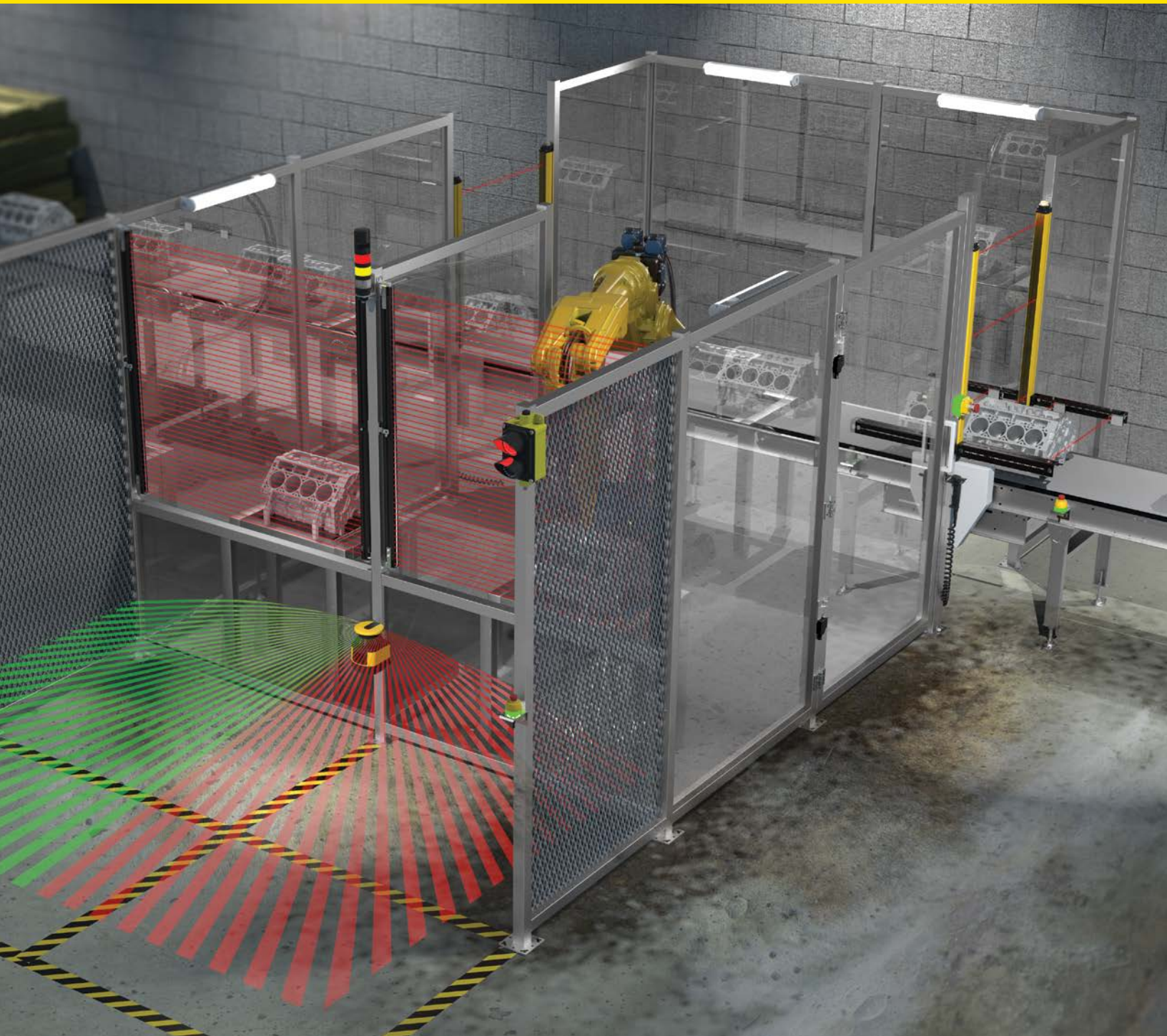
Safety Solutions

BANNER®

more sensors, more solutions



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Complete Safety Solutions from Banner

Safety Light Curtains

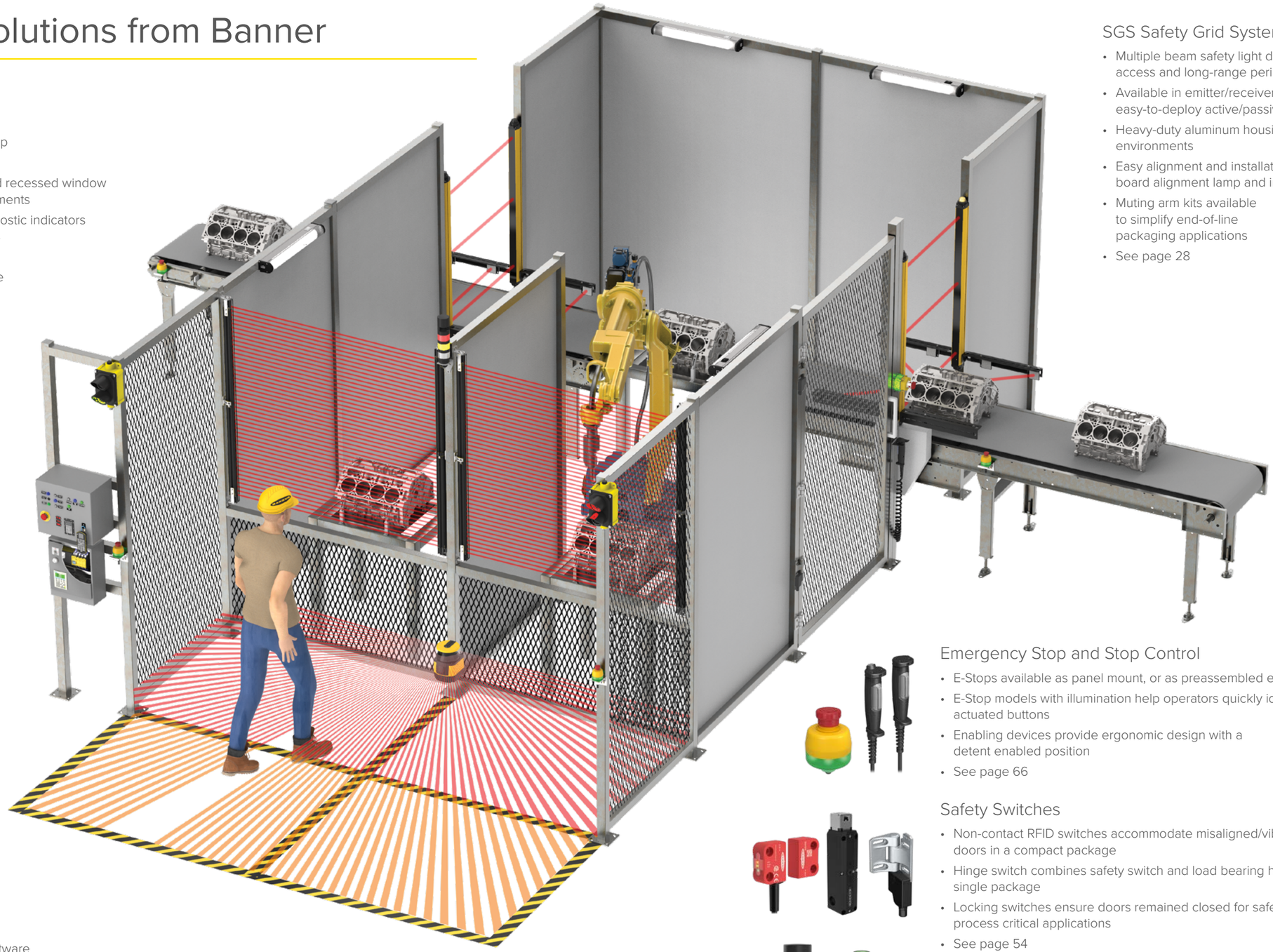
- Intuitive and easy-to-use and set up
- End-to-end sensing
- Heavy-duty aluminum housing and recessed window to avoid damage in harsh environments
- Highly visible alignment and diagnostic indicators
- IP69 hygienic models available for washdown environments
- Cascade capable models available
- See page 10

Safety Controllers

- Up to eight expansion I/O modules can be added as your safety application grows or changes
- Configuration software is so simple that you will be programming in minutes
- Simulator functionality allows users to test their configurations without being connected to a controller
- See page 42

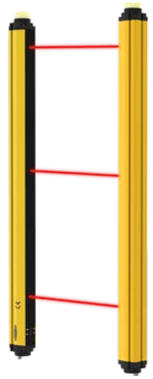
Safety Laser Scanners

- Two-dimensional laser scanner with easy-to-use software
- Programming of irregular shaped warning and detection zones
- 275° scanning angle with selectable resolutions and 5.5 m range
- See page 32



SGS Safety Grid Systems

- Multiple beam safety light devices for access and long-range perimeter guarding
- Available in emitter/receiver models and in easy-to-deploy active/passive models
- Heavy-duty aluminum housing for tough environments
- Easy alignment and installation with on-board alignment lamp and indicators
- Muting arm kits available to simplify end-of-line packaging applications
- See page 28



Emergency Stop and Stop Control

- E-Stops available as panel mount, or as preassembled enclosures
- E-Stop models with illumination help operators quickly identify actuated buttons
- Enabling devices provide ergonomic design with a detent enabled position
- See page 66

Safety Switches

- Non-contact RFID switches accommodate misaligned/vibrating doors in a compact package
- Hinge switch combines safety switch and load bearing hinge in a single package
- Locking switches ensure doors remained closed for safety and process critical applications
- See page 54

Lighting and Indication

- Preassembled and preconfigured multi-segment LED tower light indicators
- Programmable multicolor LED indicators, panel mount models available
- Pro Editor software offers a wide variety of color and animation options

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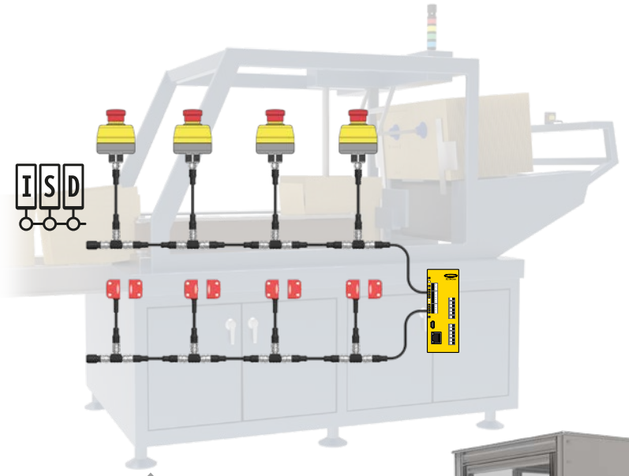
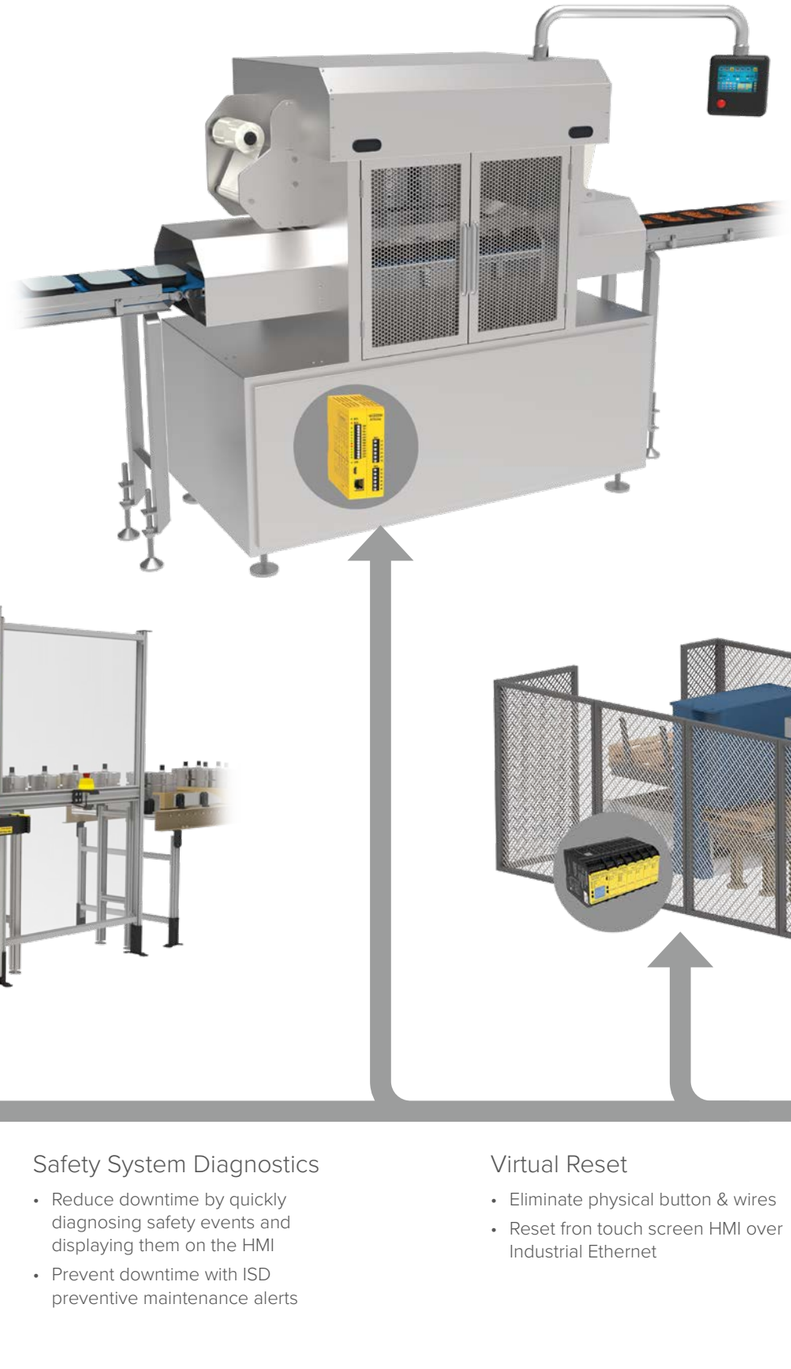
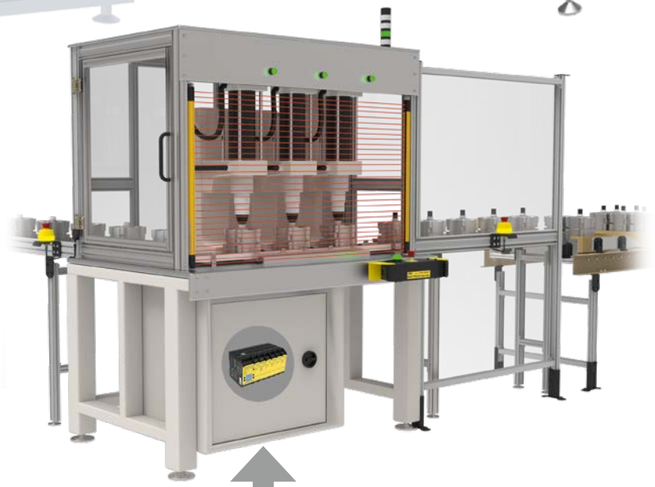
Network Technology Down to the Device Level





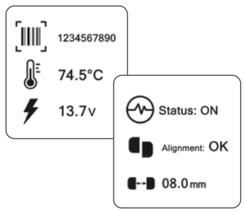


HMI / PLC

Industrial Ethernet

Banner In-Series Diagnostics

- Up to 32 ISD devices connected with one in-series cable communicate directly with PLC/HMI
- ISD provides an array of data including device status, voltage, temperature, RFID tag value, sensing distance, and more



Safety System Diagnostics

- Reduce downtime by quickly diagnosing safety events and displaying them on the HMI
- Prevent downtime with ISD preventive maintenance alerts

Virtual Reset

- Eliminate physical button & wires
- Reset fron touch screen HMI over Industrial Ethernet

EtherNet/IP
Modbus TCP/IP
PROFINET
EtherCAT

Intuitive setup and PLC integration

Free, easy-to-use PC software

- Export tag feature for easy tag creation in a PLC (patent pending)

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Banner In-Series Diagnostics (ISD)

Easy-to-Implement Diagnostic Capabilities for Complex Safety Systems

In-Series Diagnostics allows connection of up to 32 devices with one in-series connection and communicate directly with the most commonly used PLCs.

When a safety event occurs the system receives an alert that includes information about which safety device tripped, making troubleshooting a breeze.

In-Series Diagnostics provides an array of additional data points for each in-series device used, including a unique tag value, internal temperature, voltage, and more, along with device-specific details such as the alignment and distance between a safety switch's sensor and actuator.

