

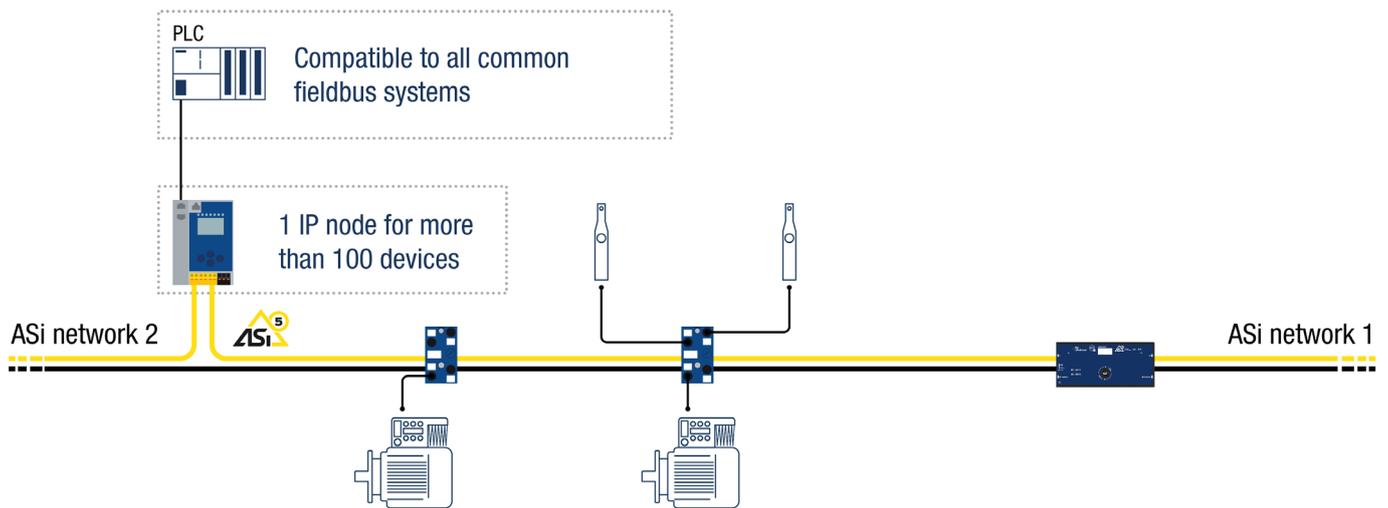
Technology | Application

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## ZPA AND AS-INTERFACE: SMART SOLUTION FOR CONTROLLED MATERIAL FLOW

**Setting up buffer and accumulation units for a stationary material flow system - and implementing it regardless of the drives used, without any complex PLC programming and scalable as desired from the simple straight conveyor line to systems with multiple infeed and outfeed points to stand-alone solutions with safety technology. This is possible with Zero Pressure Accumulation (ZPA) using AS-Interface and an intuitively operable software from Bihl+Wiedemann.**

