi system, it is also possible to display the present voltage range. And to make the status of the package also visually distinguishable in different colors, LED strips are embedded at the edge of the conveyor line. These are controlled by the ASi-5 active distributors for RGB strips (BWU4083) from Bihl+Wiedemann.

In addition to tracking via the SKU barcode, an RFID control reading is performed using RIELEC's CLUSTAG RFID technology. This technology makes it possible, for example, to identify and correct incorrectly coded labels. This eliminates error sources and makes the data available to the system in real time, which in turn significantly increases the productivity of the application. After the RFID control reading, the respective package is transferred to a second conveyor belt having a large number of ejection points.

All these sensors and actuators along the conveyor lines are connected to ASi-5 self-configuring I/O modules BWU4231 from Bihl+Wiedemann for 16 digital I/O signals. This allows all data required by the RIELEC Fit Sorter along the conveyor line to be collected and the article to be ejected at the appropriate point. Once the package has been ejected, it is transported via a roller conveyor to its final destination.





The active distributor ASI Safety (BWU3599) from Bihl+Wiedemann permits implementation of safety applications up to SIL3/PLe.

In the RIELEC Fit Sorter, however, AS-Interface is not only used for the conveyor technology and pneumatics, but also for safety technology. In order to equip operator stations with the necessary means for safe and continuous operation, ASI Safety active distributors model BWU3599 are used for the required safe signals, enabling implementation of safety applications up to SIL3/PLe. The main element of the AS-Interface technology in the RIELEC Fit Sorter is the ASI-5/ ASI-3 PROFINET Gateway BWU3862 with integrated safety monitor from Bihl+Wiedemann.

It collects the process and diagnostic information of the safe and standard nodes in the network and sends all control-relevant data for processing to the PLC. If necessary, it can also take over some of the tasks of the control itself, thereby unburdening the PLC. In addition, the gateway can also transfer data to a cloud, SCADA or ERP system via integrated OPC UA server to make it available for Industry 4.0 applications, for example.

The Fit Sorter package sorter from RIELEC is an example of how innovative technologies such as CLUSTAG-RFID and ASI-5 can help to make intralogistics processes more flexible and make them as efficient as possible for customers.



ASI-5/ASI-3 PROFINET Gateway BWU3862 with integrated safety monitor (left) and ASI-5 self-configuring I/O modules BWU3884 in IP20 (right) from Bihl+Wiedemann.



Using the ASI-5 self-configuring I/O modules BWU4231 from Bihl+Wiedemann, optical sensors and pneumatic actuators are integrated for the ejection of packages.