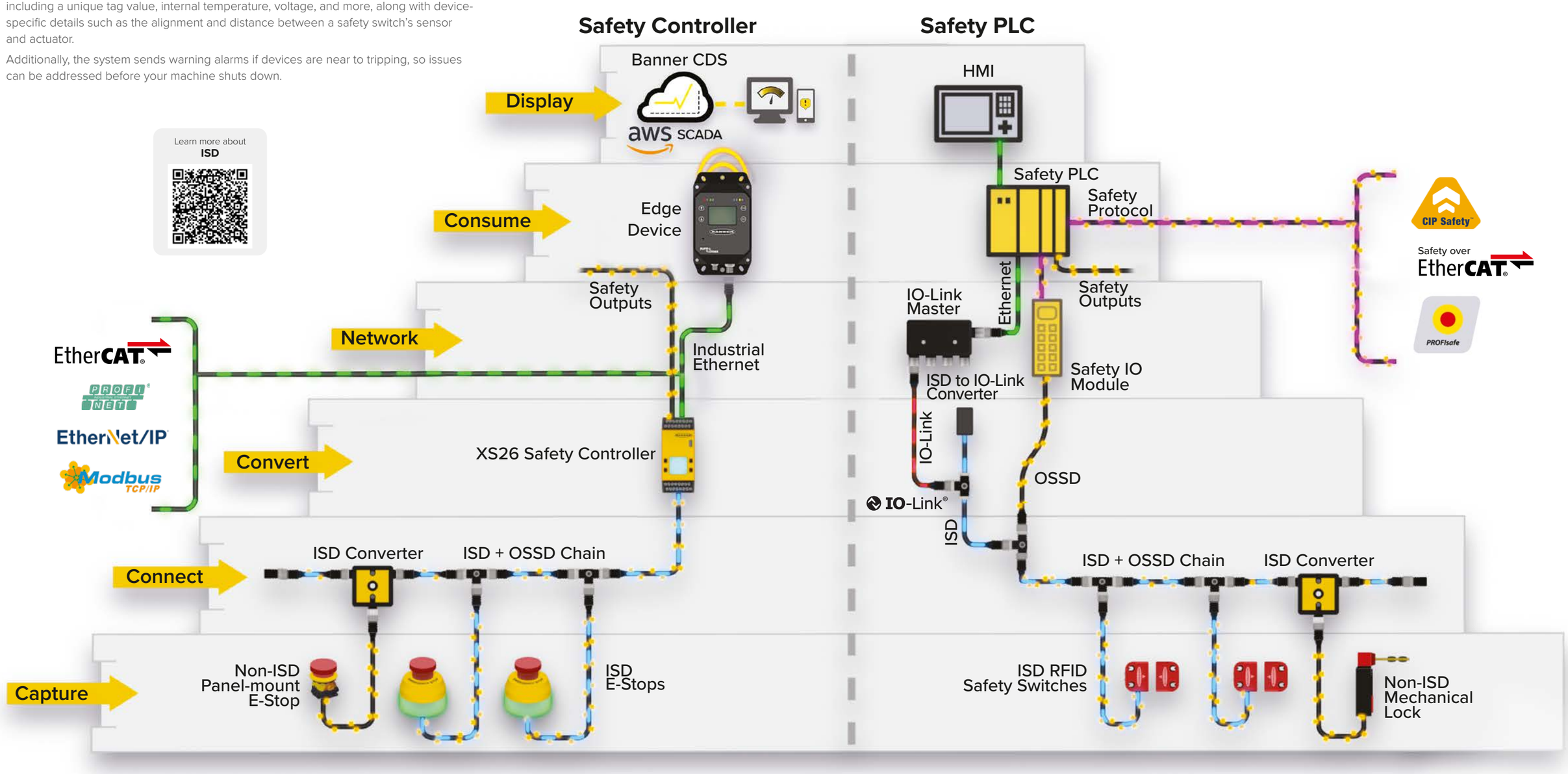
Additionally, the system sends warning alarms if devices are near to tripping, so issues can be addressed before your machine shuts down.

Cut Costs

Simplify Installation & Troubleshooting

Prevent & Reduce Downtime

Learn more about **ISD**



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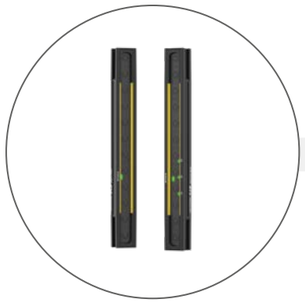
Choosing a Banner Safety Light Curtain



Start with the S4B

- Heavy-duty housing
- 30mm resolution
- Zone & alignment indication

If the following are needed:

- Cascade
- 14mm resolution
- Blanking
- EDM
- IP67

select EZ-SCREEN LS

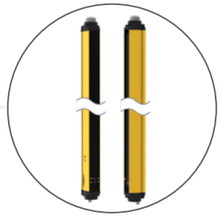
If the following are needed:

- Up to 18 m range
- Reduced resolution
- Latch

select EZ-SCREEN

If the following is needed:

- Up to 60 m range



select SGS Grids

If the following are needed:

- Compact

select EZ-SCREEN LP

If the following is needed:

- Very compact

select SLC4

	S4B	EZ-SCREEN LS	EZ-SCREEN LP
Resolution (mm)	30	14, 23, 40	14, 25
Range (m)	12	12	7
Defined Area (mm)	300 to 1800	280 to 2380	270 to 1250
Integral Muting			✓

	SLC4	EZ-SCREEN	SGS Grids
Resolution (mm)	14, 24	14, 30	300, 400, 500
Range (m)	2	6, 18	8, 30, 60
Defined Area (mm)	160 to 320	150 to 2400	500 to 1200
Integral Muting			✓

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Safety Light Curtain Selection Guide

	S4B	EZ-SCREEN LS	EZ-SCREEN 14/30		EZ-SCREEN LP	SLC4	EZ-SCREEN LS2	SGS Grids
	p. 14	p. 16	p. 20		p. 22	p. 24	p. 26	p. 28
Type IEC 61496-1, -2	Type 4	Type 4	Type 4		Type 4	Type 4	Type 2	Type 4
Safety Rating EN ISO 13849-1; IEC 61508; IEC 62061	Category 4 PL e; SIL3	Category 4 PL e; SIL3	Category 4 PL e; SIL3		Category 4 PL e; SIL3	Category 4 PL e; SIL3	Category 2 PL c	Category 4 PL e; SIL3
IP Rating	IP65	IP65, IP67, IP69	IP65		IP54, IP65	IP65	IP65	IP65
Dimensions W x D (mm)	38 x 38	36 x 45	36 x 45		28 x 26	27 x 22	25 x 32	52 x 56.9
Resolution (mm)	30	14, 23, 40	14	30	14, 25	14, 24	30	300, 400, 500
Max Sensing Range (m)	12	12	6	18	Basic: 4 Standard: 7	2	15	Standard: 30 Long Distance: 60
Defined Area (mm)	300 to 1800	280 to 2380	150 to 1800	150 to 2400	Basic: 270, 410, 550, 690 Standard: 270 to 1250	160, 240, 320	150 to 1800	500 to 1200
Increments (mm)	150	70	150		Standard: 140	80	150	2, 3, 4 Beams
Functions								
Hand Detection	✓	✓	✓		✓	✓	✓	
Finger Detection		✓	✓		✓	✓		
Body Detection								✓
Cascade		SLLC	SLSC		SLPC			
Scan Codes	✓	✓	✓		✓			✓
Fixed Blanking		✓	✓		✓			
Reduced Resolution			✓		✓			
EDM		✓	✓		✓		✓	✓
Reset			✓		✓		✓	✓
Integrated Muting		See page 18			✓			✓
LED on Top		Accessory						✓

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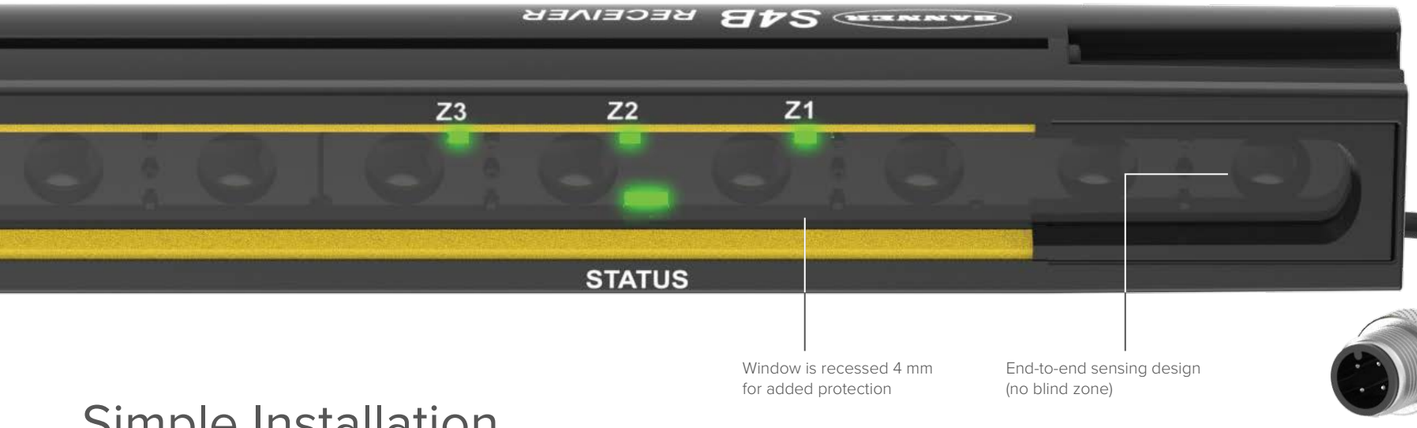
S4B Type 4 Heavy-Duty Light Curtains

Designed for a broad range of applications, the next generation of safety light curtains has essential features including remote indication for predictive maintenance.



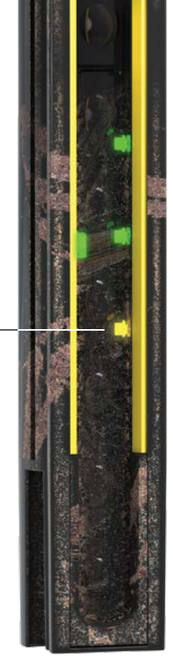
Window is recessed 4 mm for added protection

End-to-end sensing design (no blind zone)

Prevent Downtime

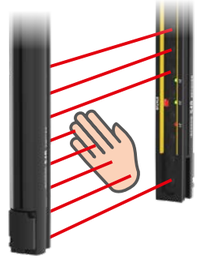
Yellow indicates a weak signal due to a dirty lens.

A weak beam strength output is sent via pin 5 to a PLC or HMI alerting operators to preventive maintenance needs.



Eliminate Costly Repairs

Removable cordset with 5-pin M12 QD allows for cost effective replacement of only the damaged component



Reliable Hand Detection

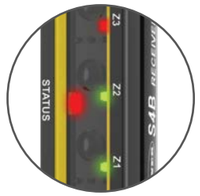
The S4B features a 30-millimeter resolution for reliable hand detection

Simple Installation

The S4B is designed and optimized for easy and intuitive installation, operation, and troubleshooting. Zone LEDs aid troubleshooting and help reduce downtime.

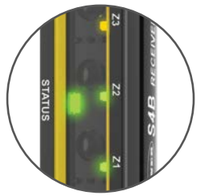
Rotating and locking brackets

Alignment Zone Indicators



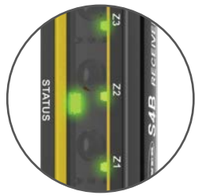
Misaligned

Red indicates a loss of signal due to a blocked beam or significant misalignment



Weak

Yellow indicates a weak signal due to a slight misalignment



Aligned

Green indicates a strong signal, proper alignment, and clear of obstruction

Intuitive Setup and Swap-out

Select and save scan code setting without a PC for easy setup and swap-out

1. Select Emitter and Receiver

Family	Feature Set	Device Type	Resolution		Defined Area		Termination
S4	**B**	**E**	**30**	–	**900**	–	**S**
	B = Basic	**E** = Emitter only **R** = Receiver only	**30** = 30 mm	**300** = 300 mm **450** = 450 mm **600** = 600 mm **750** = 750 mm	**900** = 900 mm **1050** = 1050 mm **1200** = 1200 mm **1350** = 1350 mm	**1500** = 1500 mm **1650** = 1650 mm **1800** = 1800 mm	**S** = Emitter or Receiver only (S4B bracket(s) and S4B cordset(s) sold separately)

2. Add S4B Brackets (required)

S4BA-MBK-16

- Side mount bracket
- Rotation: +/- 15°
- Includes 2 brackets and hardware
- Each bracket supports 900 mm of length

3. Add S4B Cordsets (required)

DES4E-51D

- S4B removable 5-pin M12 QD pigtail
- Includes one

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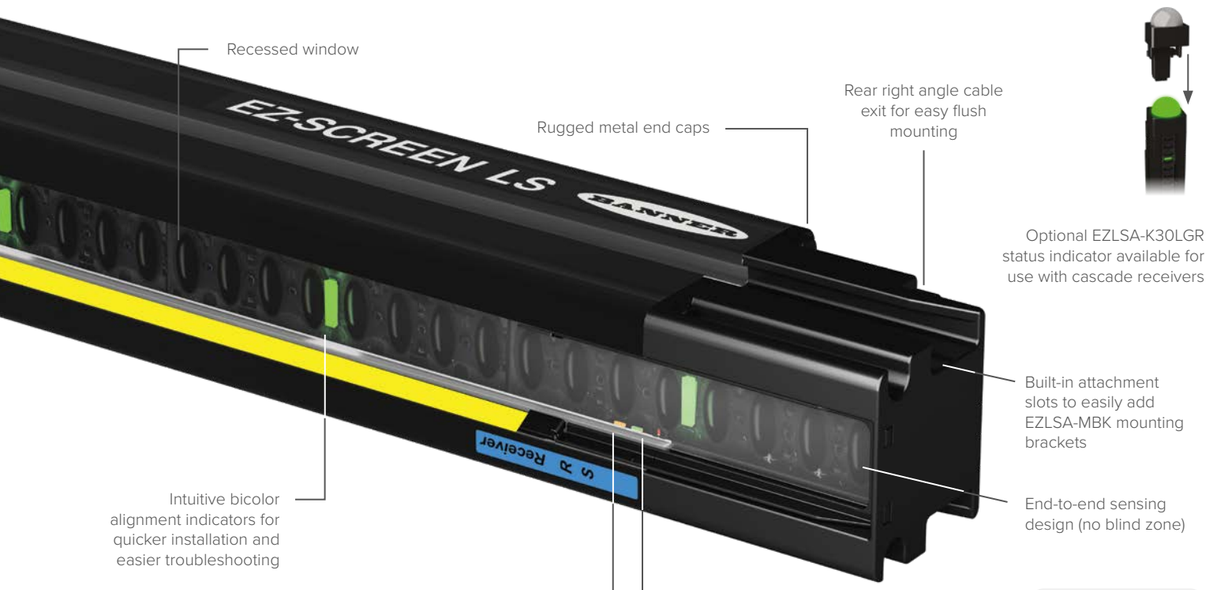
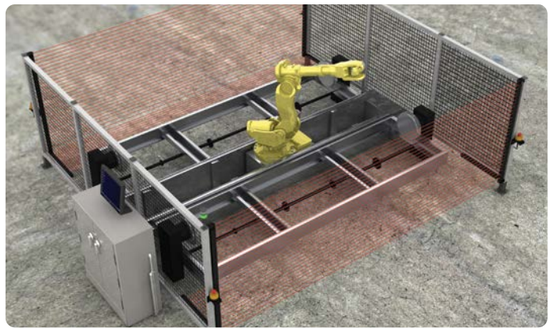
EZ-SCREEN LS Type 4 Heavy-Duty Light Curtains

The LS is a full-feature family of light curtains providing greater capabilities for cascading, blanking, EDM and more.



Learn more about our **cascade advantage**



Due to its robust design, the EZ-SCREEN LS is the perfect fit in large robotic cell applications that require sturdy safety devices and heavy duty enclosures.

EZ-SCREEN LS light curtains in hygienic tubular enclosures successfully protect operators from injury and remain hygienic for easy cleaning procedures.

1. Select Emitter, Receiver, or Pair

Family	Cascade	System Type	Resolution		Defined Area		Termination
SLL		E	14	–	910	–	S

Blank = Standard
C = Cascade

E = Emitter only
R = Receiver only
P = Pair (Emitter and Receiver)

14 = 14 mm
23 = 23 mm
40 = 40 mm

280 = 280 mm*
350 = 350 mm
420 = 420 mm
490 = 490 mm
560 = 560 mm
630 = 630 mm
700 = 700 mm
770 = 770 mm
840 = 840 mm

910 = 910 mm
980 = 980 mm
1050 = 1050 mm
1120 = 1120 mm
1190 = 1190 mm
1260 = 1260 mm
1330 = 1330 mm
1400 = 1400 mm
1470 = 1470 mm

1540 = 1540 mm
1610 = 1610 mm
1680 = 1680 mm
1750 = 1750 mm
1820 = 1820 mm
1960L = 1960 mm**
2100L = 2100 mm**
2380L = 2380 mm**

*Not available in cascade models
**23 mm resolution, IP65, 10 m range

S = emitter or receiver only (LS bracket(s) and LS cordset(s) ordered separately)
P5 = Emitter or receiver includes one LS M12 double ended cordset (5-pin) and LS brackets (-11 and -12)
P55 = Pair includes two LS M12 double ended cordsets (5-pin) and LS brackets (-11 and -12)
P8 = Emitter or receiver includes one LS M12 double ended cordset (8-pin) and LS brackets (-11 and -12)
P88 = Pair includes two LS M12 double ended cordsets (8-pin) and LS brackets (-11 and -12)
Blank = Emitter, receiver or pair includes LS brackets (-11 and -12), LS cordset ordered separately

2. Add LS Brackets (for "-S" termination)

EZLSA-MBK-11

- End mount slotted steel bracket
- Rotation: 360° in 23° increments
- Includes two brackets
- Slotted mounting holes spaced 20 mm on-center

EZLSA-MBK-12

- Center mount steel bracket
- Rotation: +/- 15°
- Includes one bracket
- Use with EZLSA-MBK-11/-20 with a max of 980 mm unsupported

EZLSA-MBK-16

- Side mount die-cast bracket
- Rotation: +15° and -20°
- Includes one bracket
- Use one or multiple with a max of 980 mm unsupported

EZLSA-MBK-20

- End mount universal steel bracket
- Rotation: 360° in 23° increments
- Includes two brackets
- Universal mounting slots

3. Add LS Cordsets (for "-S" or "Blank" termination)

LS-Custom to M12 Double Ended

DELSE-51D (5-Pin)
0.3 m (1')
DELSE-81D (8-Pin)
0.3 m (1')

Single Ended LS-Custom to Flying Leads

RDLS-515D (5-Pin)
4.6 m (15')
RDLS-815D (8-Pin)
4.6 m (15')
RDLS-825D (8-Pin)
8 m (26')
RDLS-850D (8-Pin)
15.3 m (50')

Double-Ended RD to RD Cordsets for Cascade Systems

DELS-111E
0.3 m (1')
DELS-113E
1 m (3.3')
DELS-1115E
4.6 m (15.1')

