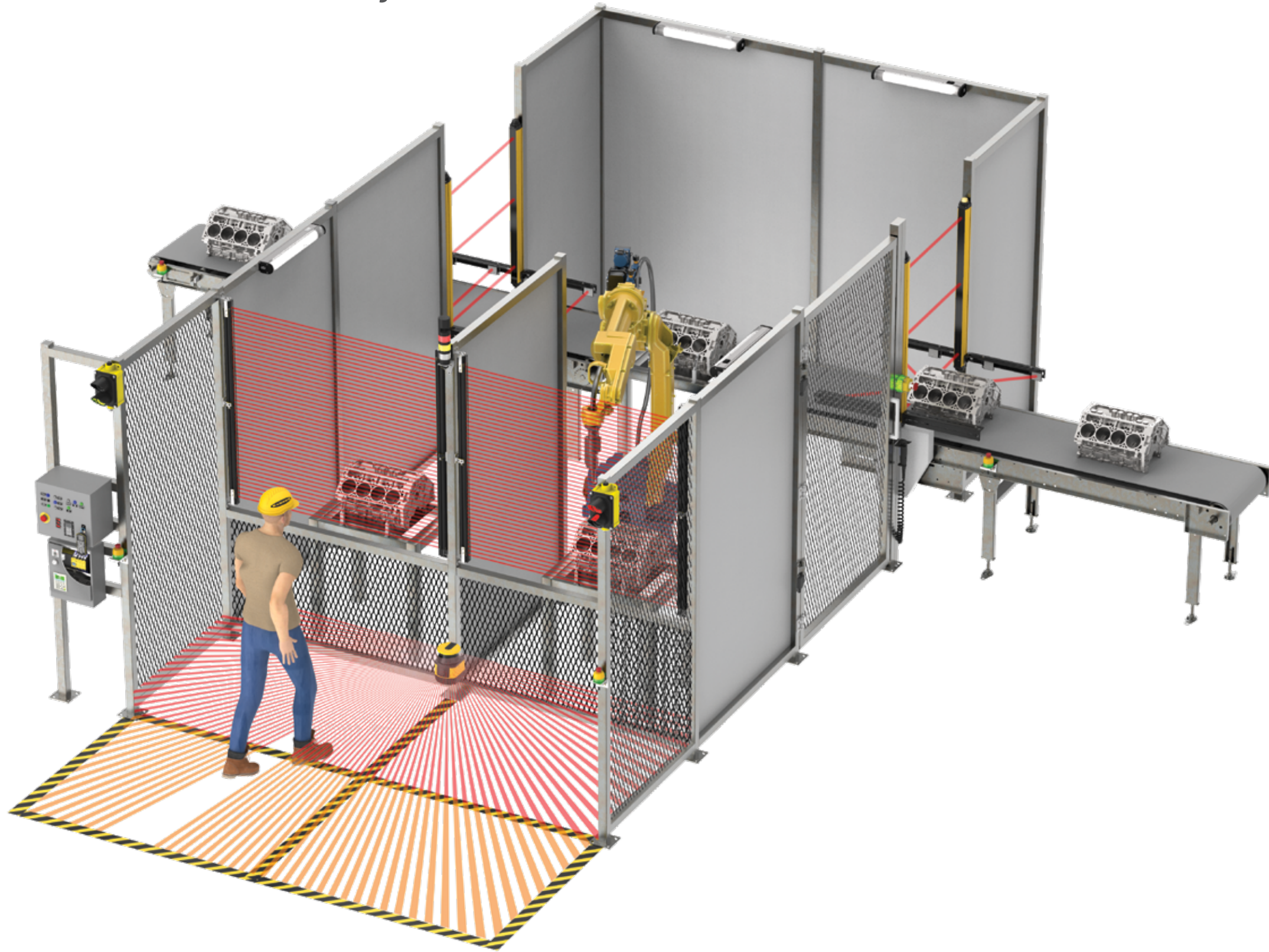


# Machine Safety at a Glance





# Over 30 Years of Safety Solutions



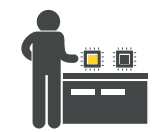
- 1991: Safety Light Curtain Gen 1: MACHINE GUARD™
- 1996: Safety Light Curtain Gen 2: MINI-SCREEN
- 1997: Safety Switches: SI Series  
Safety Relay Modules: ES, GM and AT Series
- 1998: Safety Light Curtain Gen 3: MICRO-SCREEN
- 1999: Safety Switches: SI-LS Series Locking & Limit Switches
- 2001: Two-Hand Safety Control: STB & DUO-TOUCH System – Industry 1st!  
Safety Rope Pulls: RP Series
- 2002: Safety Grids: EZ-SCREEN Grids and Points
- 2004: Safety Light Curtain Gen 4: EZ-SCREEN Type 4
- 2005: Safety Light Curtain Gen 5: EZ-SCREEN Type 2
- 2007: Programmable Safety Controller Gen 1: SC22
- 2008: Safety Switches: SI-HG63 Hinge Switch
- 2009: Safety Light Curtain Gen 5: EZ-SCREEN Low Profile (LP)  
Safety Relays: Added UM and SSM Series
- 2010: Safety Laser Scanner Gen 1: AG4
- 2012: Illuminated-Base Flush Mount Emergency Stop Buttons
- 2014: Programmable Safety Controller Gen 2: SC26
- 2015: Programmable Safety Controller Gen 3: XS26  
Safety Light Curtain Gen 6: EZ-SCREEN LS
- 2017: EZ-SCREEN LS IP69 Hygienic
- 2018: Safety Light Curtain Gen 7: SLC4  
Safety Grids Gen 2: SGS Grids
- 2019: Programmable Safety Controller Gen 4: SC10  
Safety Laser Scanner Gen 2: SX5  
Safety Relays: SR-IM
- 2020: In-Series Diagnostics
  - SC10 Safety Controller
  - RFID Safety Switches
  - Illuminated E-stops
  - ISD Connect
  - ISD to IO-Link Modules
- 2021: Safety Laser Scanner Gen 2: SX5 Master/Remote and SX-B6  
Safety Switches: SI-GL42 Locking Switch (Gen 2)
- 2022: XS26-ISDd: Expandable Programmable Safety Controller with ISD  
EZ-SCREEN LS 7 ft and 8 ft models
- 2023: Safety Light Curtain Gen 8: S4B Series

 **40+**  
Global Offices

 **10,000+**  
Products

 **5500+**  

- Employees
- Field representatives
- Application engineers

 **Leading-edge  
Production**  

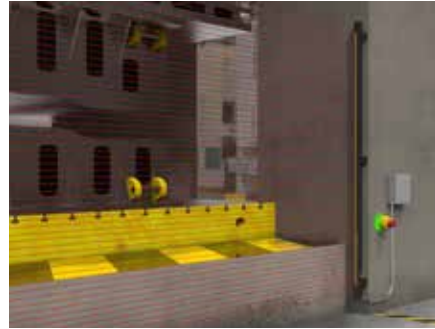
- Special product variations
- Engineering excellence

