

GEORG SCHLEGEL GmbH & Co. KG

IO-Link for standardised operating unit

How Springer Maschinenfabrik, in collaboration with SCHLEGEL, standardised acknowledgment stations and reduced its engineering workload

Less wiring, fewer variants, greater flexibility: Together with SCHLEGEL, Springer Maschinenfabrik has converted its acknowledgment stations to a standardised IO-Link solution. This reduces installation effort, simplifies project planning and assembly, and creates a uniform platform for different machine concepts.

Springer Maschinenfabrik GmbH has been an integral part of the Austrian mechanical engineering landscape since 1952. The family-run company, based in Friesach in the Austrian province of Carinthia, is a global manufacturer of machinery and equipment for the sawmill and wood-processing industries. Its portfolio ranges from log and sorting systems to transport and grading systems, automation, robotics, and digital solutions, covering far more than traditional mechanical engineering. As a manufacturer of specialised machinery, the company must implement individual customer requirements cost-effectively. This makes standardised solutions that can be flexibly adapted to different machine concepts all the more important.

Hard-wiring has its limitations

The joint project with SCHLEGEL focused on acknowledgment stations on safety guards. These are used to deliberately confirm an operation or status, for example after a safety guard has been closed. This acknowledgment does not mean access control, but is part of a defined operating sequence that enables the safety guard to be released.

Until now, Springer had relied on traditional hard-wired acknowledgment stations. Each switching contact of a pushbutton or selector switch was individually routed to the control system. While this method is reliable, it increases the installation effort for more complex machines. Each additional function requires more cables, terminals and documentation. Furthermore, more acknowledgment stations need to be designed, assembled and stocked. Changes to functionality often require modifications to the wiring.

IO-Link simplifies installation and engineering

Since IO-Link was already established in the systems, it made sense to integrate the acknowledgment units into the communication concept. The serial point-to-point connection enables multiple digital signals to be transmitted in both directions.



Caption:

In collaboration with SCHLEGEL, Springer Maschinenfabrik has converted its acknowledgment stations to a standardised IO-Link solution.

Photo: Springer Maschinenfabrik

In this specific application, three acknowledgement stations can be connected via a Class A IO-Link port using just three wires. Compared to conventional hard wiring, the wiring and installation effort is significantly reduced. Furthermore, the M12 connection technology used in the IO-Link environment simplifies installation. Internal machine cabling can be carried out quickly, without the need for complex wiring, and does not require specialist personnel. The integrated diagnostic functions of IO-Link enable rapid fault analysis via the system's parameterisation interface. In the acknowledgement station developed by SCHLEGEL, the evaluation function can detect lamp failures and monitor the switching cycles of the control elements.

This solution also offers advantages in engineering. Functional adjustments can now often be implemented via the control software, eliminating the need for changes to the wiring or hardware. This simplifies the planning of new projects and subsequent adjustments in the field.

"We had reached the limits of hard wiring. IO-Link has significantly reduced our workload and given us greater flexibility. Since IO-Link was already in use in our systems, it made sense to integrate the acknowledgement stations via this interface as well," says Reinhold Danner, Head of Automation at Springer.



Caption:

One solution rather than a multitude of variants: Springer is opting for a standardised acknowledgement station that covers a range of use cases. Photo: Schlegel

One solution instead of a multitude of variants

At the start of the project, enclosure variants with two or three mounting positions were under discussion. However, during progress of the development, it quickly became clear that each additional version would increase the workload in terms of design, manufacturing, documentation, and stock management.

The decision was therefore made to opt for a standardised acknowledgement station with three mounting positions. The additional financial outlay compared with a two-position version was minimal, while the added benefit was significant. The standardised acknowledgement stations covers a range of applications, eliminating the need to develop or stock different variants. This reduces complexity throughout the entire product life cycle.

Two normally open contacts per acknowledgement station for flexible interchangeability

The contact configuration has also been consistently standardised. All mounting positions are equipped with two normally open contacts as standard. Whilst a single contact is often sufficient for a pushbutton, two switching contacts are used, for example, in three-position selector switches.