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IP69 Hygenic

Family	System Type	Resolution	Defined Area	Termination
EZLSA-HTE	**R**	**23**	**910**	

E = Emitter
R = Receiver

23 = 23 mm

280 = 280 mm*
350 = 350 mm
420 = 420 mm
490 = 490 mm
560 = 560 mm
630 = 630 mm
700 = 700 mm
770 = 770 mm
840 = 840 mm
910 = 910 mm
980 = 980 mm
1050 = 1050 mm

*Not available with remote fixed blanking option

Blank = 7.6 m, 8-wire high durometer PVC cordset
F = Remote Fixed Blanking Receiver model with additional 7.6 m cordset for blanking configuration

Brackets

EZLSA-MBK-HTE-1

- Stamped stainless steel bracket
- 360° rotation for IP69 enclosure models
- Two brackets per optional kit

EZLSA-MBK-HTE-2

- Hygienic stainless steel bracket
- 360° rotation for IP69 enclosure models
- Two brackets per optional kit

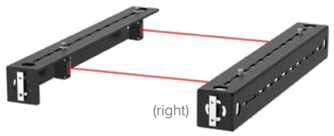
Mute Arm Kits

Create a turn-key muting solution for your EZ-SCREEN LS Safety Light Curtain

- With a 300 mm (1 ft) PVC cable with a 8-pin M12 male quick disconnect
- **Needs EZ-SCREEN LS Hardware Adaptor Kit EZLSA-MCB-HW**

L-Configuration

SGSA-ML-L-LPQ20
Includes 2 mute arms, 2 SGSA-Q20PLPQ5 mute sensors, and 2 retroreflectors



SGSA-ML-R-LPQ20
Includes 2 mute arms, 2 SGSA-Q20PLPQ5 mute sensors, and 2 retroreflectors

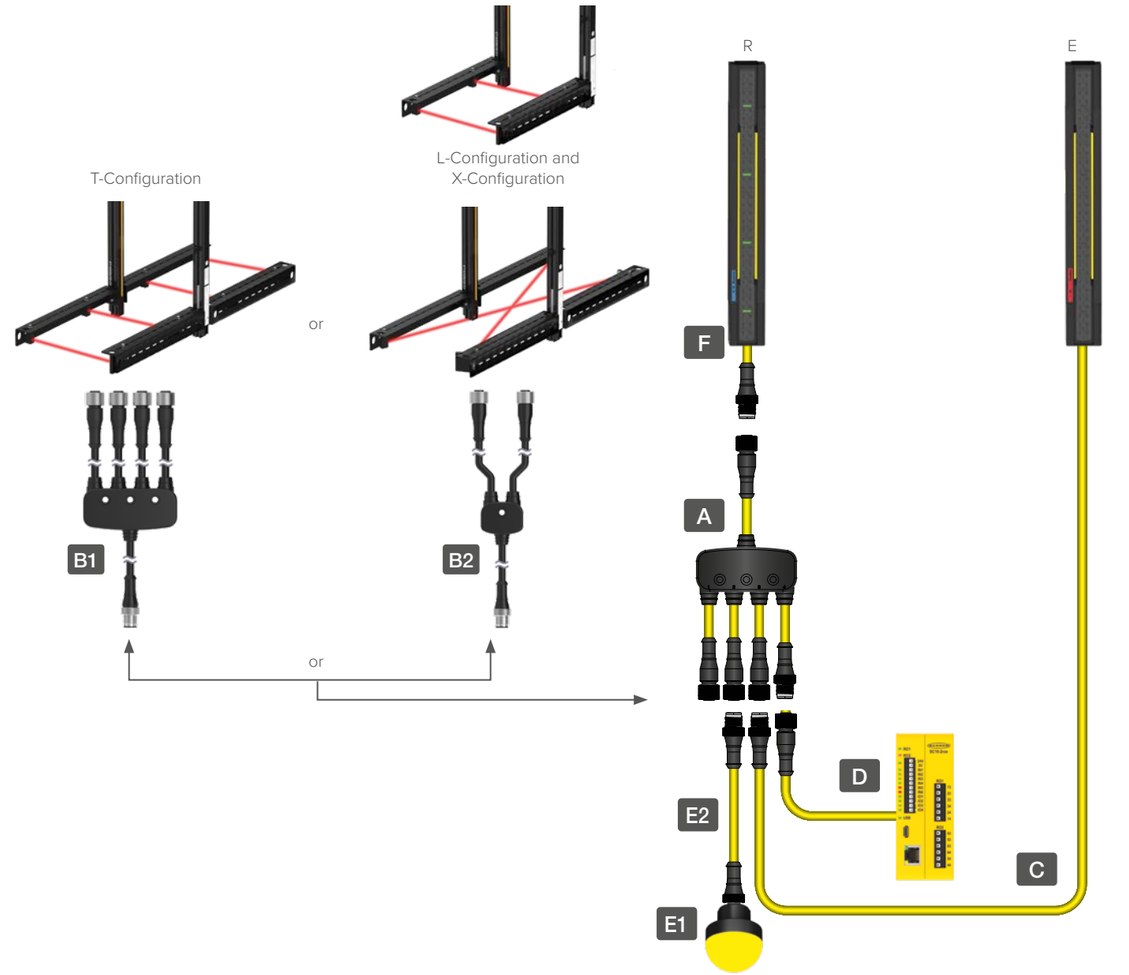
T-Configuration

SGSA-MT-LPQ20
Includes 4 mute arms, 4 SGSA-Q20PLPQ5 mute sensors, and 4 retroreflectors

X-Configuration

SGSA-MX-LPQ20
Includes 4 mute arms, 2 SGSA-Q20PLPQ5 mute sensors, and 2 retroreflectors

Muting System Diagram



Connection Cables

A	**CSM4-M1281M1251M1281** LS muting connection cable
B	SGS mute arm kit connection cable (select one) B1: T-Muting: **CSA4-M1251M1251M1251M1251** B2: L-Muting or X-Muting: **CSA-M1241M1241**
C	**DEE2R-8xxD** LS emitter connection cable (xx is the length in feet)
D	**QDEG-12xxE** Safety controller connection cable (xx is the length in feet)
F	**DELSE-81D (8-Pin)** LS receiver connection cable (M12)

Mute Lights and Cables

E1	**TL50WQ, TL50YQ, K50LWXXPQ, K50LYXXPQ** Mute lights (xx is the length in feet)
E2	**DEE2R-5xx** Mute light cable (xx is the length in feet)

Interface options

Interface Modules (see page 52)

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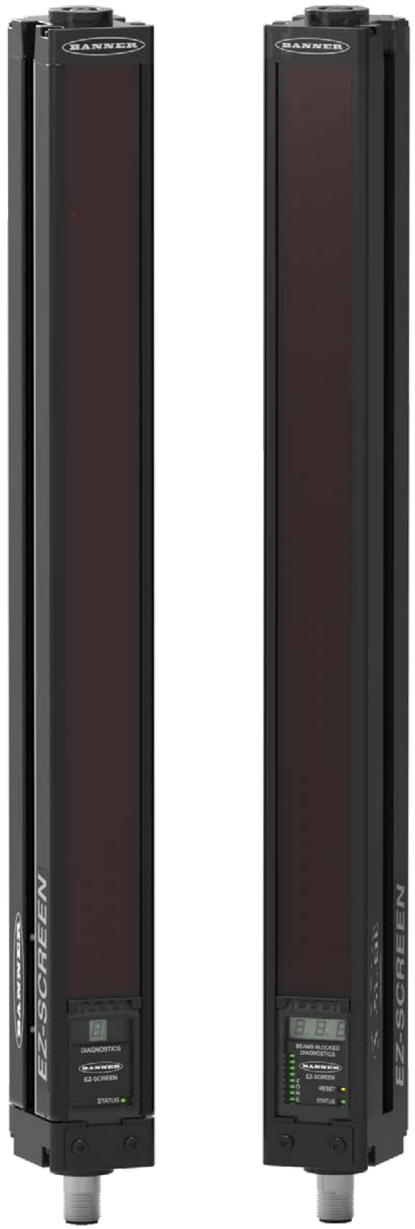
EZ-SCREEN 14/30 Type 4 Light Curtains

Banner's traditional light curtain, the EZ-Screen 14/30 provides the longest sensing range, reduced resolution, and includes trip or latch/reset functionality.



Durable aluminum housing and metal end caps

Offers optional lens shields and enclosures for added durability

Low-profile compact package for smaller production machines

Standard nickel-plated housing or nickel-plated ESD-safe housing for protection against electrostatic discharges

Blocked beam zone indicators

Displays operating status, configuration and error codes

Offers optional cascading to create a system that responds to a single stop command

Learn more about our **cascade advantage**

1. Select Emitter and Receiver

Family	Cascade	System Type	Resolution		Defined Area	Finish	Termination
SLS	C	P	14	–	150		Q88

C = Cascade
Blank = No cascading

E = Emitter
R = Receiver
P = Pair

14 = 14 mm
30 = 30 mm

150 = 150 mm*
300 = 300 mm
450 = 450 mm
600 = 600 mm
750 = 750 mm
900 = 900 mm
1050 = 1050 mm
1200 = 1200 mm
1350 = 1350 mm
1500 = 1500 mm
1650 = 1650 mm
1800 = 1800 mm
1950 = 1950 mm**
2100 = 2100 mm**
2250 = 2250 mm**
2400 = 2400 mm**

*Not available in cascade models
**Only available in 30 mm resolution

Blank = Yellow powder coat
N = Nickel-plated ESD
(ESD-safe models are not available with pigtail QD)
A = Clear anodized aluminium

Q8 = 8-pin M12 QD (individual Emitter or Receiver models)
P8 = 8-pin M12 pigtail QD (individual Emitter or Receiver models)
Q88 = For Pair – Emitter with 8-pin M12 QD, Receiver with 8-pin QD
P88 = For Pair – Emitter with 8-pin M12 pigtail QD, Receiver with 8-pin M12 pigtail QD

2. Add Brackets

EZA-MBK-11

- Standard mounting L-bracket

EZA-MBK-12

- Center mounting bracket

EZA-MBK-20

- Retrofit bracket for mounting to engineered/slotted aluminum framing

EZA-MBK-21

- Mounting bracket system for L configuration of two cascaded light screens
- One EZA-MBK-21 kit contains brackets for one side of an L-mounting configuration

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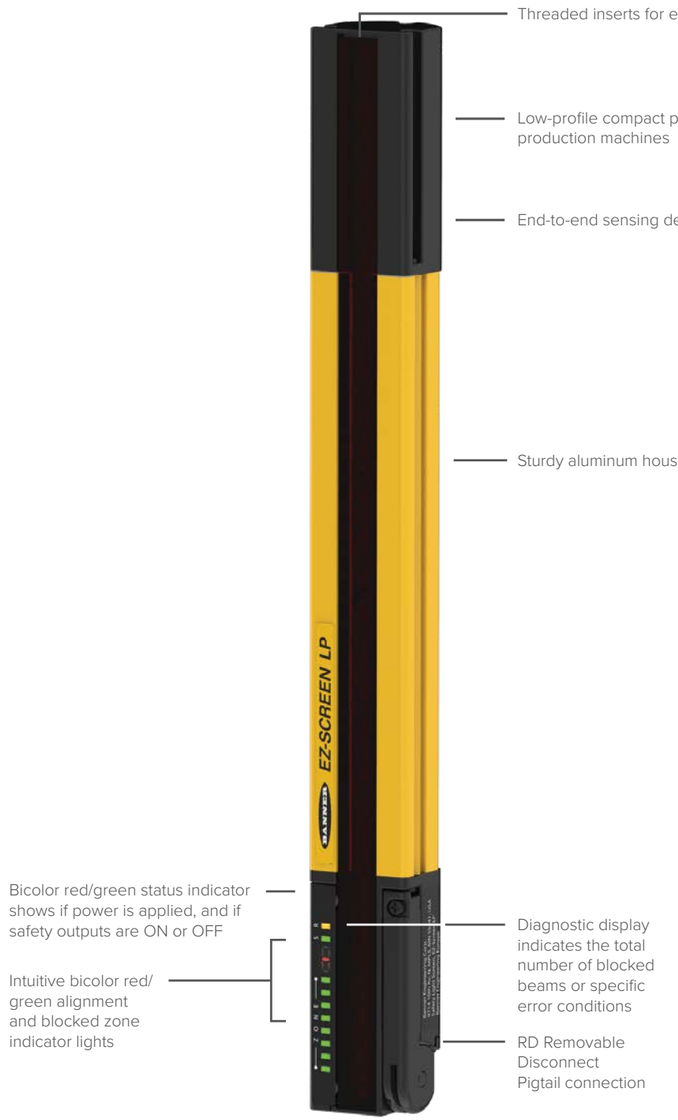
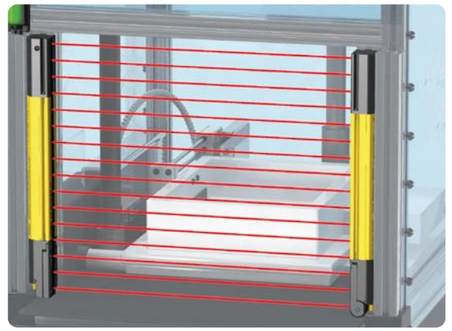
EZ-SCREEN LP Type 4 Compact Light Curtains

Banner's compact full-feature family of light curtains providing capabilities for cascading, blanking, integral muting, latch/reset, EDM, and more.



Learn more about our **cascade advantage**



The EZ-SCREEN LP safety light screen is compact and mounts in tight spaces with its continual end-to-end sensing that leaves no gaps.

1. Select Emitter and Receiver

EZ Screen LP

Family	Cascade	System Type	Resolution		Defined Area	Termination
SLP	**C**	**P**	**14**	—	**410**	**P88**

C = Cascade*
Blank = Standard
VA = LP Basic

P = Pair (Emitter and Receiver)
E = Emitter only
R = Receiver only

14 = 14 mm
25 = 25 mm

270 = 270 mm**
410 = 410 mm
550 = 550 mm
690 = 690 mm
830 = 830 mm†
970 = 970 mm†
1110 = 1110 mm†
1250 = 1250 mm†

Note: LP Basic contains individual emitter and/or receiver only. Brackets and cordset ordered separately

P8 = 300 mm 8-Pin M12 pigtail QD (individual Emitter or Receiver models)
P88 = 300 mm 8-Pin M12 pigtail QD (on BOTH Emitter and Receiver models)
Blank = no pigtail, RD connection (for RDLP-8..D cordset)

*8-pin connection required for cascade models and to enable EDM, Aux Output and Reset features
**Not available in cascade models
†Not available in LP Basic models

EZ Screen LP with Muting

Family	Resolution		Defined Area	Finish	Termination
SLPMP	**14**	—	**410**		

SLPE = Emitter
SLPMR = Receiver
SLPMP = Pair

14 = 14 mm
25 = 25 mm

410 = 410 mm
550 = 550 mm
690 = 690 mm
830 = 830 mm
970 = 970 mm
1110 = 1110 mm
1250 = 1250 mm

Blank = Yellow powder coat
N = Nickel-plated ESD
A = Clear anodized aluminium

Blank = Integral Removable Disconnect
P8 = 8-pin pigtail QD (SLPE)
P12 = 12-pin pigtail QD (SLPMR)
P128 = For SLPMP (Pair)
Emitter with 8-pin M12 pigtail QD
Receiver with 12-pin M12 pigtail QD

2. Add Brackets

LPA-MBK-10

- End mount bracket
- Rotation: 40°
- Includes 2 brackets and hardware
- 14 ga. steel, black zinc-plated

LPA-MBK-11

- Standard end mount bracket
- Rotation: 360°
- Includes 2 brackets and hardware
- 14 ga. steel, black zinc-plated

LPA-MBK-12

- Standard side mount bracket
- Rotation: +10° and -30°
- Includes 1 bracket and hardware
- 14 ga. steel, black zinc-plated

LPA-MBK-16

- Side mount bracket
- Rotation: +15° and -20°
- Includes 1 bracket and hardware
- Black zinc die-cast

LPA-MBK-21

- Pivoting cascade mounting bracket
- Includes 2 brackets and hardware
- 14 ga. steel, black zinc-plated

3. Add Cordsets

LP-Custom to M12 Male QD

DELPE-51D (5-pin)
0.3 m (1 ft)

DELPE-81D (8-pin)
0.3 m (1 ft)

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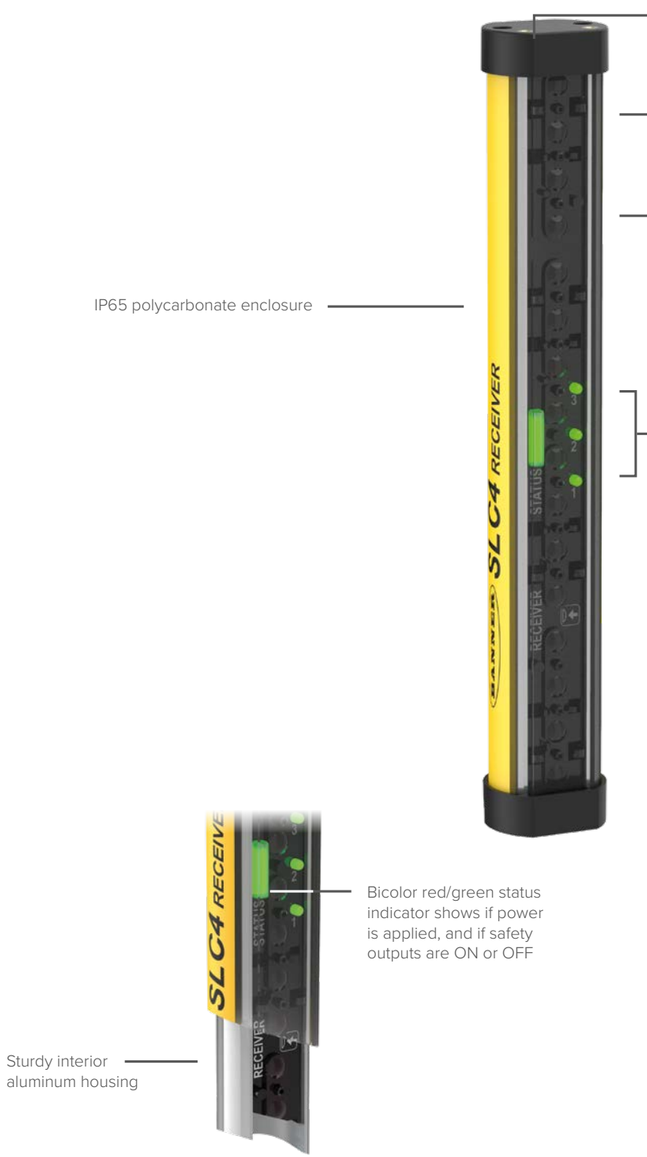
SLC4 Type 4 Ultra Compact Light Curtains

Banner's shortest, most compact light curtain is built with today's essential features including 14 mm and 24 mm resolution, zone/alignment indicators, and more.



