
13:50
Mold Basic Settings

100 meter data-dash

More and more often, groups of machines are being integrated to form complex production systems. These systems need solutions in place that allow workers to operate them efficiently and ergonomically. This creates two challenges for machine builders: Not only must data be transferred over longer distances, the cables must also be compact enough to be routed through swing arm systems. With Smart Display Link 3 (SDL3), B&R now has the perfect technology to meet both of these challenges.

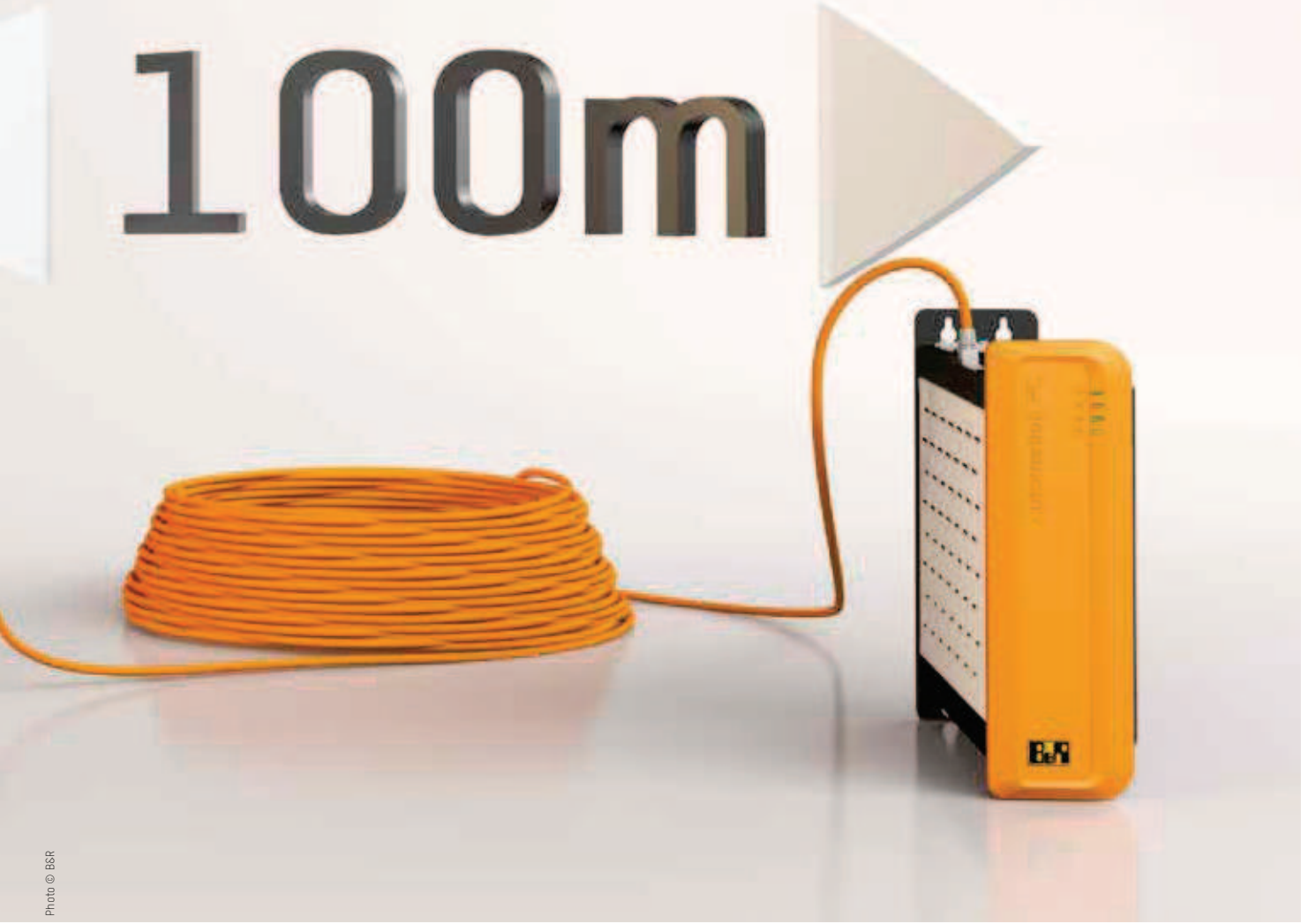
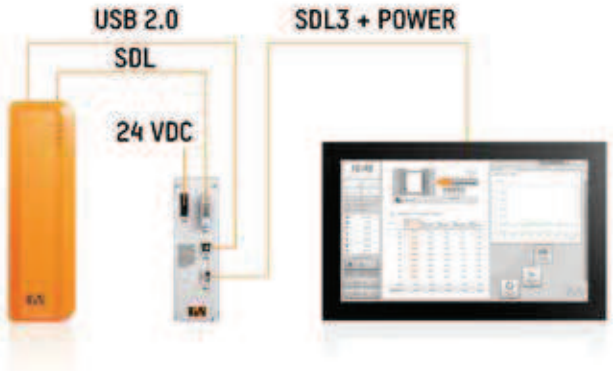


Photo © B&R

The Automation PC910 can be equipped with an optional SDL3 card.