 **Unique Solutions**  

- To automate production
- To improve efficiency
- To manufacture to the highest quality standard



# Safety Light Curtains and Laser Scanners



## Finger and Hand Protection

Boost your productivity, reduce costs, and ensure safeguarding with safety light curtains. They offer high-level protection to personnel. Various machine functions are either integrated or selectable using safe control solutions, depending on model. Banner's safety light curtains range from small and compact types over models with robust housing options and accessories that are built to withstand harsh environments, providing the highest levels of safety without compromising productivity.



S4B



## Body Protection

Safety grids have two to four light beams. If one or more light beams are interrupted, the system sends the deactivation signal to the machine to stop the dangerous state. Safety grids are available in emitter/receiver models capable of safeguarding over very long distances and in easy-to-deploy active/passive models. Active/passive models contain sender and receiver in the same housing; the mirror assembly on the passive side deflects the beam.



SGS



## Area Protection

Safety laser scanners protect personnel, equipment, and mobile systems in a user-defined area. They continuously scan a 275° area to create a two-dimensional protected zone that must be crossed to reach the hazard. Safety laser scanners are suitable for horizontal, vertical, and mobile applications.



SX5



## Mobile Applications

With master/remote functionality, up to four SX5 safety laser scanners can be connected in a single system to guard all sides of a vehicle. Up to 70 unique safety zone sets can be configured and activated based on the position, speed, and motion of the vehicle. Encoder input and advanced measurement data output reduce the amount of hardware required and allow for direct vehicle navigation. Remote units are each connected to the master by a single cable, reducing cable management and simplifying wiring.