1. Select Emitter and Receiver

Family	System Type	Resolution		Defined Area	Termination
SLC4	**P**	**14**	—	**160**	**P44**
	P = Pair (Emitter and Receiver) **E** = Emitter only **R** = Receiver only	**14** = 14 mm **24** = 24 mm		**160** = 160 mm **240** = 240 mm **320** = 320 mm	**P4** = 300 mm 4-Pin M12 pigtail QD (individual Emitter or Receiver models) **P44** = 300 mm 4-Pin M12 pigtail QD (Pair)

2. Add Brackets

SLC4A-MBK-10

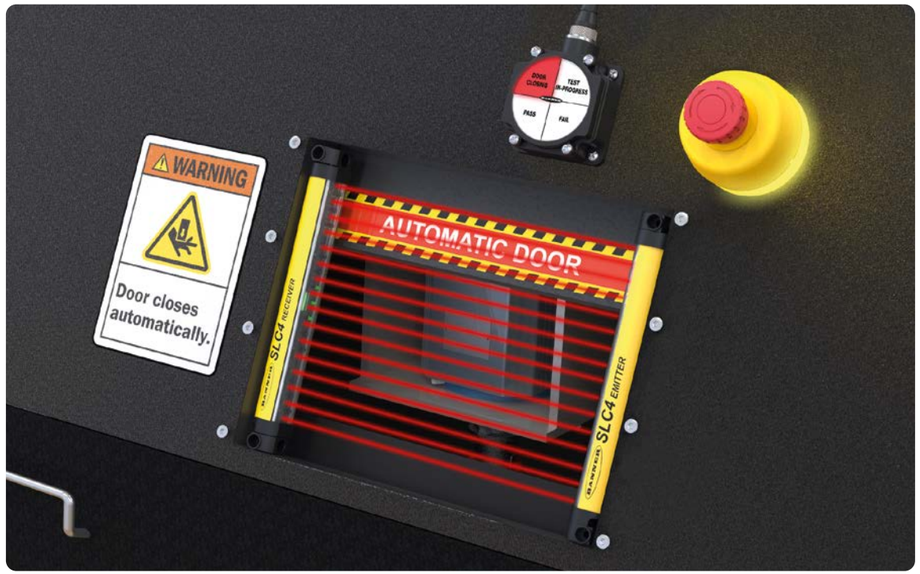
- End mount bracket
- Rotation: +/- 20°
- Includes 4 brackets and hardware
- 14 ga. steel, black zinc-plated

SLC4A-MBK-11

- End mount bracket
- Rotation: Fixed
- Includes 4 brackets and hardware
- Glass-filled polycarbonate

SLC4A-MBK-12

- Side mount bracket
- Rotation: +/- 15°
- Includes 2 brackets
- Glass-filled polycarbonate



SLC4 are Type 4 safety light curtains specifically designed to safeguard smaller points of operation and access on compact machines.

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EZ-SCREEN LS2 Type 2 Light Curtains

Designed for lower-risk applications such as bump or bruise, knock-down, trapping but not crushing, or minor cuts and abrasions.

Economical and compact

Features simple, two-piece integrated system with no control box

Available in trip (auto reset) or latch (manual reset) models

1. Select Emitter and Receiver

Family	System Type	Resolution		Defined Area		Termination
LS2	TP	30	–	150		Q88
	E = Emitter **TR** = Trip Receiver **TP** = Trip Pair **LR** = Latch Receiver **LP** = Latch Pair	**30** = 30 mm		**150** = 150 mm **300** = 300 mm **450** = 450 mm **600** = 600 mm **750** = 750 mm **900** = 900 mm	**1050** = 1050 mm **1200** = 1200 mm **1350** = 1350 mm **1500** = 1500 mm **1650** = 1650 mm **1800** = 1800 mm	**Q8** = 8-pin QD (individual Emitter or Receiver models) **Q88** = For pair: Emitter with 8-pin M12 QD, Receiver with 8-pin M12 QD

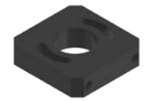
2. Add Brackets

USMB-5

- Retrofit mounting bracket
- 2.3 mm thickness, black zinc-plated, chromate dip finish
- Mounting hardware included: 1 kit required per emitter or receiver

USMB-6

- Universal mounting bracket kit
- 2.3 mm thickness, black zinc-plated, chromate dip finish
- Mounting hardware included: 1 kit required per emitter or receiver



USMB-8

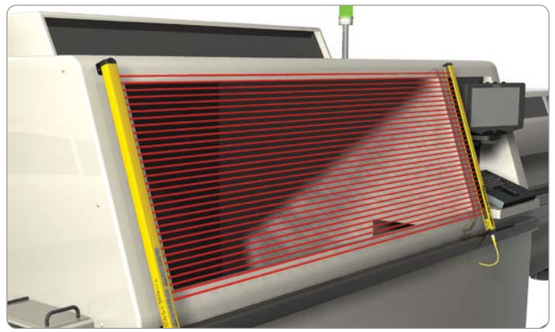
- Low profile mounting plate for 90°sensor direction
- Black anodized aluminum
- Uses two M4 screws (user supplied) for through-hole mounting
- 1 kit required per emitter or receiver

3. Add Cordsets

8-Pin M12 with Flying Leads

QDE-815D
4.5 m (15')
QDE-825D
7.6 m (25')
QDE-850D
15.2 m (50')

The Type 2 EZ-SCREEN safety light screen protects hands and fingers from being bumped, bruised, or pinched by the moving parts of a carousel.



The Type 2 EZ-SCREEN safety light screen guards the opening to a chip shooter, which has moving parts that can cause painful but usually temporary injuries.

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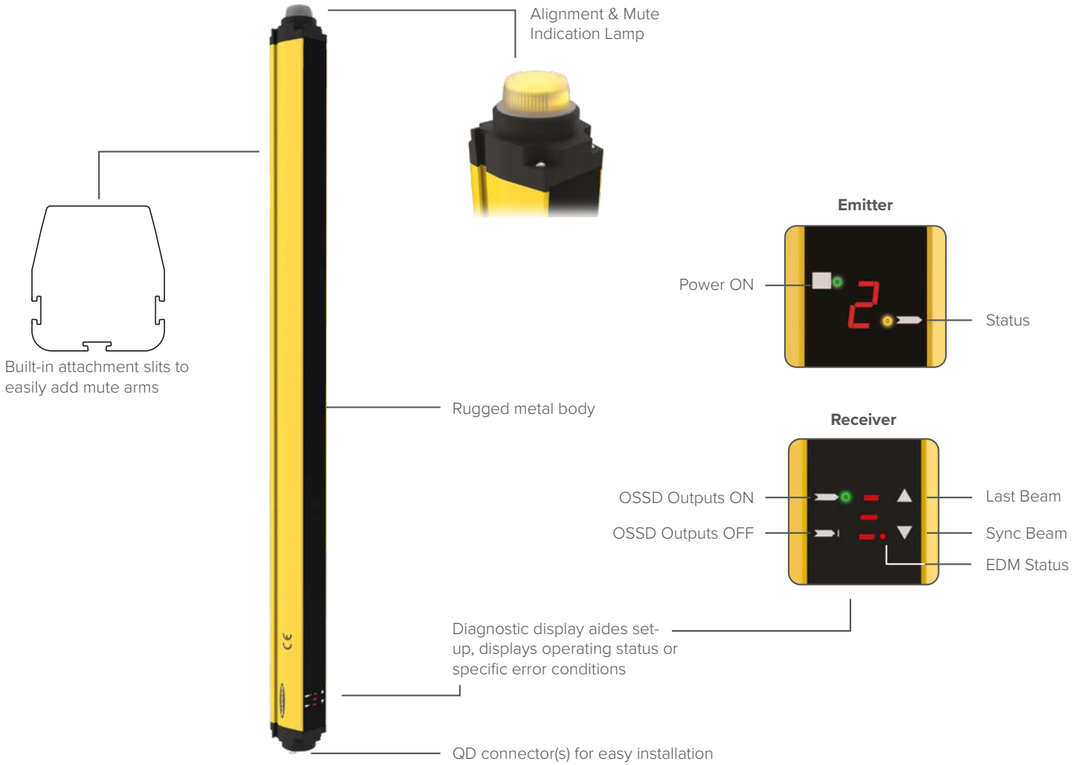
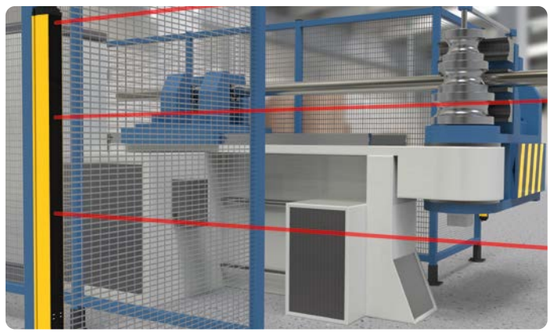
SGS Type 4 Safety Light Grids

Two to four beam Type 4 safety light grids protect personnel from injury and machines from damage by guarding access, areas, and perimeters. Able to detect a body in a cost-effective and heavy-duty safety light curtain package.



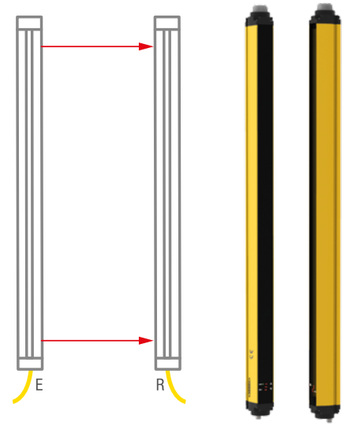


SGS Safety Grid Systems, with two, three, or four beams, are used to monitor the perimeter of the work area.

SGS Safety Grid Systems are available in Emitter/Receiver models capable of safeguarding over very long distances and in easy-to-deploy Active/Passive models.

SGS Emitter/Reveiver

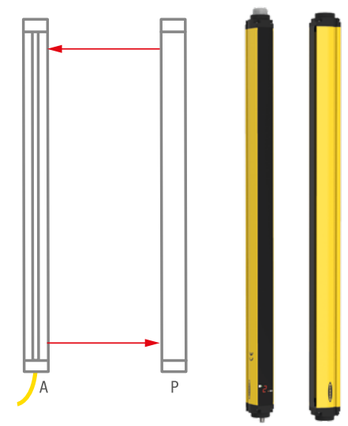
- When compared to higher resolution light screens, a lower cost option for body detection applications
- Available with integral muting
- Long range, up to 60 m



Type	Range (m)	Integral Muting	Protective Height (mm)	Models
Emitter & Receiver	6 to 60	No	500 (2 beams)	**SGSXP2-500Q88**
			800 (3 beams)	**SGSXP3-400Q88**
			900 (4 beams)	**SGSXP4-300Q88**
			1200 (4 beams)	**SGSXP4-400Q88**
	0.5 to 30	No	500 (2 beams)	**SGSSP2-500Q88**
			800 (3 beams)	**SGSSP3-400Q88**
			900 (4 beams)	**SGSSP4-300Q88**
			1200 (4 beams)	**SGSSP4-400Q88**
	0.5 to 30	Yes	500 (2 beams)	**SGSMP2-500Q128**
			800 (3 beams)	**SGSMP3-400Q128**
			900 (4 beams)	**SGSMP4-300Q128**
			1200 (4 beams)	**SGSMP4-400Q128**

SGS Active/Passive

- Active transceiver contains emitter and receiver
- Reduces overall wiring costs
- Available with integral muting
- Up to 8 m range



Type	Range (m)	Integral Muting	Protective Height (mm)	Models
Active Transceiver	0.5 to 8	No	500 (2 beams)	**SGSSA2-500Q8**
			800 (3 beams)	**SGSSA3-400Q8**
	0.5 to 6.5		900 (4 beams)	**SGSSA4-300Q8**
	0.5 to 8		1200 (4 beams)	**SGSSA4-400Q8**
	0.5 to 8	Yes	500 (2 beams)	**SGSMA2-500Q12**
			800 (3 beams)	**SGSMA3-400Q12**
	0.5 to 6.5		900 (4 beams)	**SGSMA4-300Q12**
	0.5 to 8		1200 (4 beams)	**SGSMA4-400Q12**

Passive Mirror

Type	Range (m)	Protective Height (mm)	Models
Passive Mirror Assembly	Pair with Active Transceivers with matching beams and protective heights	500 (2 beams)	**SGSB2-500**
		800 (3 beams)	**SGSB3-400**
		900 (4 beams)	**SGSB4-300**
		1200 (4 beams)	**SGSB4-400**

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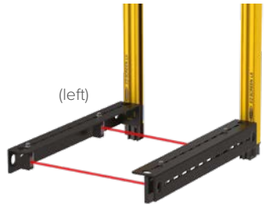
SGS Safety Light Grids Continued

Mute Arm Kits

Preassembled (with mounting hardware) for plug-and-play connection to the SGS grid and LS Safety Light Curtains

- Wiring connection block or cable accessories available
- Adjusts easily for line changes
- Hardware kit to attach mute arms to LS curtains, EZLSA-MCB-HW, ordered separately from mute arm kits

L-Configuration

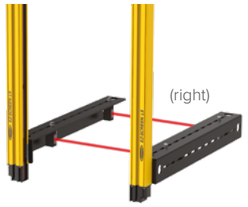


SGSA-ML-L-LPQ20
Includes 2 mute arms, 2 SGSA-Q20PLPQ5 mute sensors, and 2 retroreflectors

T-Configuration

SGSA-MT-LPQ20
Includes 4 mute arms, 4 SGSA-Q20PLPQ5 mute sensors, and 4 retroreflectors

X-Configuration



SGSA-ML-R-LPQ20
Includes 2 mute arms, 2 SGSA-Q20PLPQ5 mute sensors, and 2 retroreflectors

SGSA-MX-LPQ20
Includes 4 mute arms, 2 SGSA-Q20PLPQ5 mute sensors, and 2 retroreflectors

Integral muting models have muting technology built into the device eliminating the need for an external muting controller. Preassembled muting arm kits are available in T, L and X configurations. The muting kits use premounted hardware and Q20 retroreflective sensors and reflectors.