Press Release

This allows control units to be flexibly interchanged at a later date without any changes to the wiring. The hardware platform remains unchanged; only the control unit used is adapted to the respective application. This simplifies project planning, maintenance and servicing.

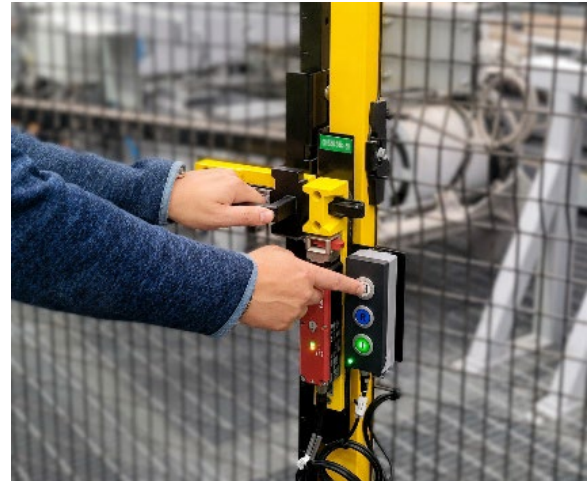
Adapted for use on safety guards

As the acknowledgement stations are used on safety guards, design details have also been adapted. At Springer's request, the enclosure can now only be opened or dismantled using a tool. This prevents the acknowledgement station from being accidentally removed or opened. However, maintenance work remains easily possible thanks to the standardised M12 connector.

Development in just a few weeks

The new solution was developed in close collaboration between Springer and SCHLEGEL. It took just a few weeks from the initial concept to the prototype. This rapid availability made it possible to test the acknowledgement station under real-world operating conditions and to further develop them jointly. The IO-Link-based solution has been in series production since the end of 2024.

"The collaboration was close, hands-on and fast-moving. Our feedback from the field tests was incorporated directly into the ongoing development. SCHLEGEL didn't simply supply us with a product, but worked together with us to develop the right solution," concludes Reinhold Danner.



Caption:

A collaborative and swift approach led to the development of the right solution through a joint process.
Photo: Springer Maschinenfabrik

Practical benefits and conclusion

In practice, the benefits of the new acknowledgement stations are evident on several levels: the amount of wiring required is significantly reduced, as multiple acknowledgement stations are connected via IO-Link. The standardised platform reduces the number of variants in design, manufacturing and spare parts management. At the same time, functional changes can be implemented in the software without having to modify the hardware.

This example illustrates how standardisation and digital connectivity complement each other effectively: a uniform hardware platform reduces complexity, whilst IO-Link provides the necessary flexibility for different machine designs. This approach simplifies engineering, assembly and servicing, particularly for manufacturers of specialised machinery.

Further photos

Press Release



Caption:

As several acknowledgement stations are connected via IO-Link, the amount of wiring required is significantly reduced.

Photo: Springer Maschinenfabrik



Caption:

Thanks to the established M12 connection technology, no specialist personnel is needed to carry out the cabling.

Photo: Schlegel

Contact details:

Georg Schlegel GmbH & Co. KG
Wolfgang Zoll
Kapellenweg 4
88525 Duermentingen
Phone +49 (7371) 502-0
Fax +49 (7371) 502 49
www.schlegel.biz
vertrieb@schlegel.biz

Media contact:

Georg Schlegel GmbH & Co. KG
Bruno Jungwirth
Kapellenweg 4
88525 Duermentingen
Phone +49 (7371) 502-0
Fax +49 (7371) 502 49
www.schlegel.biz
bruno.jungwirth@schlegel.biz

For publication, free of charge. Specimen copy or indication requested.

About Georg Schlegel GmbH & Co. KG

Press Release

Schlegel stands for innovation, quality and design. Founded in 1945, Schlegel is today a globally operating company with headquarters in Germany, sales offices in Austria, China, USA and Singapore, and exports to more than 80 countries on all five continents. The core competences: Development and production of control units, pilot lights and terminal blocks. The product portfolio further includes bus systems, enclosures, control panels and functional components. When developing new products, Schlegel sets high standards as to the design. More than 100 national and international design awards confirm the company's high level of design expertise, among these prizes are the iF Design Award, the Red Dot Award, the Good Design Award and the German Design Award.