# Safety Controllers and Relays



## Basic Safety Control Systems

Industrial safety relays are simple, cost-effective devices that monitor a safety device on a machine to ensure safe stop and start functions. Each safety relay module acts as an interface between the machine and a specific safety device, such as an emergency stop button, a rope pull, a safety light curtain, or a similar primary safety device.



ES-FA-9A



## Configurable Safety Control Systems

Safety controllers simplify complex safety systems. They are used either in stand-alone applications or connected in distributed systems. A single safety controller can replace multiple safety relay modules on machines that use emergency stop buttons, safety light curtains, and other safety input devices. Banner's software has an intuitive icon-based, drag-and-drop user interface to reduce the learning curve and speed up commissioning. Network components plus software complete your automation architecture and needs. Extensive diagnostic capabilities reduce downtime.



SC10



## In-Series Diagnostics (ISD)

In-Series Diagnostics (ISD) is an innovative communication protocol that makes it easy to access diagnostic data from devices in a safety system without special equipment or designated cabling. Users can troubleshoot machine safety systems, prevent system faults, and reduce equipment downtime. This innovative, next generation technology is exclusive to safety devices from Banner Engineering.



In-Series Diagnostics



### Mechanical Door and Gate Sensing Switches

Safety switches monitor various applications such as doors, gates and other movable physical guards that separate operators from a hazard. Safety switches send a signal to the machine control system when the guard is opened, removed, or is out of position and prevent that guards are bypassed or manipulated during the process. Safety interlock switches are a cost-effective and reliable solution for fence and position guarding.



SI-LS31



SI-LS100



### Emergency Stop Buttons

Emergency stop devices are indispensable at the operator's workplace. They provide operators a way of stopping a machine during an emergency by pushing a button or pulling a rope in order to prevent injury to personnel and material loss. The robust emergency stop push buttons increase safety due to self-monitoring contacts and reduce accidental faults due to variants with a protective collar.



30 mm E-Stops



### Non-contact Door and Gate Sensing Switches

Non-contact safety switches such as magnetic safety switches and safety switches with RFID technology are the ideal solution in applications where intense use is expected and where maintenance is quite complex. Misalignment can be easily accommodated.



SI-RF



### Flush-mount Emergency Stop Buttons

Banner Engineering's award-winning and appealingly designed E-Stops are available in a variety of styles and switch combinations. User-friendly status indicators are identified by a colored mark or LED ring around the push button to simplify diagnostics.



Flush and Panel Mount E-Stops



### Locking Switches

Safety interlock switches are indispensable for the safeguarding of humans and machines. Safety switches with lock function are used where safety distance is not sufficient or where an uncontrolled stop is not preferred.



SI-GL42



### Rope Pulls with Emergency Stop

Safety rope pull switches with integrated emergency stop buttons have a steel cable to provide emergency stop actuation for conveyors and large machinery. They are often used to safeguard extended hazardous zones.



Rope Pull E-Stops



### Hinge Safety Switches

A hinge switch combines a hinge with a safe actuator in one device. Hinge switches are mounted to a hinged or swivel door, or to a flap to detect it is being opened. Hinge switches provide reliable manipulation protection because they are built-in hidden.



SI-HG63



### Two-hand Safety Touch Buttons

Safely restart a process or complete your machine cycle by using two-hand control modules and safety touch buttons. Two-hand control modules monitor the output of each mechanical switch button and de-energize when the operator removes one or both hands from the buttons.



Safety Touch Buttons





Assembly and Robotics



Automotive



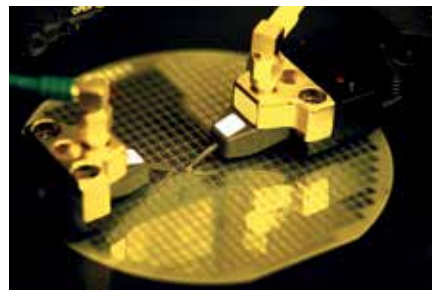
Food



Material Handling



Pharmaceutical and Medical



Semiconductor



Beverage



Electronics



Packaging



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