Benefits of Muting

- Maintain high safety standards while allowing for a predetermined object to break a beam
- Limit downtime by not unnecessarily shutting down a conveyor or robot cell

Applications

- Assembly and packaging machines
- Automated production equipment
- Robotic work cells
- Automated warehouses
- Palletizers

Mute Connection Options

Description	Models
Connection box for X, L or T mute arm kits	**SGSA-MCB**
Connection cable for X and L mute arm kits	**SGSA-MCS-2**
Connection cable for T mute arm kits	**SGSA-MCS-4**
Optional hardware kit for mounting mute connection box, or mute connection cable to the t-slot of SGS Receiver or Active Unit	**SGSA-MCB-HW**

Stands and Corner Mirrors

SGSA-S Series Enclosures

Fits SGS Models	# of Windows	Enclosure Height	Distance from Floor to Bottom Window	Distance between Beams	Enclosure Models
SGS..4-300Q..	4	1543 mm (60.75")	300 mm (11.8")	300 mm (11.8")	**SGSA4-S300**
					SGSA4-S300-M
SGS..3-400Q..	3	1238 mm (48.78")	300 mm (11.8")	400 mm (15.8")	**SGSA3-S400**
					SGSA3-S400-M
SGS..4-400Q..	4	1618 mm (63.69")	300 mm (11.8")	400 mm (15.8")	**SGSA4-S400**
					SGSA4-S400-M
SGS..2-500Q..	2	1035 mm (40.75")	400 mm (15.8")	500 mm (19.7")	**SGSA2-S500**
					SGSA2-S500-M

SSM Series Corner Mirrors

Fits SGS Models	Reflective Area	Mounting Area	Mirror Height	Mirror Models
SGS..2-500..	550 mm (21.7")	661 mm (26.0")	628 mm (24.7")	**SSM-550**
SGS..3-400..	825 mm (32.5")	936 mm (36.9")	903 mm (35.6")	**SSM-825**
SGS..4-300..	975 mm (38.4")	1086 mm (42.8")	1053 mm (41.5")	**SSM-975**
SGS..4-400..	1275 mm (50.2")	1386 mm (54.6")	1353 mm (53.3")	**SSM-1275**

MSA Series Stands

Pole Height	Usable Stand Height	Stand Models
1676 mm (66")	1550 mm (61")	**MSA-S66-1**
2134 mm (84")	2007 mm (79")	**MSA-A84-1**
2667 mm (105")	2667 mm (100")	**MSA-S105-1**

Cables

8-Pin M12 with Flying Leads

QDE-815D
4.5 m (15')
QDE-825D
7.6 m (25')
QDE-850D
15.2 m (50')

12-Pin M12 with Flying Leads

QDE-1215E
4.5 m (15')
QDE-1225E
7.6 m (25')
QDE-1250E
15.2 m (50')

Brackets

SA-MBK-10-4

End-mount bracket

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Choosing a Banner Safety Scanner

Start with
the SX5-B6

- 275° field of view
- 5.5 meter range
- Integral muting

If the following are needed:
- 2 OSSD pairs
- Master/remote
- 10 zone sets

select SX5-M10

If the following is needed:
- 3 OSSD pairs
- 70 zone sets
- Muting/bypass option

select SX5-M70

If the following is needed:
- Encoder inputs

select SX5-ME70

	SX5-B6	SX5-M10	SX5-M70	SX5-ME70	SX5-R
Description	Stand Alone	Master	Master	Master	Remote
OSSD Pairs	1	2	3	3	
Removable Memory		✓	✓	✓	✓
Replaceable Window	✓	✓	✓	✓	✓
Zone Sets	6	10	70	70	Master

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Safety Scanner Selection Guide

	SX5-B6	SX5-M10	SX5-M70	SX5-ME70	SX5-R
	p. 36	p. 36	p. 36	p. 36	p. 36
Dimensions W x D x H (mm)	102 x 112 x 152	102 x 112 x 152	102 x 112 x 152	102 x 112 x 152	102 x 112 x 152
Presence Detection	50/70 mm	50/70 mm	50/70 mm	50/70 mm	50/70 mm
Body Detection	70/150 mm	70/150 mm	70/150 mm	70/150 mm	70/150 mm
Hand Detection	30/40 mm	30/40 mm	30/40 mm	30/40 mm	30/40 mm
Range (depending on resolution)	30 mm = 2.5 m 40 mm = 3 m 50 mm = 4 m 70/150 mm = 5.5 m	30 mm = 2.5 m 40 mm = 3 m 50 mm = 4 m 70/150 mm = 5.5 m	30 mm = 2.5 m 40 mm = 3 m 50 mm = 4 m 70/150 mm = 5.5 m	30 mm = 2.5 m 40 mm = 3 m 50 mm = 4 m 70/150 mm = 5.5 m	30 mm = 2.5 m 40 mm = 3 m 50 mm = 4 m 70/150 mm = 5.5 m
Max. Zone Sets (depending on configuration)	6	10	70	70	depending on master
Master Remote		Master (up to 3 remotes)	Master (up to 3 remotes)	Master (up to 3 remotes)	Remote
Removable Memory		SXA-RM-10	SXA-RM-70	SXA-RM-70	
Speed Monitoring				✓	
Max. OSSD Outputs (depending on configuration)	1x 2 OSSD	2x 2 OSSD	3x 2 OSSD	3x 2 OSSD	
Inter Device Connection		8-Pin M12	8-Pin M12	8-Pin M12	8-Pin M12
Integral Muting	✓	✓	✓	✓	✓
Programmable Dust Filter	✓	✓	✓	✓	✓
Measurement Data	✓	✓	✓	✓	✓
Field-replaceable Window	✓	✓	✓	✓	✓

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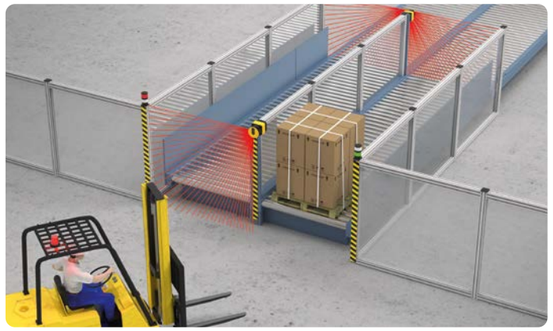
Safety Scanner System

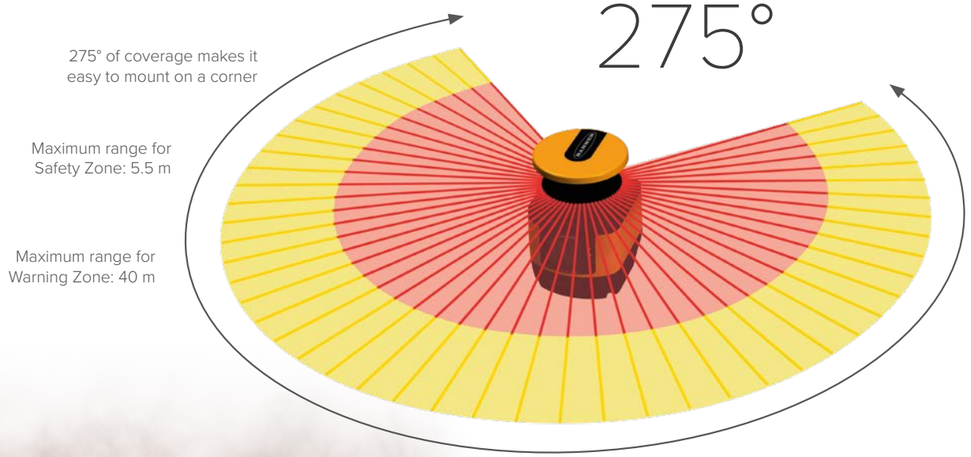
Horizontal or vertical monitoring of both personnel and stationary or mobile systems

SX Series safety laser scanners protect personnel, equipment, and mobile systems by continuously scanning a user-defined area of up to 275° to create a two-dimensional protected zone.

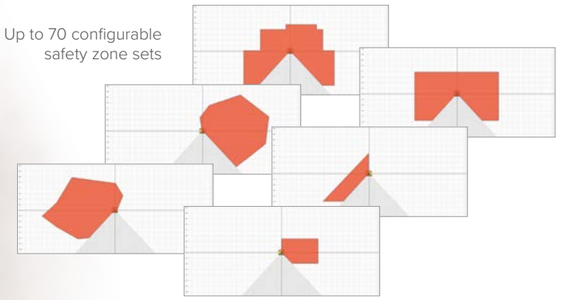


SX5 software configuration allows zone switching for full, right-side and left-side safety protection during this forklift access application.

Software interface makes it easy to create custom safety and warning zones to safeguard large, complex, and irregularly shaped areas.

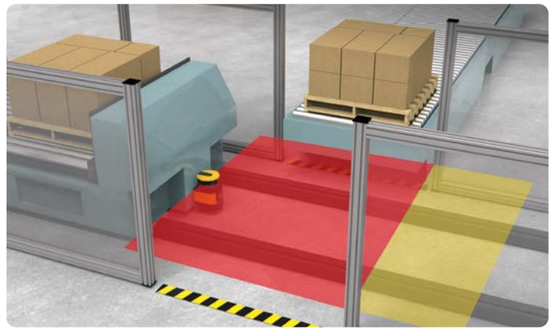


Light Immune and dust resistant – Best in class

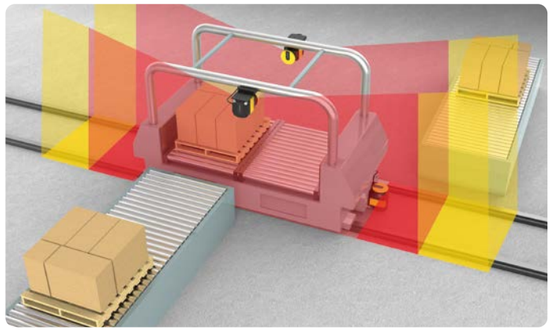


Increased Machine Uptime

The SX5 has on-board LED indicators and a large multi-segment color display that provide at-a-glance system status information so users can quickly identify zone breaches and resolve issues with a minimal amount of equipment downtime.



Compact, one-piece safety device installs easily above and away from area hazards without requiring time-consuming alterations to area infrastructure.



An alert is triggered if an object enters the warning zone and equipment will come to a stop if the safety zone is breached.

Numerous status, diagnostic, warning, and error displays

Dynamic Muting available and selectable detection capability for vertical applications

LED 1: Object Detection in Safety Zone (OSSD)
LED 2: Not Available
LED 3: Assigned to Warning Zone 2
LED 4: Assigned to Warning Zone 1
LED 5: Interlock Status (waiting for Reset)

Rugged design for reliable industrial use

Keypad

M12 Ethernet connector cover for standalone models

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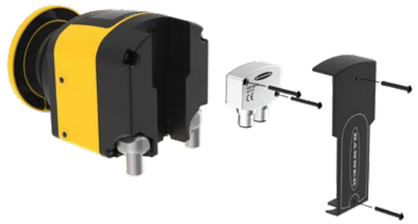
Safety Scanner System

Removable memory for fast scanner replacement

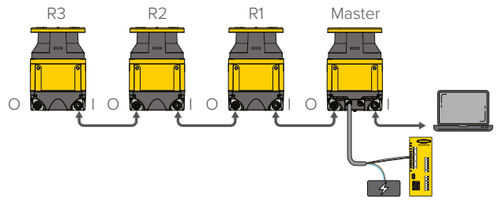
The system configuration is backed up in a removable memory unit. Install your replacement scanner fast and easy, without needing to reconfigure your system. The machine interface cables attach to this memory unit on the Master models.

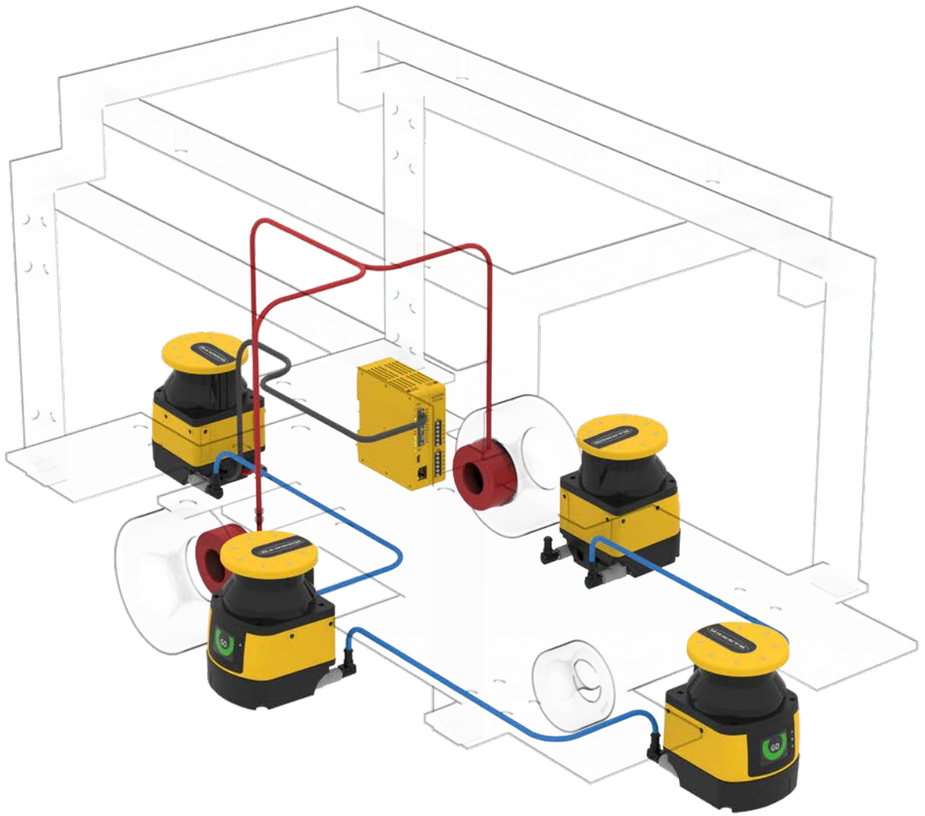


Master and Remote connection reduces wiring

For applications that require monitoring multiple sides of an AGV, up to four scanners can be easily connected through an Ethernet-based safe communications bus, working as a single system.

Each remote unit is connected to the master by a single cable that provides them with power, and the memory of the entire system is stored in the master.

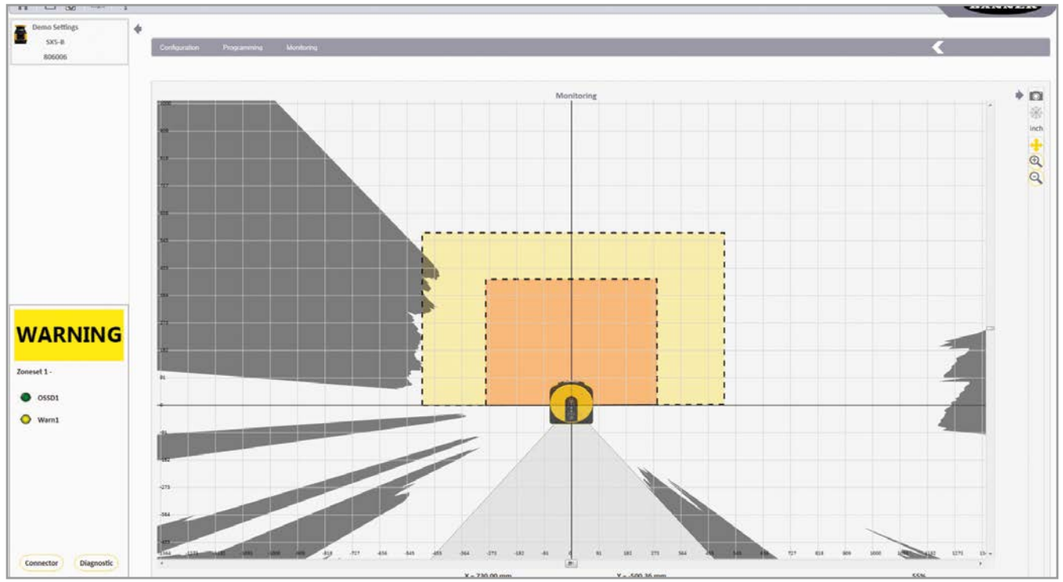


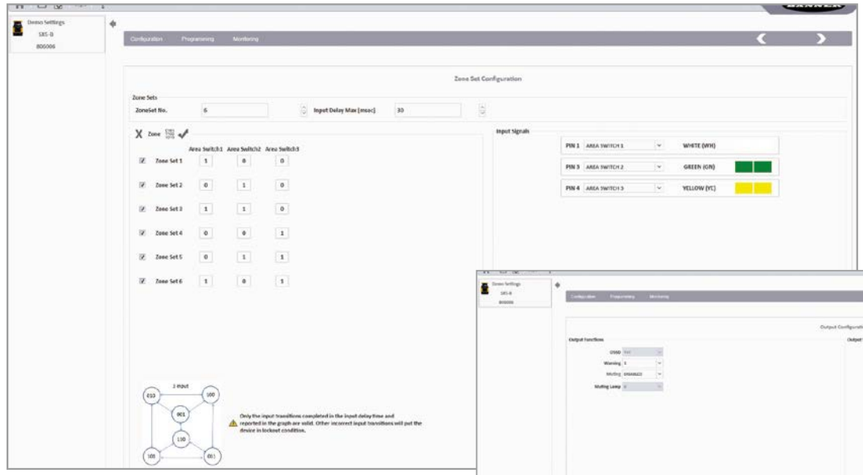


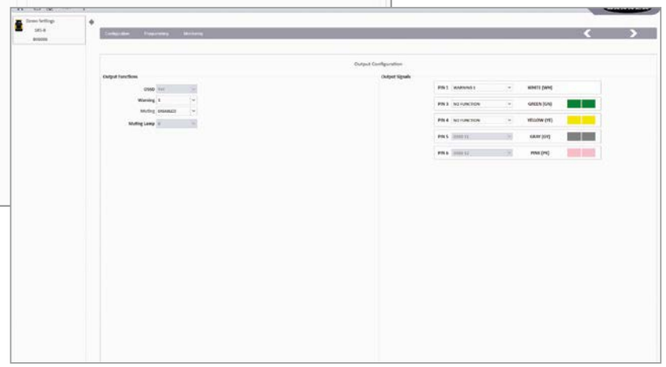
Safety Scanner Software

Simple setup for rapid deployment

The SX5 can be set up in just a few simple steps using Banner's free configuration software. This robust software features menu-driven tools that guide users through setup and make it easy to design custom safety and warning zones to accommodate existing infrastructure and meet the specific needs of any application.







The software displays a graphic rendering of the monitored area and provides configuration and management tools, such as drop-down menus, function-specific worksheets, and more.

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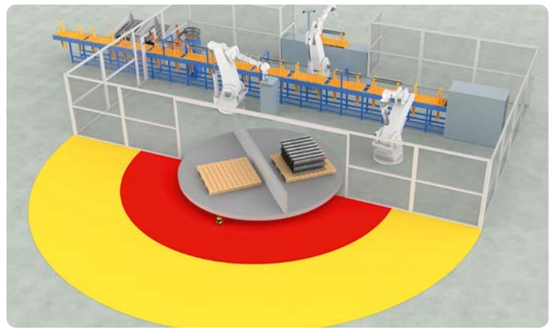
Safety Scanner Fixed Applications

Stationary area guarding

Stationary area guarding uses sensing fields such as safety or warning zones to continually sense an individual within a safeguarded area. Stationary area guarding can reduce or eliminate the possibility of a pass-through hazard that could result in an individual being exposed to unexpected machine startup or motion.



Single-zone safeguarding

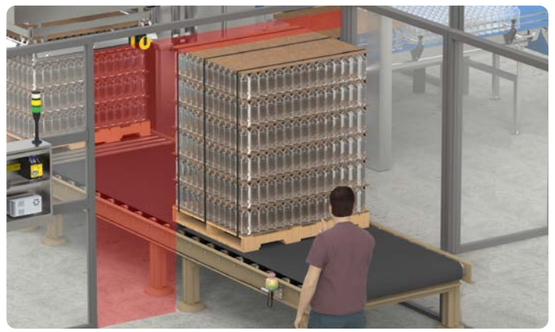
The safety scanner detects when a person approaches a hazard. When the person enters a warning zone, the hazardous motion is controlled safely. When the person enters the safety zone, the hazard is stopped.

Multi-zone safeguarding

Up to three safety zones can be monitored simultaneously and independently. This way, safety in the entire plant is optimized, ensuring increased productivity and improved ergonomics in the entire plant.