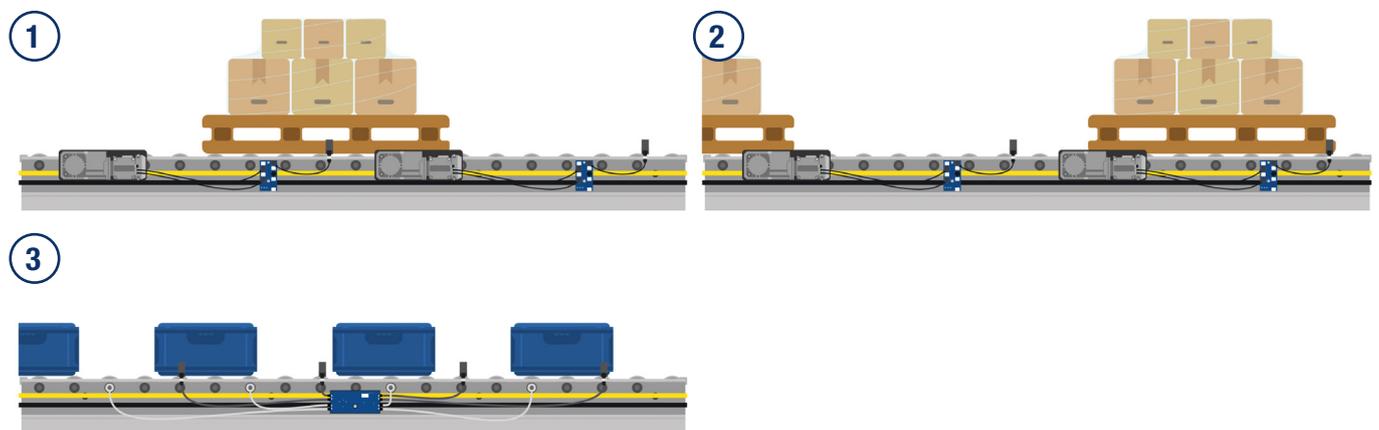
With this ZPA functionality, the solution for zero pressure accumulation, Bihl+Wiedemann has expanded the wide range of drive solutions that the company already offers - as a system provider for ASi-3 and ASi-5 - including modules for motorized rollers, DC motors and frequency inverters made by many different manufacturers and having various performance classes. The ZPA logic is a smart and cost-efficient add-on for AS-Interface topologies, as found in many places in the material handling. It is compatible with the ASi-5/ASi-3 fieldbus gateways from Bihl+Wiedemann that are now employed in many commonly used fieldbuses such as PROFINET or EtherNet/IP. To ensure easily understandable and convenient configuration and parameterization, the ASIMON360 and ASi Control Tools360 software suites – the latter without integrated safety functionality – are also available. Default settings ensure fast implementation of zero pressure accumulation without any special prior knowledge, in-depth programming know-how or a manual. Though experts have the option of making additional detailed settings via the user-friendly graphic interface if required. As with all the new gateways and ASi-5 products new functions can be subsequently integrated via update you can also update with new functions – making the ZPA solution from Bihl+Wiedemann especially future-proof.



Bihl+Wiedemann's ZPA solution works independently of the PLC and drive solutions used in the system

### Buffer sections improve the performance of conveying systems

The greatest possible and most even utilization of conveyor lines and stations, sustainability of a non-continuous feed, targeted accumulation of objects when there is a temporary interruption in the system, preventing damage from bumping of conveyor materials, simpler handling by creating gaps between objects – there are many different reasons for creating zero pressure buffer sections in stationary material flow systems. The targeted buffering and removal of conveying goods increases the performance of conveying processes while also making them more energy efficient. Because drives in zones and buffer sections where there are currently no materials can be temporarily turned off. AS-Interface has also established itself as an internationally standardized wiring system in modern conveyor and material flow technology. The ZPA solution from Bihl+Wiedemann offers the possibility here to set up zero pressure accumulation conveying for a wide variety of conveyed goods, such as cartons, totes or pallets, without PLC programming effort and independently of the drive solutions used in the system.



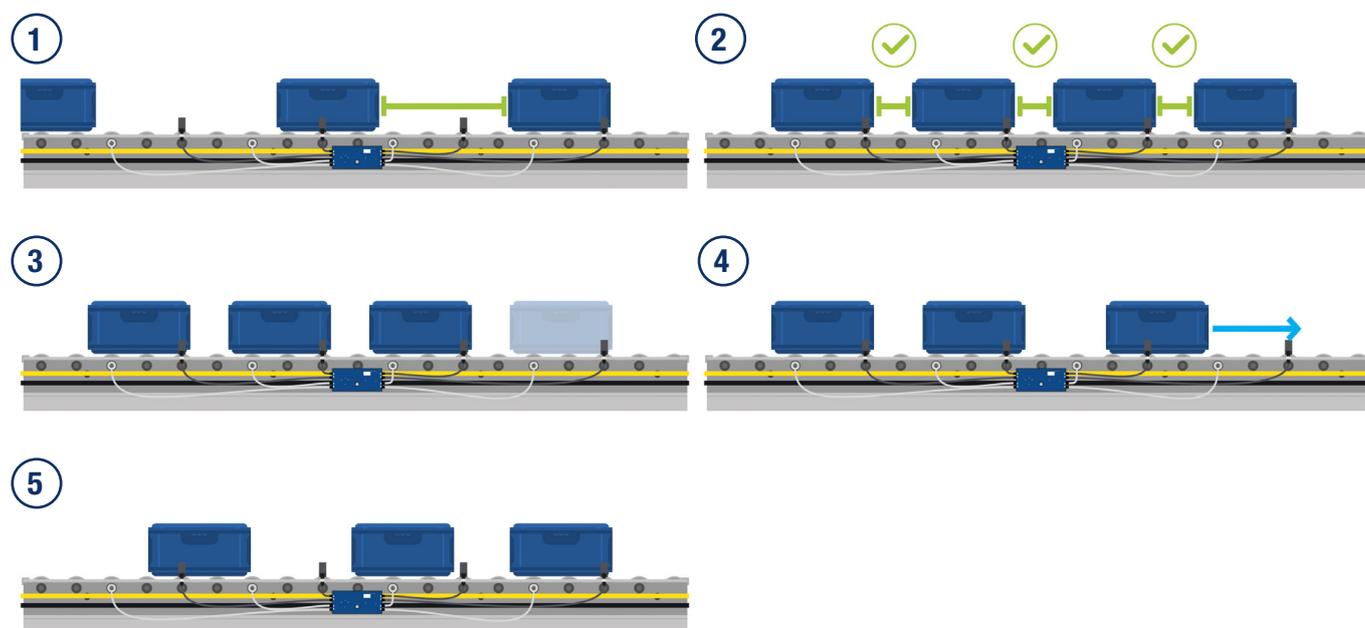
ZPA with modules for motorized rollers, DC motors and frequency converters from different manufacturers

