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Truck's BL ident RFID system ensures the right transparency in the high bay warehouse at the Baisha Group

Seeing through the Smoke

BL ident improves warehouse management in Chinese cigarette factories

No other country in the world produces more blue smoke than China. With a consumption rate of 1.5 billion cigarettes per year, the Chinese make up about 30 percent of the world's cigarette consumption. Although foreign tobacco companies are represented in China, the national cigarette brands still have the largest market share. Among the most famous brands is Baisha, which, among Chinese smokers, is comparable to Marlboro in Western countries.

For the company's plan to modernize their warehouse management system and to restructure their supply chain management to make it more efficient, the Baisha Group placed its trust in the automation know-how of China Post Science and Technology Co., Ltd. (CPST). The company, headquartered in Beijing, employs more than 400 people in research, consulting, and system integration.

Its scope of services includes the planning and integration of logistics and distribution systems, as well as the implementation of higher-level information and control systems. In the past few years, CPST's research and development center has also supported the Chinese government in modernizing the postal services country-wide and, in this context, completed more than 800 individual projects for RFID applications, including high-speed sorting systems and horizontal conveyor belts.

Challenge of diversity

The diversity of the products used in cigarette production quickly turned into a major automation challenge. This is because in a large tobacco factory, like



Simple assembly: Most read-write heads are available in the standard sensor configuration



Turck total package: BL20 remote I/O system (l.), engine starter (m.) and BL ident Profibus Gateway (r.)

the Baisha plant in the province of Hebei, numerous cigarette brands are produced and the multiple components of the various end products have to be constantly stored in large amounts. These include different tobacco types, cuttings, aromas and other additives, in addition to the different packaging.

In 2007, in order to structure the intralogistics of the tobacco factories more efficiently, CPST introduced the BL ident RFID solution from Turck into its numerous production facilities - besides the Baisha Group, other firms such as Jinan General Tobacco Company and Shandong Qingzhou Tobacco Company used CPST's consulting services.

The RFID technology offers plant operators many benefits in supply chain management, regardless of the respective warehouse equipment. In contrast to the previously used barcode, which enables the commodity group (e.g. tobacco container) to be identified based exclusively on a serial number, the RFID tags with a memory capacity of up to 2 kByte (FRAM) can also record relevant information such as batch, receipt date or the most recently performed processing steps.

“No programming effort”

The BL ident system, which is sold in China by the company's subsidiary Turck (Tianjin) Sensor Co. Ltd., has proven itself not only in terms of uniform information management, but also as a manageable and comprehensive solution. The modular configuration of the RFID system convinced CPST employees and warehouse operators very quickly: “The Turck products were very easy to implement,” says Cunyu Li, responsible at CPST for electrical installations. “Connecting it to the controller was very easy and there was practically no additional programming effort. I would not have thought so beforehand.”

In order to modernize and make warehousing and intralogistics more efficient at the Baisha Group, the CPST project manager opted for Turck's Q80

read-write heads and the reliable BL67 remote I/O system. Mounted directly adjacent to the transport belts, the Q80 read-write heads detect the tags attached to the transport containers of the incoming and outgoing warehouse goods. The read-in data is subsequently forwarded from the gateways of the I/O nodes via Profibus to the higher-level warehouse management system

Optimized to the application

For system integrators and users, the Turck complete solution offers numerous advantages: The flat tags can be easily attached to metal, the combination of suitable tags and read-write heads permits application-optimized ranges from the read-write head to the interface module, the robust components are uncomplicated to install on-site.

Moreover, the BL ident system makes future expansions in supply chain management possible. The system supports many fieldbus protocols – from Profibus-DP to DeviceNet and even Ethernet/IP – as well as numerous signal forms, such as digital and analog I/O modules, RS232/422/485 interface modules and high-speed counter modules. BL ident allows warehouse operators to also fall back on existing remote I/O structures in case of future automation plans – and thereby avoid additional implementation and warehousing costs ■

▶ Quick read

As an external system integrator, China Post Science and Technology Co., Ltd. (CPST) creates strategies for increasing efficiency for numerous Chinese companies. In order to improve warehouse management at national cigarette factories, the specialists have been using the BL ident RFID solution from Turck.



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Cunyu Li,
China Post Science and
Technology Co, Ltd.