Multi-zone safeguarding via master-remote

Manage multiple areas with master-remote architecture. Multiple safety zones stop different parts of the dangerous machine, without the need of an external controller.



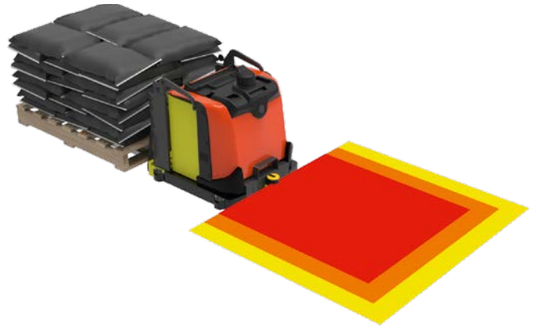
Safeguarding with dynamic and partial muting

Muting sensors can be directly connected to the SX5, creating a tightly protected area around the muted object while muting is active. Each safety output can be configured with its own muting requirements.

Safety Scanner Mobile Applications

Mobile area guarding

On mobile applications, the SX5 monitors the area directly ahead of the vehicle using both the warning and the safety zones. The vehicle slows down if something is detected in the warning zone and the vehicle stops when something is detected in the safety zone. If the speed increases or decreases, alternate zone sets can be used to adjust for varying stopping distances.

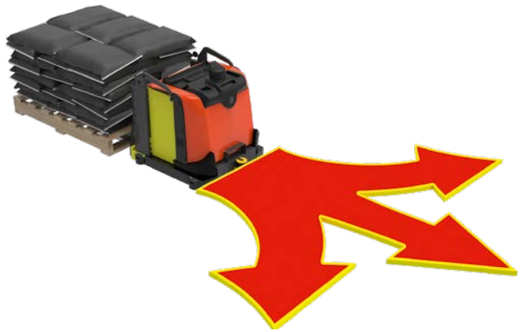


Automated guided vehicle collision avoidance

Warning and safety zones can be used to alert operators, slow down the vehicle, or stop it. Up to 70 different zones can be set and activated per position, speed and movement of the vehicle.

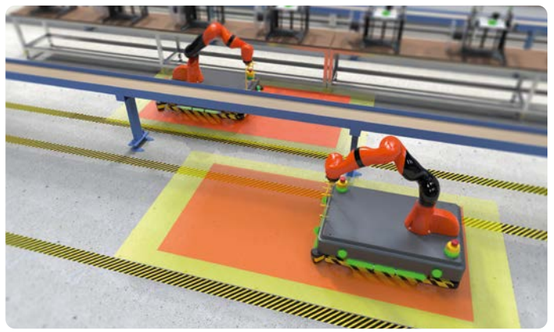
Safe speed monitoring

Incremental encoders inputs can be directly read by the SX5 scanner in order to select the appropriate slow-down and stopping areas, based on the speed of the vehicle.



Advanced measurement data for direct navigation

The SX5 has a direct transmission protocol over Ethernet. It can be used to read measurement data for vehicle navigation. Data includes active zone, I/O status, measured speed, intensity of beams, and diagnostic.



Collaborative robot monitoring

Mobile collaborative robots (cobots) have built-in safety features that enable them to work alongside humans. Cobots can be programmed to slow down or stop when a human enters the warning or safety zone.

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Choosing a Banner Relay and Controller

Start with the SC10

- PC configured logic
- 10 safe inputs
- 2 independent safe outputs
- In-Series Diagnostics
- Ethernet/IP, Profinet, Modbus TCP

If the following are needed:
- More than 10 safe inputs
- More than 2 safe outputs
- Network access

select SC26

If the following is needed:
- Up to 138 safe inputs
- Up to 68 safe outputs
- EtherCAT
- In-Series Diagnostics
- Network access

select XS26

If the following are needed:
- Pre-configured logic
- One safe input
- One safe output

select Safety Relays

	SC10	Safety Relay	SC26	XS26
Configurable Logic	✓		✓	✓
Safe Inputs	10	1	26	Up to 154
Safe Outputs	2	1	2	Up to 64
ISD (In-Series Diagnostics)	✓			✓
Modbus TCP/IP PROFINET EtherNet/IP	✓		✓	✓
EtherCAT				✓
Configure and Live View Through Network			✓	✓

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Relay and Controller Selection Guide

	GM/ES	UM	SM	AT	MMD	SSM	SR	IM	EM	SC10	SC26/XS26
	p. 46	p. 46	p. 46	p. 46	p. 46	p. 46	p. 46	p. 46	p. 46	p. 48	p. 48
Device Type		Preconfigured Safety Relay Modules					Preconfigured Safety Relay Modules			Configurable Controllers	
Self Testing Safety Device		✓			✓					✓	✓
Self Testing Safety Device with EDM Function		✓			✓		✓	✓		✓	✓
E-Stop	✓	✓			✓ (secondary function)					✓	✓
Rope Pull	✓	✓			✓ (secondary function)					✓	✓
Gate Switch (potential free contacts)	✓	✓			✓					✓	✓
RFID Gate Switch (OSSD contacts)		✓			✓					✓	✓
ISD Functionality										2 chains	8 chains
Modbus TCP/IP PROFINET EtherNet/IP										✓	✓
EtherCAT											✓
Network Access and View											✓
Safety Mat Monitoring			✓							✓	✓
Two-Hand Control				✓						✓	✓
Enabling Device	✓	✓								✓	✓
Expandable									✓		✓
Muting					✓					✓	✓
ON/OFF Delay									OFF delay available	✓	✓
Speed Monitoring						✓					
Safety Standard		Cat. 4 PL e, per EN ISO 13849-1; SIL 3 per IEC 61508 and IEC 62061					Cat. 4 PL e, per EN ISO 13849-1; SIL 3 per IEC 61508 and IEC 62061				
Inputs	1 NC and 1 NO (single or dual) 1 NC (single) 2 NC (dual)	1 NC (single) or 2 NC (dual) or 2 PNP	1 (or multiple in series) 4-wire safety mat	2 STB or buttons with complementary contacts	2 NC mutable (dual) and 2 NC SSI (dual)	2 PNP	2 NC (dual) or 2 PNP	2 NC (dual) or 2 PNP	1 NC (single) or 2 NC (dual)	10	SC26: up to 26 XS26: up to 154
Safety Outputs	2 NO, 3 NO, 4 NO	2 NO or 3 NO	4 NO	2 NO	2 PNP OSSD or 2 NO	2 NO	2 NO, 3 NO	2 NO, 3 NO	4 NO or 4 NO with delay	2x 3 NO	SC: 2 XS: up to 68
Maximum Safety Output Rating	6A, 7A	7A	6A	6A	6A	4A	6A	6A	6A	6A each	0.5A each
Auxiliary Outputs	1 NC or 1 NC and 2 PNP	1 NC, depending on model	1 NC and 2 PNP		1 PNP or 1 NC	1 NC	1 NC	1 NC, depending on model		depends on configuration	depends on configuration
Power Supply	24 V AC/DC 115 V AC and 12-24 V DC or 230 V AC and 12-24 V DC	24 V AC/DC	115 V AC and 12-24 V DC or 230 V AC and 12-24 V DC	24 V AC/DC	24 V DC	24 V DC	24 V DC	24 V DC	24 V DC or 24 V AC/DC, depending on model	24 V DC	24 V DC

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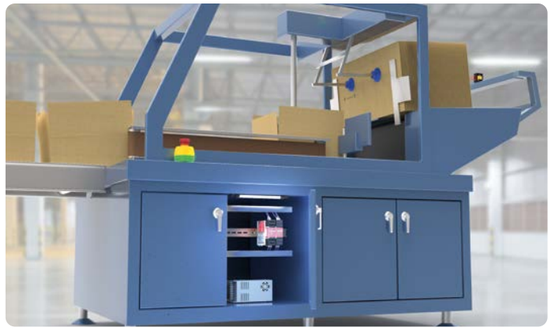
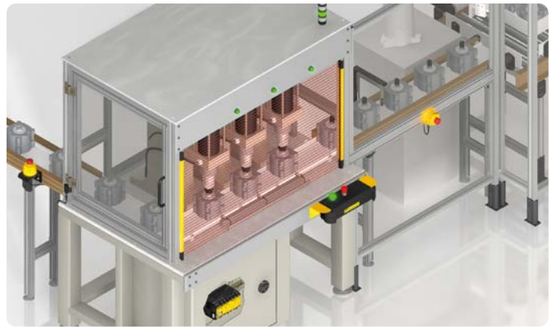
Safety Relays and Controllers



Industrial safety controllers and relays provide an interface between safety devices and the machines and processes those devices monitor for a complete and easy-to-use safety control solution.

Safety controllers can be tailored for a wide variety of machines, including machines with multiple processes.



Configurable controllers monitor multiple safety devices, such as E-stop buttons, safety switches, safety light screens, two-hand controls, and rope pull switches.

Connect safety devices easily to the safety controller

Safety Relays

SR-IM-9A

IM-T-9A

Cost-effective for simple safety circuits

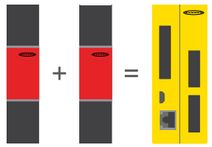
- Preset functionality: Configuration not required
- Safety inputs: 1
- Independently controlled safety outputs: 1; 4 to 7A
- Choose from a variety of models:
  - Universal input safety relays
  - E-stop monitoring safety relays
  - Muting safety relays
  - Safe speed monitoring relays
  - Safety mat relays
  - Safety extension relays
  - Interface relays

Hybrid Safety Controller Plus 2 Safety Relays

SC10

Flexible and cost-effective solution for machines typically using 2 safety relays

- PC configurable: Flexible and easy-to-use
- Safety inputs: up to 10; up to 70 with ISD
- Independently controlled safety outputs: 2; 6A each
- Convertible safety inputs: 4
- Terminal LEDs for easy troubleshooting
- Industrial Ethernet
- Each output contains 3 NO redundant safety contacts

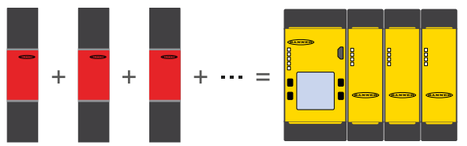


Expandable Safety Controller

XS26

Expandable for complex safety applications where 3 or more safety relays are typically used

- PC configurable: flexible and easy-to-use
- Network accessible: configure and live view via an Ethernet connection (Ethernet enabled XS26 and SC26 models only)
- Safety inputs: 26 (base unit) up to 154
- Independently controlled safety outputs: up to 68; 0.5A to 6A each
- Convertible safety inputs: 8 (Base Unit) up to 40
- LCD screen for easy troubleshooting
- Industrial Ethernet



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Safety Controllers

XS26 Expandable Safety Controller

26 to 154
Safety Inputs

Safety Outputs
Safety Zones: 2 to 64
- 6A Relay 2 NO
- 0.5A Solid State

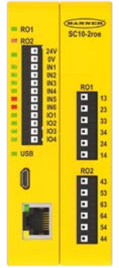
Industrial Ethernet

EtherNet/IP Modbus TCP/IP PROFINET EtherCAT

- Optional display screen allows local diagnostics for efficient troubleshooting
- Up to eight expansion I/O modules can be added as automation requirements grow or change
- Network accessible: configure and live view via optional Ethernet connection (Ethernet enabled XS26 and SC26 models only)
- Choose from six expansion module models with a variety of safety inputs, solid-state safety outputs and safety relay outputs
- Controller and input modules allow safety inputs to be converted to status outputs for efficient terminal use

SC10 Safety Controller

10 Safety
Inputs



Safety Outputs
Safety Zone 1: 6A Relay 3 NO

Safety Zone 2: 6A Relay 3 NO

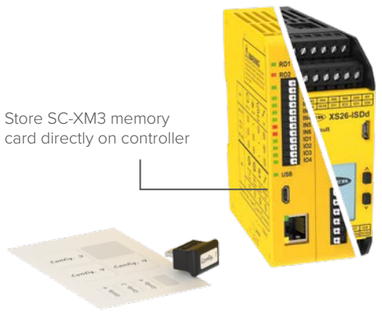
Industrial Ethernet

EtherNet/IP Modbus TCP/IP PROFINET

- 10 safety inputs
- 4 safety inputs allowed to be converted to status outputs for efficient terminal use
- 2 redundant safety outputs
- LED indication next to each output
- Industrial Ethernet two-way communication
- Programmable via USB connection
- In-Series Diagnostic capable

Easy to Configure and Integrate with a PLC

Store SC-XM3 memory card directly on controller

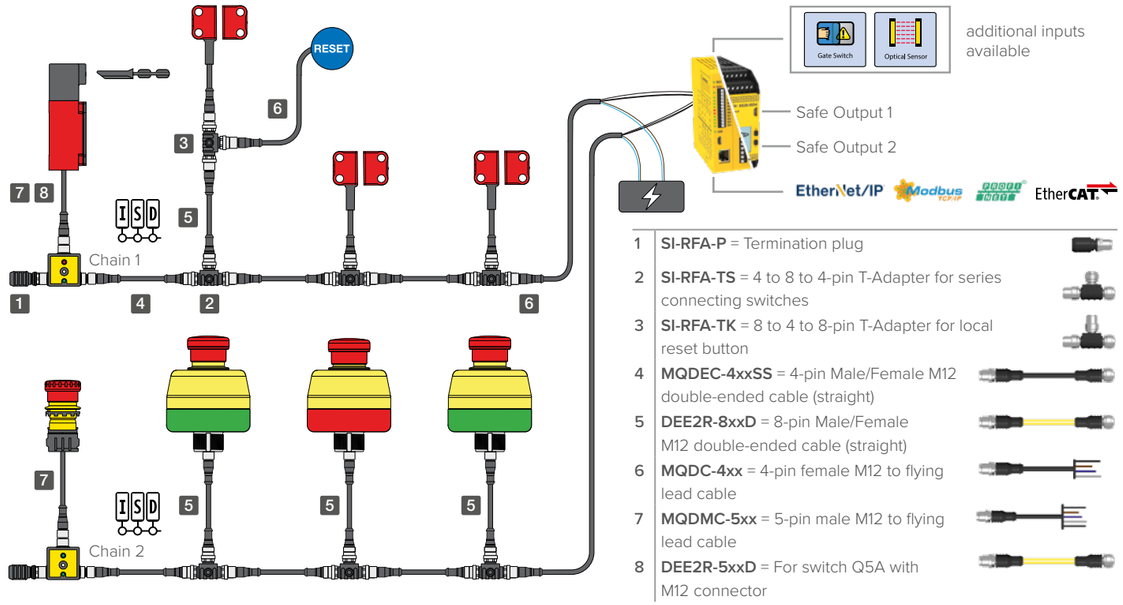


SC-XM3 Fast Programming and Swapout
- Backup copy of configuration, password, network settings
- Download configuration without a PC
- Save time during panel build
- Fast swapout minimizes downtime

- Free Software
- Intuitive PLC Integration

In-Series Diagnostics Functionality

In-Series Diagnostics allows you to connect up to 32 devices with one in-series connection and communicate directly with the most commonly used PLCs. Achieves up to CAT4, SIL3, PLe safety rating.



1	**SI-RFA-P** = Termination plug
2	**SI-RFA-TS** = 4 to 8 to 4-pin T-Adapter for series connecting switches
3	**SI-RFA-TK** = 8 to 4 to 8-pin T-Adapter for local reset button
4	**MQDEC-4xxSS** = 4-pin Male/Female M12 double-ended cable (straight)
5	**DEE2R-8xxD** = 8-pin Male/Female M12 double-ended cable (straight)
6	**MQDC-4xx** = 4-pin female M12 to flying lead cable
7	**MQDMC-5xx** = 5-pin male M12 to flying lead cable
8	**DEE2R-5xxD** = For switch Q5A with M12 connector

Compatible Devices

Family	System Type	Reset		Coding	Connection
SI-RF	**D**	**T**	–	**U**	**P8**
RFID Safety Door Switch	**D** = Cascade with (ISD)	**T** = Automatic (Trip) **L** = Manual (Latch)		**L** = Low **H** = High **U** = Unique	**P8** = 250 mm 8-pin M12 pigtail QD

Family	Color Armed	Color Pressed	Options		Outputs	Enclosure Style	Reset
SSA-EB1PL	**Y**	**R**		–	**0D**	**ECQ8**	**R**
Illuminated E-Stop	**X** = Off **Y** = Yellow Solid **G** = Green Solid	**R** = Red Flashing	**Blank** = Standard **S1** = Shroud Style 1		**0D** = OSSD Outputs with ISD	**ECQ8** = 30 mm Round **ED1Q8** = Flush Mount (square)	**Blank** = Without Local Reset **R** = With Local Reset

Family		Device Input Type	Input Pin Configuration
SSA-ISD	–	**TC**	**A**
ISD Connect		**TC** = 2 NC Sets of Dry Contacts	**A** = 5-Pin Config A

	Pin				
Config	**1**	**2**	**3**	**4**	**5**
A	Ch1a	Ch1b	N/C	Ch2a	Ch2b

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Configure Your System in Minutes

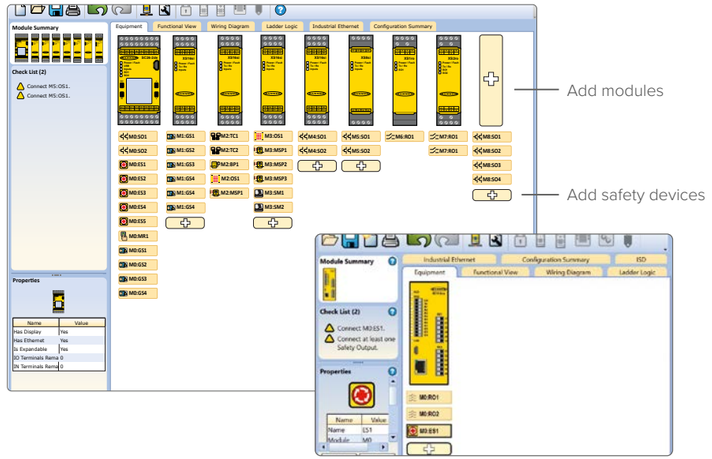
The feature-rich SC10 and SC/XS26 safety controller software provides a seamless user interface for setting up and managing safety systems. The software features an intuitive icon-based, drag-and-drop user interface to reduce the learning curve and speed up commissioning.

