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## HIGH-USABILITY SAFETY SOLUTION

### New opto-electronic safety device with Bluetooth interface and app

Safety light curtains and grids are perfect for securing a wide range of hazardous areas in production, including robot cells, die casting machines and palletising systems. At the SPS 2019 specialist fair in Nuremberg, the Schmersal Group this year showcased its first safety light grids with built-in Bluetooth interface.

The benefits of contactless safety equipment (AOPD), such as safety light curtains and grids, are clear: The user has a view of the entire work area, and people can avoid protective doors or other separating equipment. The photoelectric contactless protective device becomes even more flexible through additional functions. For example, it can differentiate between people and material, so that the material flow is only interrupted if a hazardous situation arises. This leads to higher system performance and productivity.

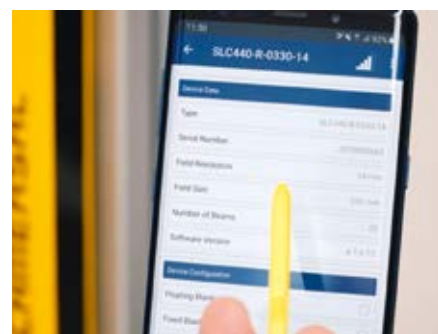
An innovative safety solution that Schmersal presented for the first time at the trade show SPS 2019 in Nuremberg, Germany, promises further improvements in efficiency: this is a new opto-electronic safety system with a BLE interface. BLE stands for Bluetooth Low Energy, a radio system for near-field data transmission with secure transmission. The Bluetooth interface means all status and diagnostic data on the status of the SLC440 / 440COM series light grid can be accessed in real time on smartphones or tablets, meaning problems can quickly be resolved and higher levels of machine availability can be achieved. This status information and diagnostic data enables processes to be reactivated more quickly, particularly in the event of a system shutdown if a hazard is detected," explains Klaus Schuster, Managing Director of Safety Control GmbH, the centre of excellence for opto-electronics within the Schmersal Group. The data is communicated to smartphones/tablets via an app developed by Schmersal which users can simply download from the relevant app store for either Android or iOS devices.

#### BLE means wide range

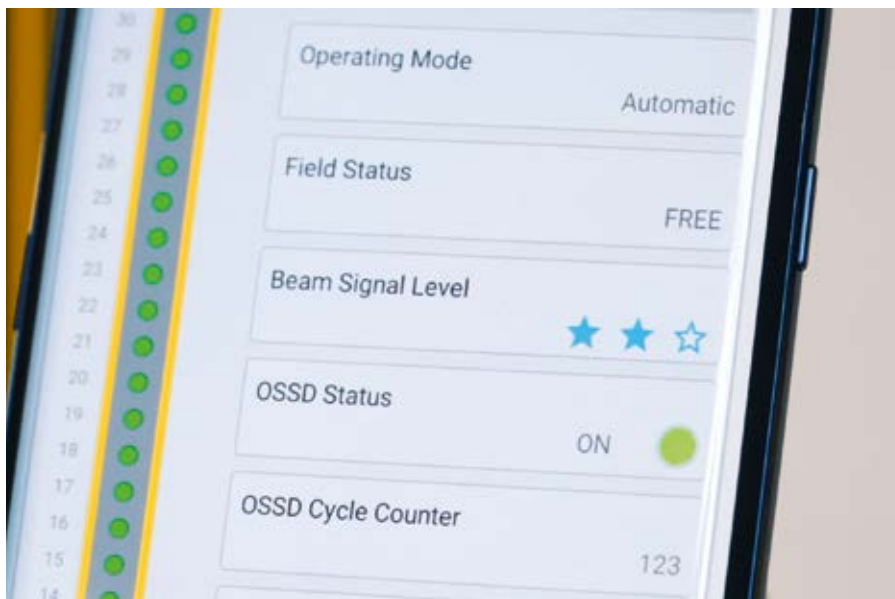
This innovative AOPD system technology is unique with respect to the range over which the data can be communicated. Until now, only a limited few diagnostic tools based on NFC technology have been available on the market. NFC uses very short range radio waves for data exchange between two devices. By contrast, BLE uses small wireless antennas to communicate with smartphones or tablets. This results in a significantly greater range. (NFC range: a few centimetres, BLE range: up to 5 metres) This means the BLE interface is perfect when the opto-electronic safety system is in a relatively inaccessible position.



All status and diagnostics data about the operating status of the safety light grids can be accessed simply and in real time via a smartphone or tablet.



The app provides basic data on each individual light grid, including the serial number and the protective field resolution.



**Images:**

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Practical set-up guide: The app shows the quality of the alignment and of every single beam.

**Simple and quick to set**

The system comes with a really handy set-up guide which makes setting up the opto-electronic safety equipment significantly easier. The light grid consists of a transmitter unit and a receiver unit which need to be aligned to each other. The app not only shows the general signal strength, but also the quality of each individual beam. If only one star is flashing, the alignment quality is insufficient. If all three stars are displayed, the alignment is perfect. As the status and quality of each individual beam is also displayed in the app, they all light up in green if the sensor alignment is optimum.

As soon as the app is started, it lists all the safety light grids in range. Basic data is provided for each individual device, including the serial number and the protective field resolution and height for the light grid. As the users can assign individual names to the available light grids, it is easy to identify the devices the signals are coming from. The display of the device status is particularly important: users can view the mode, the status of OSSD outputs and the status of the protective field. They are also given information about the supply voltage connected.

Unforeseen operating statuses are also reported via the app. If an error occurs, one option is to access the operating instructions on the app to resolve the problem. This also provides handy support on an everyday basis. If the protective field is broken, the user is notified in real time. The user is also informed about the number of switching cycles, so they can use this information to plan service cycles for safety relay modules: the intervals for repeat inspections can be defined based on the actual operating hours incurred.

**Reduced energy consumption**

This innovation is also interesting from a financial perspective, as compared to classic Bluetooth, BLE is characterised by considerably lower energy consumption and reduced costs at a similarly high communication range. And because Bluetooth is an industry standard, the BWS Series 440 / 440COM with BLE interface can be used all over the world.

A key advantage of this safety solution is that the device status and other information can simply be saved and archived on the smartphone. This makes documentation in accordance with the operational safety ordinance massively easier, and the data can be used in repeat inspections for the purpose of predictive maintenance. Status data can also be sent by e-mail.

“We are convinced that this innovation will have real added value for users on an everyday basis. It gives them full visibility of the device status of their opto-electronic safety systems, keeping them under control and allowing quick resolution of faults. This is an advantage which cannot be underestimated when it comes to the smooth running of processes,” adds Klaus Schuster.