



## Omron's F3SG-SR Series safety light curtain helps OEM's customers minimize downtime while improving purlin stacker safeguarding

A machinery engineering and manufacturing company specializing in roll forming machinery and tooling needed to upgrade its system for protecting workers in the vicinity of its purlin stacker. This type of machine handles and stacks extremely large, heavy steel purlins as they come off the end of a steel forming line so that the product can be offloaded by a forklift operator.

There are many hazards associated with purlin stackers, including multiple heavy-duty, high-load, sprocket-driven chain conveyors, high-load scissor lifts, high-force pneumatic and electromechanical positioning actuators and an array of large-horsepower AC motor-driven drive shafts. All of these

components work to position and stack the large steel purlins as they emerge from the forming line.

As if adequately addressing the safety of this equipment were not enough, every second of downtime corresponds to fewer purlins produced, which means less revenue to plant operations. Consequently, the old days of configuring an E-stop circuit to shut the entire process down are long gone. Today, multiple safety devices of various types guard the machine and feed into a safety controller that controls the entire process.

### Business need

A company in the metal forming industry needed to find the right light curtain to safeguard a protected range of 55 feet around a purlin stacker while meeting tight deadlines and maximizing its customers' uptime.

### Unique solution

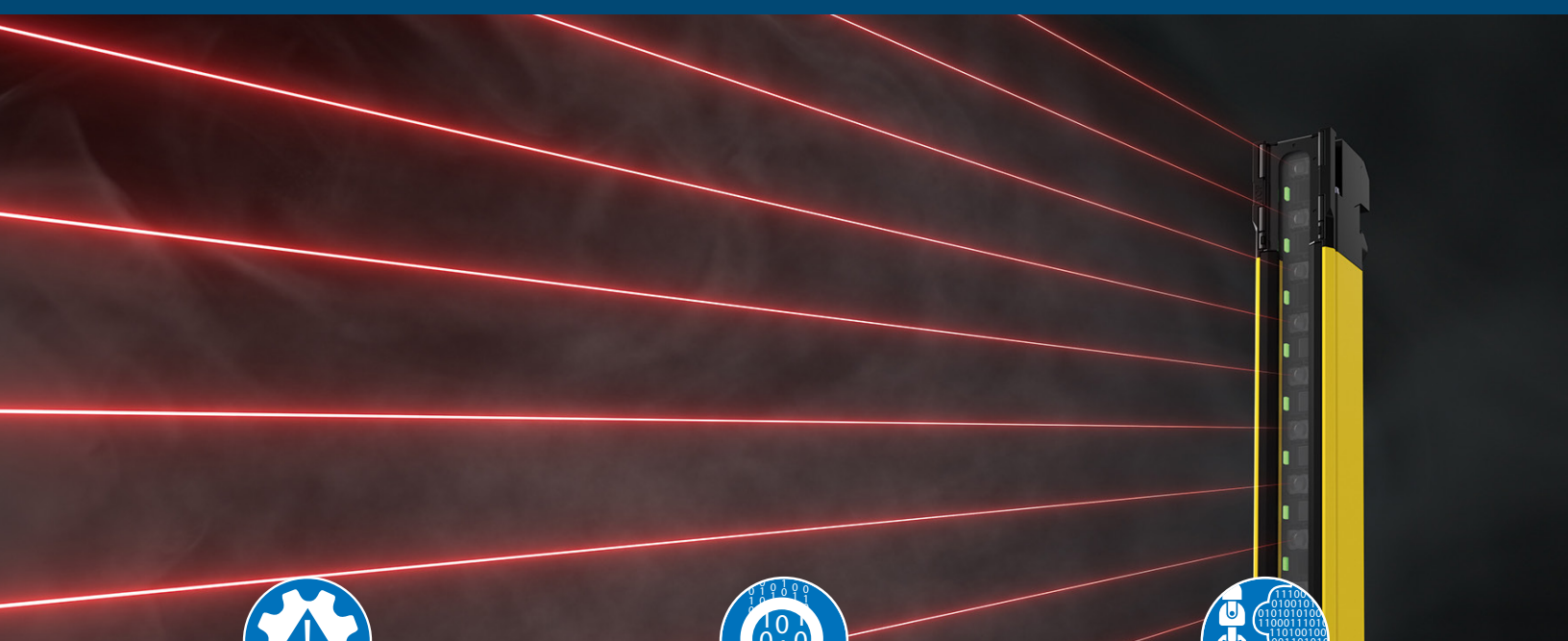
Omron's F3SG-SR Series safety light curtain proved to be the right choice with an available sensing range of 30m at 25mm resolution and multiple advanced features, including a smart programming accessory that simplifies long-range alignment and fixed blanking setup.

### Customer benefits

The F3SG-SR's high level of configurability and features have helped maximize uptime and proven to be of great value when safeguarding the high-risk, production-critical machine.

# The solution

## Flexible light curtain technology



### The need

To maximize production, the customer assigned several safety zones to the purlin stacker. Within a safety zone, the activation of a safety input device for that zone will shut down only the hazards associated with it while allowing production to continue in all other zones. A critical safety zone on the purlin stacker is the unload area, which is the focal point of human-machine interaction. The customer addressed this area with multiple light curtains in a cascade arrangement to protect operators while keeping production moving and allowing free access to the machine.

Finding the right product for this strategy was a challenge. Normally, a handful of available light curtain technologies can address a given application. However, this application required a protected range of 55 feet, with cascading and fixed blanking around machine footings in one package. With tight deadlines looming, the customer needed a product that was easy to configure and commission.



### The technology

The Omron F3SG-SR safety light curtain is designed to maximize flexibility and minimize installation time. The available range (30m protection range at 25mm resolution) provided the added power to cover the requisite distance and reduce customer maintenance procedures by more effectively operating through dust and dirt buildup.

The light curtain's Intelligent Tap module makes gain parameters available for each beam and eliminates guesswork during alignment. It also allows blanking to be set up on the fly and provides real-time visibility into the process via the free-of-charge SD Manager 3 software. Finally, Intelligent Tap offers diagnostic data for system maintenance and troubleshooting, including insight into percent excess gain for each beam to guide predictive (as opposed to preventive) maintenance decisions.



### The outcome

Given the need for flexibility and rapid installation, the customer was impressed with the F3SG-SR's advanced features, setup and configuration tools. The allowable beams feature and ability to disable blanking monitoring helped avoid unnecessary installation-related trips. In contrast, most competitive products require blanking to be set up via dip switches before the obstacle is introduced, and if the obstacle is removed, the system will fault. Omron's safety light curtain eliminates these common problems.

Intelligent Tap turned the normally arduous long-range alignment and fixed blanking setup into a quick and easy task. Overall, the customer was highly satisfied with the Omron F3SG-SR, its ability to maximize uptime provides great value when dealing with a machine as immovable and production-critical as a purlin stacker.

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