- Complex configurations made easy
- Simulate configurations before implementation
- Auto configure Industrial Ethernet for remote monitoring and diagnostics
- Use the same software to access and configure the controller (Ethernet enabled XS26 and SC26 models only)

Start using the **free software** today. Go to www.bannerengineering.com/safetycontroller

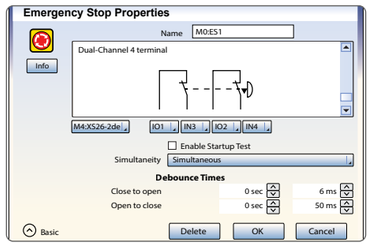
1. Choose Controller

2. Equipment View

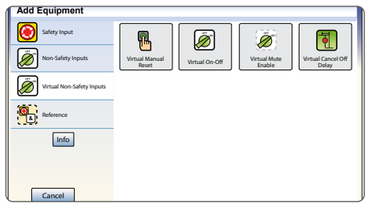


3. Add safety devices

4. Select safety device properties

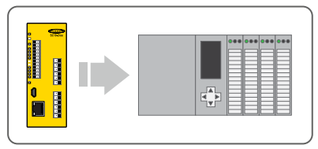


5. Add virtual non-safety inputs

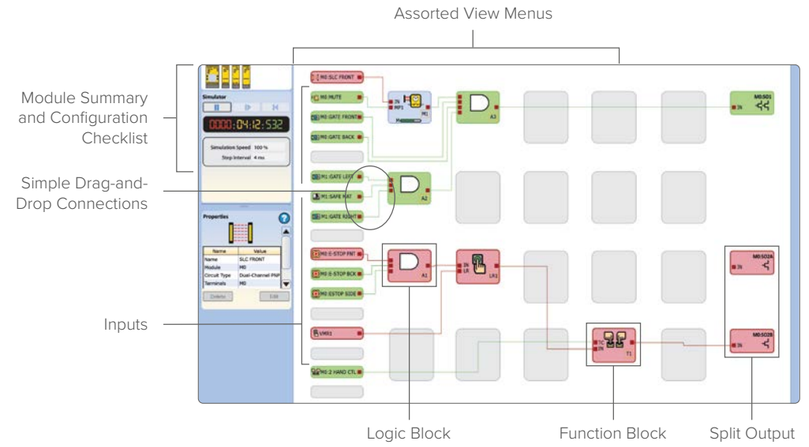


Intuitive setup and PLC integration

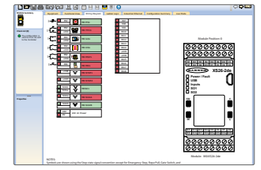
- Expedite PLC Integration with Tag Export Feature
- Eliminates error-prone manual entries
- Import tags to PLC via .csv or .xml files
- Defines actionable In-Series Diagnostic data within the PLC
- For more information visit bannerengineering.com/safetycontroller



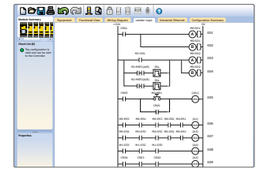
System Software



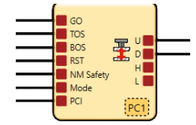
Wiring Diagram in Live Mode



Ladder Logic



Preconfigured Press Control Function Block

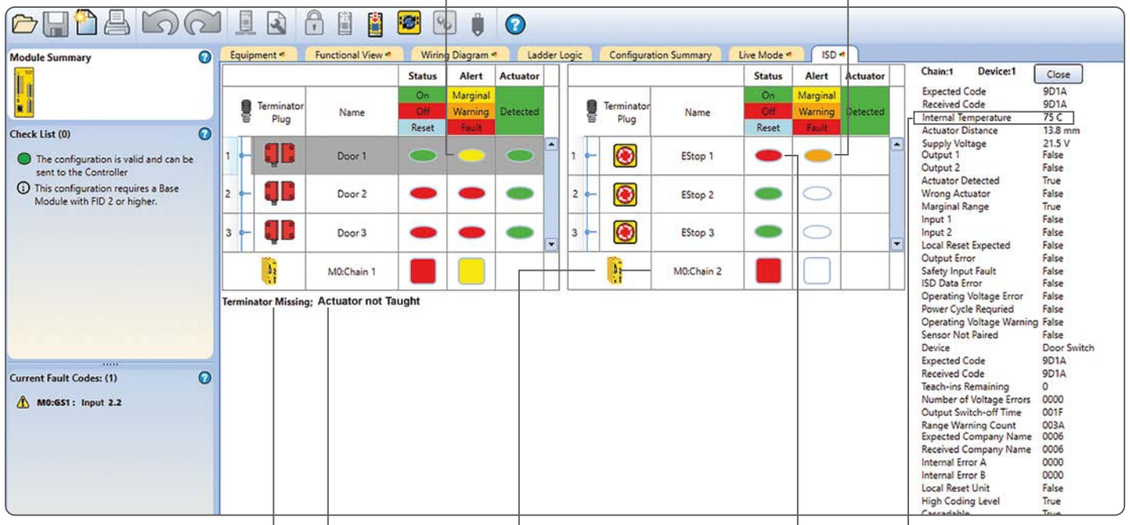


View Live Mode for Current System Status

Prevent Downtime:

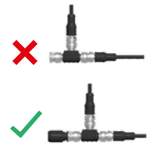
Marginal — Alert to check Door 1 for misalignment **before** it causes downtime

Warning — Alert to check E-Stop 1 for low voltage **before** it causes downtime



Troubleshooting Made Easy:

Terminator missing



Actuator not taught

Up to 32 ISD safety devices in any order per chain

Reduce Downtime:
Local operator guidance to activated E-Stop

Additional uses for ISD

- Rotation/Indexing
- Tool Identification
- Position Verification

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Safety Relays

E-Stop and Guard Safety Modules

Supply Voltage	Inputs	Safety Outputs	Aux. Outputs	Output Rating	Output Response Time	Models
24 V AC/DC	1 NC & 1 NO (single or dual)	2 NO	–	6 A	35 ms	**GM-FA-10J**
	1 NC (single) or 2 NC (dual)	3 NO	–	6 A	25 ms	**ES-FA-9AA**
	1 NC (single) or 2 NC (dual)	2 NO	1 NC	7 A	25 ms	**ES-FA-11AA**
	1 NC (single)	3 NO	1 NC	6 A	35 ms	**ES-FA-6G**
115 V AC & 12-24 V DC	1 NC (single) or 2 NC (dual)	4 NO	1 NC & 2 PNP	6 A	25 ms	**ES-UA-5A**
230 V AC & 12-24 V DC						**ES-VA-5A**

Universal Safety Input Modules

Supply Voltage	Inputs	Safety Outputs	Aux. Outputs	Output Rating	Output Response Time	Models
24 V AC/DC	1 NC (single) or 2 NC (dual) or 2 PNP	3 NO	–	6 A	25 ms	**UM-FA-9A**
		2 NO	1 NC	7 A		**UM-FA-11A**

Modules for Specific Monitoring Applications

Supply Voltage	Inputs	Safety Outputs	Aux. Outputs	Output Rating	Output Response Time	Models
115 V AC & 12-24 V DC	1 (or multiple in series) 4-wire safety mat	4 NO	1 NC & 2 PNP	6 A	50 ms	**SM-GA-5A**
230 V AC & 12-24 V DC						**SM-HA-5A**
24 V AC/DC	1 (2x2 complementary) for two-hand control	2 NO	–		35 ms	**AT-FM-10K**

Muting Modules

Supply Voltage	Input Device	Inputs	Safety Outputs	Aux. Outputs	Output Rating	Output Response Time	Models
24 V DC	Electromechanical & solid state	2 NC muteable (dual) & 2 NC SSI (dual)	2 PNP OSSD	1 PNP	0.5 A	10 ms	**MMD-TA-12B**
			2 NO	1 NC	6 A	20 ms	**MMD-TA-11B**

Safe Speed Monitoring Modules

Supply Voltage	Inputs	Safety Outputs	Aux. Outputs	Output Rating	Ranges (impulses/minute)	Models
24 V AC/DC	2 PNP	2 NO	1 NC	4 A	5-40, 35-340, 300-2700, 1200-10500	**SSM-FM-11A10**
					10-80, 80-650, 600-5300, 2400-20000	**SSM-FM-11A20**

Interface Modules

Supply Voltage	Inputs	Safety Outputs	Aux. Outputs	Output Rating	Output Response Time	Models
24 V DC	2 NC	3 NO	–	6 A	20 ms	**SR-IM-9A**
		2 NO	1 NC			**SR-IM-11A**
		3 NO	–			**IM-T-9A**
		2 NO	1 NC			**IM-T-11A**

Safety Controllers

Non-expandable Safety Controllers

Description	Housing H x W x D (mm)	Inputs/ Convertible	Independently Controlled Safe Outputs	Maximum Safety Output Rating	Features	Models (24 V DC)
SC26 Safety Controller	110 x 45 x 128	26/8	2 Dual Channel PNP	0.5A at 24 V DC	Display	**SC26-2d**
					Display, Ethernet	**SC26-2de**
					–	**SC26-2**
					Ethernet	**SC26-2e**
SC10 Safety Controller	115 x 45 x 100	10/4	2 Dual Channel Relays	2x 3 NO: 6A 250 V AC/ 24 V DC	ISD, Ethernet	**SC10-2roe**

Expandable Safety Controllers

Description	Housing H x W x D (mm)	Inputs/ Convertible	Independently Controlled Safe Outputs	Maximum Safety Output Rating	Features	Models (24 V DC)
XS26 Expandable Safety Controller	110 x 45 x 128	26/8	2 Dual Channel PNP	0.5A at 24 V DC	Display	**XS26-2d**
					Display, Ethernet	**XS26-2de**
					–	**XS26-2**
					Ethernet	**XS26-2e**
					ISD	**XS26-ISDd**
Safety Input Module	W: 22.5 mm	8/2	–	–	–	**XS8si**
		16/4	–	–	–	**XS16si**
Safety Output Module		–	2 Dual Channel PNP	0.75A at 24 V DC	–	**XS2so**
		–	4 Dual Channel PNP	0.5A at 24 V DC	–	**XS4so**
Safety Relay Output Module		–	1 Dual Channel Relay	6A; 2 NO, 1 NC Aux (2.5A)	–	**XS1ro**
		–	2 Dual Channel Relays	6A; 2x 2 NO, 2x 1 NC Aux (2.5A)	–	**XS2ro**
Network Expansion Module		–	–	–	Ethercat	**XSeCAT**

Expansion Modules

Supply Voltage	Inputs	Safety Outputs	Output Rating	Aux. Outputs	Output Response Time	Delay	Models
24 V DC	1 NC (single) or 2 NC (dual)	4 NO	6 A	–	20 ms	–	**EM-T-7A**
				–	35 ms	–	**EM-F-7G**
24 V AC/DC	1 NC (single)	4 NO w/delay		–	–	0.5 s	**EM-FD-7G2**
				–	–	1.0 s	**EM-FD-7G3**
				–	–	2.0 s	**EM-FD-7G4**

Accessories

SC-USB2
USB Cable

SC-XM2
Memory Card for XS26 and SC26

SC-XM3
Memory Card for SC10

SC-XMP2
SC-XM2/3 Configuration Tool

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Choosing a Banner Safety Switch

Start with
the SI-MAGB

- Non-contact safety switch
- 3 to 5 mm misalignment tolerance
- IP67 Rated
- Single sensor at SIL3, Ple, Cat 4

If the following are needed:
- Locking

select SI-GL42

If the following are needed:
- ISD
- Daisy Chain at SIL3, PLE Cat4
- 10 mm misalignment tolerance
- IP69 rated

select SI-RF

If the following are needed:
- Position detection

select SI-LS83

If the following are needed:
- Mechanical latch
- Hinge function

select SI-HG63
or Mechanical

	SI-MAGB Mag Switch	SI-GL42 Locking Switch	SI-RF RFID Switch
Safety Rating (single sensor)	Ple, CAT4	Plc, CAT3*	Ple, CAT4
Environmental Rating	IP67	IP67	IP69
ISD (In-Series Diagnostics)		ISD Connect Ready	✓
Tamper Resistance - Coding Level	Low	Low	Low, High, Unique
Assured On Sao / Misalignment Tolerance (mm)	3 to 5		10

	SI-LS83 Limit Switch	SI-HG63 Hinge Switch	Mechanical Switches
Safety Rating (single sensor)	Plc, CAT3*	Plc, CAT3*	Plc, CAT3*
Environmental Rating	IP65	Up to IP69	IP65
ISD (In-Series Diagnostics)		ISD Connect Ready	ISD Connect Ready
Tamper Resistance - Coding Level	Low	Low	Low
Assured On Sao / Misalignment Tolerance (mm)			

*Ple/Cat 4 achieved with applicable second safety switch added

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Safety Switches Selection Guide

	SI-MAG	**SI-RF**	**SI-LS**	**SI-QS**	**SI-LM40**	**SI-GL42**	**SI-LS42**	**SI-LS83**	**SI-HG63**	**SI-HG80**
	p. 58	p. 60	p. 58	p. 58	p. 58	p. 58	p. 58	p. 58	p. 58	p. 58
Device Type	Magnetic	RFID	Lockable		Lockable				Hinge	
Switch Style	Non-Contact	Non-Contact	Separate Actuator	Separate Actuator	Separate Actuator	Separate Actuator	Separate Actuator	Limit	Hinge	Hinge
Non-Locking	✓	✓	✓	✓	✓			✓	✓	✓
Locking						✓	✓			
Position	✓	✓						Plunger, Roller, Spindle-mount, Lever		
Contacts	1 NC, 1 NO	OSSD PNP	2 NC, 1 NO 1 NC, 1 NO 2 NC	1 NC, 1 NO 2 NC 2 NC, 1 NO 1 NC	1 NC, 1 NO 2 NC 2 NC, 1 NO	1 NO 1 NC 1 NC, 1 NO 2 NC 2 NC, 1 NO 3 NC	1 NC, 1 NO 2 NC, 1 NO 1 NC 2 NC 3 NC	1 NC, 1 NO 2 NC 2 NC, 1 NO	2 NC, 1 NO	SPDT
Locking or Unlocking Power						24 V AC/DC	24 V AC/DC 110 V AC/230 V AC			
Straight Rigid Inline			✓		✓	✓	✓			
Rigid Inline			✓	✓		✓				
Flexible Inline			✓	✓	✓	✓	✓			
High-Force Accessory				✓						
LED Status Indication		✓								
Cascadable		✓								
ISD (In-Series Diagnostics)		✓								
Coding level / Manipulation protection EN ISO 14119	Low coding	Unique/Low/High coding	Low coding	Low coding	Low coding	Low coding	Low coding	Uncoded	Uncoded	Uncoded
Housing Material	Plastic	Plastic	Plastic	Plastic	Metal	Head: Metal Body: Plastic	Plastic	Plastic	Metal	Metal
Locking						Spring lock Solenoid lock	Spring lock Solenoid lock			
Actuation Extraction Force			10 N	10 N High-Force models: adjust. from 50-100 N	10 N, 20 N	1500 N when locked	2000 N when locked			

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Safety Switches

The SI-GL42D fail-safe guard locking switch has several guard locking options: manual, spring-to-lock, or power-to-lock.

The safety switch can manually be unlocked using a tool in case of maintenance work. Emergency or escape release are additional functions that allow for quick intervention when required.

In spring-to-lock models, the guard is locked by spring force. To unlock, the solenoid must be energized.

In power-to-lock models, the guard is locked when the solenoid is energized. To unlock, power must be switched off.

Hinge Switches

- One-piece sensor and actuator with hinge function
- Fast installation and setup with repositionable safety switch point
- Stainless steel and IP69 available
- Matching hinges without sensing available for additional door support
- Available with up to 270° safety switch point operation range

Non-Contact Switches

- Two-piece design where sensor and actuator do not contact
- Coded magnets/tags minimize the potential for intentional defeat
- A single pair can achieve up to Category 4/PLe safety rating
- Accommodating to misalignment
- Non contact solution minimizes device wear and tear, even in applications with persistent use
- Up to IP69 solutions available

Mechanical Switches

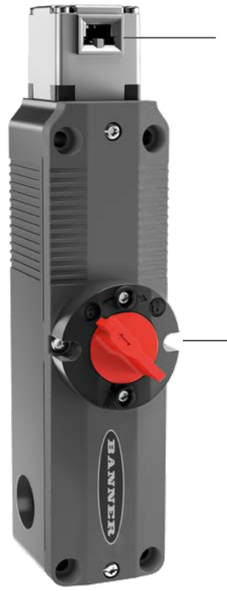
- Two-piece design with mechanical operator feedback
- Flexible actuator options for misalignment
- Rotatable heads for flexible installation
- Mechanically coded actuator to minimize tampering
- Up to 15N latching force to reduce downtime due to vibrating doors
- One-piece limit switches available

Locking Switches

- Two-piece design with up to 2000N locking force for safety or process critical applications
- Flexible actuator options for misalignment
- Rotatable heads for flexible installation
- Mechanically coded actuator to minimize tampering
- Up to 15N latching force to position door prior to locking

Limit Switches

- Cost effective one piece sensor
- No actuator allows for fewer alignment issues
- Hideable making them more tamper resistant
- Rotating head and top or side engagement allows for eight different actuator positions
- Design meets positive opening requirements for safety switches

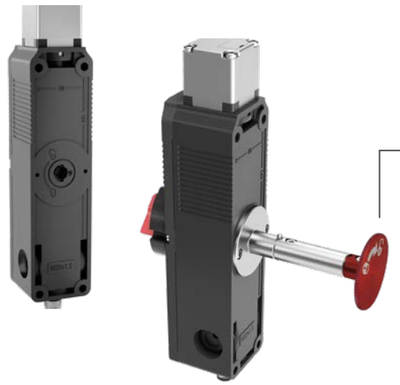


Rotatable actuator heads enable a variety of mounting positions: standard, vertical, horizontal, slight vertical/horizontal offset, small actuating radius

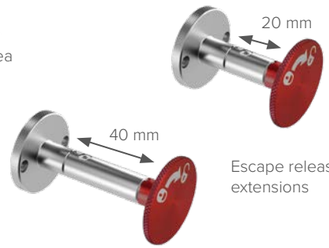
Emergency release enables immediate opening from outside dangerous area

Lock/unlock mechanism

M12 connector options are available



Escape release enables immediate opening from within the dangerous area



Escape release extensions

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Non-Contact RFID Safety Switches

Safety switches respond when a mechanical guard is opened. They feature “positive opening” contacts for high reliability regardless of environmental conditions and withstand attempts to override the switch and defeat the system.