### ZPA: Smart functions for efficient material flow

The essential task of zero pressure accumulation technology is to coordinate the flow of the conveyed objects between the insertion and removal points including accumulation sections and buffer zones – while still guaranteeing that there are no collisions or pressure on individual material goods. Accumulation management is implemented within defined zones of the conveying line which communicate with each other. A material good is held back in a zone until the following section is declared “free” by the logic.

Zero Pressure Accumulation with Bihl+Wiedemann enables autonomous and PLC independent material handling with detailed and fieldbus independent diagnostics. The heart of this solution is always an ASi-5/ASi-3 gateway. This serves on one hand as a single, universal configuration interface for all the modules in a zero pressure accumulation line, and on the other hand as a diagnostic interface – using any common fieldbus to the OT, but thanks to OPC UA also to the IT.

Regardless of whether dealing with basic functions such as speed, start and stop ramps, or the conveying direction or with expanded functionalities such as lag times, watchdog times for missing conveyor objects or block removal – with the zero pressure accumulation technology from Bihl+Wiedemann, many things are possible. And to keep things as simple as possible for the user, basic settings are already stored, though they can of course be individually expanded and adjusted when needed. Selecting hardware, setting parameters, enabling functions, loading and starting a configuration – the solution from Bihl+Wiedemann is convenient enough to implement zero pressure accumulation quickly and simply. At the same time it offers functional granularity that allows users to adapt their ZPA application precisely to their requirements and visions.



ZPA solution from Bihl+Wiedemann for Zero Pressure Accumulation

## ZPA uses broad ASi portfolio for material handling and material flow technology

Bihl+Wiedemann has put together a wide range of products and solutions for automating storage and material flow systems, conveying and sorting equipment, shuttle-pallet warehouses, picking systems, storage and retrieval machines and cranes. It includes for example ASi-3 and ASi-5 modules for roller drives with 24VDC or 48VDC supply and from manufacturers like Interroll, Itoh Denki and RULMECA. Also offered are modules for AC motors with frequency converter such as made by Lenze, SEW-EURODRIVE or NORD DRIVESYSTEMS – the standards for drives in countless conveying technology systems.

The zero pressure accumulation technology from Bihl+Wiedemann can be used for all these drive systems, or when needed also together with other manufacturers and drives. It makes no difference whether the system is equipped with a single drive solution or with mixed systems – the manufacturer-independent ZPA solution operates the same everywhere. The advancement of the ZPA solution by Bihl+Wiedemann and the associated expansion with further ASi gateways and modules, new functions and modes as well as integration of ASi Safety is therefore simply a techno-logical consequence.

### AS-Interface: favorite wiring technology for transport systems

Long stretches, any number of sensors, switches, measuring devices, scanners, drives, control panels and safety systems, simultaneous collection of standard and safety signals – stationary material flow systems represent an environment virtually made for the AS-Interface wiring technology. The simple installation – nodes are simply and reliably connected to the yellow ASi cable with its piercing technology – the great functionality and flexibility of the technology as well as its low costs and superior user convenience have all contributed to the leading role in stationary material handling and material flow technology played by ASi-3 and, since its introduction three years ago the new ASi-5, as the internally standardized wiring system.