If 24 VDC is already being supplied, the Automation Panel can be connected directly to the Automation PC 910 via SDL3.



The SDL3 converter can be connected to any Automation PC. Power is supplied to the Automation Panel via SDL3, so only a single cable is needed, which is optimal for swing arm systems and routing through tight openings.

SDL3 makes it possible to operate a panel up to 100 meters away from an industrial PC using a standard Ethernet cable. This allows HMI devices to be installed precisely where they are needed, even on large machines. This technology does not require the panel to be equipped with PC architecture. No CPU, memory or operating system is needed. SDL3 transfers image data uncompressed and in resolutions up to full HD. The image data is not converted or processed on the panel, so the display shows the content at the same speed and quality as it is generated by the industrial PC graphics unit.

To make operation as ergonomic as possible, machine manufacturers often mount the HMI unit on a swing arm system. With swing arms, the size of cable and the dimensions of the connector are crucial factors. SDL3 has a clear advantage compared to conventional DVI cables: The standard Ethernet cable with RJ45 plug can be easily routed through narrow openings. CAT6 or CAT7 cables are used, which have low acquisition costs and can be assembled onsite if necessary. In swing arm systems, it was previously often necessary to use thin clients with a full-fledged PC design. They took up more space and were also dependent on software drivers and operating systems.

Independent of the operating system

B&R began as early as the 1990s to connect panels to industrial PCs via a digital interface – long before DVI became an established standard. Since DVI was designed purely as a display connection, B&R set off on a new path 10 years ago with Smart Display Link (SDL). SDL transfers data to the panel over a distance of up to 40 meters using a special dual-DVI cable. From the very beginning, B&R's transfer technology

Raimund Ruf
Business Manager HMI, B&R

"With SDL3 and the sleek RJ45 connectors, difficulties wiring swing arm systems are a thing of the past."

SDL3 is compatible with all previously delivered Automation Panel 900 devices. This platform, which has been installed in the field for over 10 years, can be easily adapted to SDL3 in the course of retrofitting work thanks to the modular interface.

The advantages

- Spans up to 100 m
- Independent of operating system and software drivers
- Simple and inexpensive wiring
- Optimally suited for swing arm systems
- 10-year backward compatibility

provided unprecedented easy handling and complete independence from operating systems and software drivers.

The third generation of this digital display transfer technology opens up a new chapter in the Smart Display Link success story, offering both added functionality and considerably simplified handling. Upgrading from SDL to SDL3 can pay off starting at cable lengths as short as 10 to 15 meters. Like SDL, SDL3 transfers not only display data, but also the communication channels for the touch screen, LEDs and keys as well as service data such as the backlight brightness setting. In addition, the bandwidth of the integrated USB connection was increased so that SDL3 now also transfers USB 2.0 data. This allows operators to transfer recipe data from the panel to the industrial PC much more quickly.

Not only does SDL3 transfer all communication data between the industrial PC and the Automation Panel using a single cable; it can also handle the power supply for the panel. This is done using an SDL3 converter connected between the PC and the panel. This type of cabling is ideal when only supplying the panel and its membrane keys and LEDs.

Particularly when installing panels on swing arm systems, cabling is considerably simplified by using a single cable without the additional 24 VDC connection.

If additional mechanical switching elements such as hard-wired push buttons, key switches and E-stop buttons are also present and there is already a 24 VDC supply on the panel, an Automation PC 910 with integrated SDL3 transmitter may be a well-suited option.

10-year backward compatibility

The transmitter can be integrated as an option with the new Automation PC 910. All other Automation PCs can establish a connection via SDL3 using the external converter. Like B&R's panels themselves, SDL3 technology is also modularly designed. This allows all previously delivered Automation Panels to be connected via SDL3 using a corresponding display link module. Software adjustments are not necessary, even for 10 year old panels. Assembly is very simple and can be done on-site. Panel PCs and Automation Panels can of course also be connected via SDL3. The type of touch technology being used doesn't matter; SDL3 supports both projected capacitive multi-touch panels and analog resistive touch screens. This is a significant difference to the extenders currently available on the market, which only transfer display and USB data. ←