RFID SI-RF Switches

Single door RFID non-contact gate/door sensing solution

- Basic, medium, and high tamper resistance
- Misalignment tolerance of 10 mm
- Resistant to high vibration and operations with metallic shavings
- On-board LED for status and diagnostics

RFID SI-RF Switches – Cascade

Multiple door RFID non-contact gate/door sensing solution

- Basic, medium, and high tamper resistance
- Misalignment tolerance of 10 mm
- Resistant to high vibration and operations with metallic shavings
- On-board LED for status and diagnostics
- Connect up to 32 sensors in cascade while maintaining the highest level of safety
- 4-pin QD connections for cost-effective, simple, error-free installation
- RFID cascade with In-Series Diagnostics available

Enabling Devices

A two-hand control safeguarding system will prevent the operator from approaching the machine while a hazard is present. Duo-Touch Run Bar provides an all-in-one solution.

Handheld grip-styled switches are used for manual control of machine functions including visual observations, minor adjustments, calibration, and more.

Two-Hand Control

STB Self-Checking Touch Buttons

Connection	Touch Surface Material	Output	Power Supply	Models
2 m cable	Polyetherimide (PEI)	Solid-state 2 Complementary PNP (1 ON, 1 OFF)	10-30 V DC	**STBVP6**
4-pin M12 QD				**STBVP6Q5**
2 m cable		E/M Relay 2 Complementary SPST (1 NC, 1 NO)	20-30 V AC/DC	**STBVR81**
5-pin M12 QD				**STBVR81Q6**

STB buttons include yellow field cover to prevent unintended switching. To comply to safety standards, STB buttons must be used with appropriate Two-Hand control modules, SC26, XS26 or SC10 Safety Controller or comparable Type IIIC Two-Hand system.

DUO-TOUCH Two-Hand Control Kits with STB Touch Buttons
2 NO safety outputs, no auxiliary outputs, 24 V AC/DC, Cat 4 and Type IIIC

Module	IP Rating	STB Buttons (2 pieces)	IP Rating	Connection	Kits
AT-FM-10K	IP20	STBVP6	IP66	2 m cable	**ATK-VP6**
		STBVP6Q5		4-pin M12 QD	**ATK-VP6Q5**

Kit does not include run bar

Two-Hand Control Run Bars

Run Bars with STBVP6

Models	IP Rating	Models	IP Rating	Connection	E-Stop
STBVP6-RB1	IP20	STBVP6-RB2	IP65	Terminal strip	Not included
STBVP6-RB1Q8		STBVP6-RB2Q8		8-pin 7/8 QD	Not included
STBVP6-RB1E02		STBVP6-RB2E02		Terminal strip	SSA-EBM-02L

Enabling Devices

ED1G Enabling Devices

Contact Configuration	Momentary Push Button	Models
2 NO & 1 NC Aux	–	**ED1G-L21SM-1N**
2 NO & 1 NC Aux	1 NO	**ED1G-L21SMB-1N**
2 NO	2 NO	**ED1G-L20MB-1N**

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Safety Switches

Magnetic Switches

Family	Housing	Device Type	Connection Orientation	Connection
SI-MAGB	**1**	**SM**		
	1 = Rectangular **2** = Small **3** = Round	**SM** = Sensor **MM** = Magnet	**Blank** = Standard **CO** = Opposite	**Blank** = 3 m cable **QD** = 4-pin QD **-W/30** = 9 m cable

NOTE: When ordering housing 1 or 2 with a QD connection, you will receive an M8 Pico connector. When ordering housing 3 with a QD connection you will receive an M12 Euro connector.

RFID Switches

SI-RF-A or **SI-RF-A2** actuator is required to complete a sensor solution (ordered separately)

SI-RF-A2

Family	System Type	Reset		Coding	Connection
SI-RF	**P**	**T**	—	**U**	**P8**
	P = Single **S** = Cascade **D** = Cascade with ISD	**T** = Automatic (Trip) **L** = Manual (Latch)		**L** = Low **H** = High **U** = Unique	**P8** = 250 mm pigtail, M12 8-pin QD **2M** = 2 m cordset* **P5** = 250 mm, M12 5-pin QD*

*Available on single models only

Tamper Resistant Coding

Low (L): The SI-RF Safety Switch accepts any SI-RF-A actuator

High (H): The SI-RF Safety Switch only accepts the last taught-in actuator, a maximum of 12 teach-in processes are possible

Unique (U): The SI-RF Safety Switch only accepts the taught-in actuator, and only one teach-in process is possible

Hinge Switches

Family	Contact Configuration	Connection	Switch Position	Connection Exit	Washdown Rating
SI-HG63	**F**	**QD**	**R**		**-W**
SI-HG63 = Stainless Steel **SI-HGZ63** = Zinc Die-cast	**F** = 2 NC/1 NO	**QD** = 6-pin Micro-style QD **5M** = 5 m cable with flying leads	**R** = Switch mounted on right side of hinge **L** = Switch mounted on left side of hinge **B** = Switches mounted on both sides of hinge*	**Blank** = Inline QD/Cable **R** = Right angle QD/Cable	**Blank** = IP67 **-W** = IP69 Washdown*

*Stainless steel models only

Brackets

SI-HG80DQD

Inline QD Fitting

SI-HG80DQDR

Right-angle QD Fitting

SI-HG80A

Blank Hinge

SI-HG63A

Blank Hinge

Adaptor Cable

MQEAC-601-Q5A

SI-HG63 to ISD Connect Adaptor Cable

Mechanical Switches

Family	Body Style	Contact Configuration	Connection
SI-LS	**83**	**D**	
	83 = 83 mm **100** = 100 mm	**D** = 1 NO/1 NC (83 mm models only) **E** = 2 NC (83 mm models only) **F** = 2 NC/1 NO (100 mm models only)	**Blank** = Screw terminals **Q5A** = M12 connector; ISD Connect Compatible (SI-LS83E-Q5A and SI-LS100F-Q5A only)

Actuators

SI-QS-SSA-2

Straight Rigid Inline Actuator

SI-QS-SSA-3

Right-Angle Rigid Inline Actuator

SI-QS-SSU

Flexible Inline Actuator

Family	Body Style	Contact Configuration	Connection
SI-LM	**40MKH**	**D**	
	40MKH = Inline actuator	**D** = 1 NO/1 NC **E** = 2 NC **F** = 2 NC/1 NO	**Blank** = Screw terminals **Q5A** = M12 connector; ISD Connect Compatible (SI-LM40KHE-Q5A only)

Actuators

SI-QM-SSA

Straight Rigid Inline Actuator

SI-QM-SMFA

Flexible Inline Actuator

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Safety Switches

Locking Switches

Family: **SI-GL42D**

Lock/Unlock: **S**
- **S** = Power to Unlock
- **M** = Power to Lock

Actuator Contacts: **01**
- **01** = 1 NO
- **10** = 1 NC
- **11** = 1 NC/1 NO
- **20** = 2 NC
- **21** = 2 NC/1 NO
- **30** = 3 NC

Solenoid Monitors Contacts: **10**
- **10** = 1 NC
- **11** = 1 NC/1 NO
- **20** = 2 NC
- **21** = 2 NC/1 NO

Connection:
- **Blank** = Screw terminals
- **Q13** = M12 bottom connector; ISD Connect compatible and M12 side connector for lock/unlock function (SI-GL42DM01-20Q13 and SI-GL42DS01-20Q13 only)

Actuators

SI-QM-SSA-2

Straight rigid actuator for sliding or removable guards

SI-QM-SSA-2RA

Flat rigid actuator for sliding or removable guards

SI-QM-SMFA-2

Flexible actuator for small hinged guards 150 mm or larger

SI-QM-SMFA-3

Flexible actuator for small hinged guards 400 mm or larger

Unlock Mechanism

SI-QM-SSA-SHER

Sliding door handle with emergency release
(-SH model without emergency release)

SI-GL42-ERS-F-1

Front mount emergency release lever

SI-GL42-ERS-B-1

Back mount emergency release lever

SI-GL42-ERBD-B-1

Back mount escape release mechanism

SI-GL42-EM20-1

20 mm extension for escape release mechanism

SI-GL42-EM40-1

40 mm extension for escape release mechanism

Locking Switches

Family: **SI-LS42**

Solenoid Voltage: **D**
- **D** = 24 V AC/DC
- **W** = 110 V/230 V AC

Lock/Unlock: **S**
- **S** = Power to Unlock
- **M** = Power to Lock

Contact Configuration: **G**

Actuator	Solenoid
G = 1 NO/1 NC	1 NO/1 NC
H = 2 NC	1 NO/1 NC
I = 2 NC/1 NO	1 NC
J = 3 NC	1 NC

Actuators

SI-QM-SSA

Straight Rigid Inline Actuator

SI-QM-SMFA

Flexible Inline Actuator

Limit Switches

Family: **SI-LS**

Body Style: **83**

Actuator Type: **PB**
- **PB** = Plunger
- **RC10** = Roller
- **LA18** = Spindle-mount lever (18 mm roller)
- **LE13** = Lever (13 mm roller)

Contact Configuration: **D**
- **D** = 1 NO/1 NC
- **E** = 2 NC

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Choosing a Banner E-Stop Device

Start with the
Panel Mount E-Stop

If the following is needed:
- ISD

select ISD Connect

If the following is needed:
- Long Run

select 30 mm Mount, Flush
Mount, or Rope Pull

If the following are needed:
- ISD
- Daisy Chain at SIL3, PLE Cat4

select 30 mm Mount or
Flush Mount with ISD
or ISD Connect

If the following are needed:
- Handheld Machine Control

select ED1G

	Panel Mounted E-Stop	30mm Mount Illuminated E-Stop	Flush Mount Illuminated E-Stop	Rope Pull	ED1G Enabling Device
ISD (In-Series Diagnostics)	ISD Connect Ready	✓	✓	ISD Connect Ready	
Illumination	Button Option	Base 360 Degrees	Base 360 Degrees	K30 Option	
Fully Assembled with M12 QD	Option	✓	✓	Option	
Long Run (ie. conveyors)		✓ (daisy chain)	✓ (daisy chain)	✓ (continuous)	
Shrouded & Lockable Option	✓	✓	✓		
Handheld Manual Control					✓

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E-Stop Devices Selection Guide

	SSA-EBM	SSA-EB	SSA-EB1PL	SSA-EB1P	SSA-EB1M	RP-RM83	RP-LS42	RP-QM(T)72	RP-LM40	RP-QM90
	p. 70	p. 70	p. 70	p. 70	p. 70	p. 71	p. 71	p. 71	p. 71	p. 71
	Panel Mount Emergency Stop Buttons		Emergency Stop Buttons			Rope Pull Emergency Stop Switches				
E-Stop	✓	✓	✓	✓	✓	✓	✓			
Rope Pull						✓	✓	✓ (only stop control)	✓ (only stop control)	✓
Button Size (mm)	40 mm	40, 44, 60 mm	40, 60 mm	40, 60 mm	44 mm	32 mm	32 mm			
Illuminated Housing			✓		✓					
Illuminated Button		✓	✓	✓						
Release	✓	✓	✓	✓	✓	✓				
Lock/Unlock Button		✓ (SSA-EB1M only)			✓					
Rope Length (m)						38 m 70 m	25 m 37.2 m 75 m	6 m 12 m 20 m	6 m	50 + 50 m
Rope Connection						Built-in turnbuckle or ring connection	Built-in turnbuckle or ring connection	Ring connection	Ring connection	Ring connection
ISD (In-Series Diagnostics)			✓	✓						
Safety Contacts	1 NC 2 NC	1 NC 2 NC 3 NC 4 NC	1 NC 2 NC 4 NC	1 NC 2 NC 4 NC	1 NC 2 NC 4 NC	2 NC	2 NC	2 NC 4 NC	2 NC	2 NC
Auxiliary Contacts	1 NO	1 NO 2 NO	1 NO 2 NO	1 NO 2 NO	1 NO 2 NO	2 NO	2 NO	1 NO (specific models)		2 NO
OSSD Outputs			✓	✓						
Connection	Screw terminals	Screw terminals	M12 or Screw terminals	M12 or Screw terminals	M12 or Screw terminals	Screw terminals	Screw terminals	Screw terminals	Screw terminals	Screw terminals
Panel/Bracket Hole (mm)	22 mm	30 mm	30 mm	30 mm						

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E-Stop Devices

E-Stop Buttons*

Family	Version	Button Body	LED Function	Options		Interface/Contact Configuration	Enclosure	Termination	Connection	Extension
SSA–E	B1	M			–	02	EC			

B1 = Palm button, 40/44 mm button, 30 mm hole
B2 = Palm button, 60 mm button, 30 mm hole

Blank = none
L = OFF/red solid
LYR = yellow/red
LGR = green/red
LXR = OFF/red flashing
L2 = Illuminated push button; Push = ON

Blank = Standard
P = Padlock capable
S1 = Shroud style 1

EC = Compact OTB-style enclosure, 30 mm mounting
ED = DX80-style enclosure

M = Metal lockable base button
P = Plastic base button

02 = 2 NC
04 = 4 NC
11 = 1 NO/1 NC
12 = 1 NO/2 NC
13 = 1 NO/3 NC
22 = 2 NO/2 NC
0D = 2 Solid-state with ISD

Blank = Bottom exit (1x QD)
1 = One side exit (1x male QD if used)

Blank = Connection with terminals
Q# = number of pins/conductors

Blank = none
A = AB 1732DS Safety I/O
B = Siemens ET200pro/Turck
R = External manual reset for solid-state outputs

Accessories

SSA-EB1P-ECWC

FDA Grade Silicone Washdown Cover, IP67 and IP69 rated

SSA-MBK-EEC1

SSA-MBK-EEC2

SSA-MBK-EEC3

Panel Mount E-Stop Buttons*

Family	Version	Button Body		LED Function	Options	Interface/Contact Configuration	Connection
SSA–E	B1	M	–			02	02

B1 = Palm button, 40/44 mm button, 30 mm hole
B2 = Palm button, 60 mm button, 30 mm hole

M = Metal lockable base button
P = Plastic base button

Blank = none
L1 = Illuminated push button Independent wire

Blank = Standard
P = Padlock capable
S1 = Shroud style 1

02 = 2 NC
04 = 4 NC
11 = 1 NO/1 NC
12 = 1 NO/2 NC
13 = 1 NO/3 NC
22 = 2 NO/2 NC

Blank = Screw terminals
A01 = M12 QD; ISD Connect compatible (SSA-EB1P-02-A01 only)

E-Stop Button Kits

Family	Version	Button Body		Interface/Contact Configuration	Enclosure
SSA–E	B	M	–	02	L

B = Palm button, 40 mm button, 22 mm hole

M = Metal base button

02 = 2 NC
11 = 1 NO/1 NC
12 = 1 NO/2 NC

L = Yellow ring label "Emergency Stop", without enclosure
E = Yellow ring label "Emergency Stop", with enclosure

Rope Pull E-Stop Devices

Maximum Rope Length	Rope Connection	Safety Contacts	Auxiliary Contacts	Actuation	Housing Material	Models
38 m	Built-in turnbuckle	2 NC in	2 NO in	Latch	Metal, IP67	RP-RM83F-38LT
75 m						RP-RM83F-75LT
38 m	Ring connection					RP-RM83F-38LR
75 m						RP-RM83F-75LR
25 m	Built-in turnbuckle				Plastic	RP-LS42F-25LE
37.5 m						RP-LS42F-38LE
75 m						RP-LS42F-75LE

Note: For auxiliary status output models add E to the end of the model number (example, RP-RM83F-38LTE)

Rope Pull Switches

Maximum Rope Length	Rope Connection	Safety Contacts	Auxiliary Contacts	Actuation	Housing Material	Models
25 m	Ring connection	2 NC in	2 NO in	Latch	Plastic	RP-LS42F-25L
37.5 m						RP-LS42F-38L
75 m						RP-LS42F-75L
25 m	Built-in turnbuckle					RP-LS42F-25LF
37.5 m						RP-LS42F-38LF
75 m						RP-LS42F-75LF
6 m	–	2 NC in	–	Latch	Metal	RP-QM72D-6L
12 m						RP-QM72D-12L
20 m						RP-QM72D-20L
12 m		4 NC in	1 NO in			RP-QMT72F-12L
6 m		2 NC in	–	Trip		RP-QMT72E-12L
100 m (50 m each side)			2 NO in	Latch		RP-LM40D-6
						RP-LM40D-6L
						RP-QM90F-100L

Components for Wire Rope Assembly

RPA-C
Wire Ropes

RPA-T
Thimbles

RPA-CC
Clamps

RPA-TA
Turnbuckles

RPA-EB
Eye Bolts

RPA-P
Pulleys

RPA-DP
Deflection Pulleys

RPA-S
Tensioning Springs

Hardware kits are available (RPAK)

*Not all combinations are orderable. Visit bannerengineering.com for available models.

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