

# Safety Solutions Selection Guide





# 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



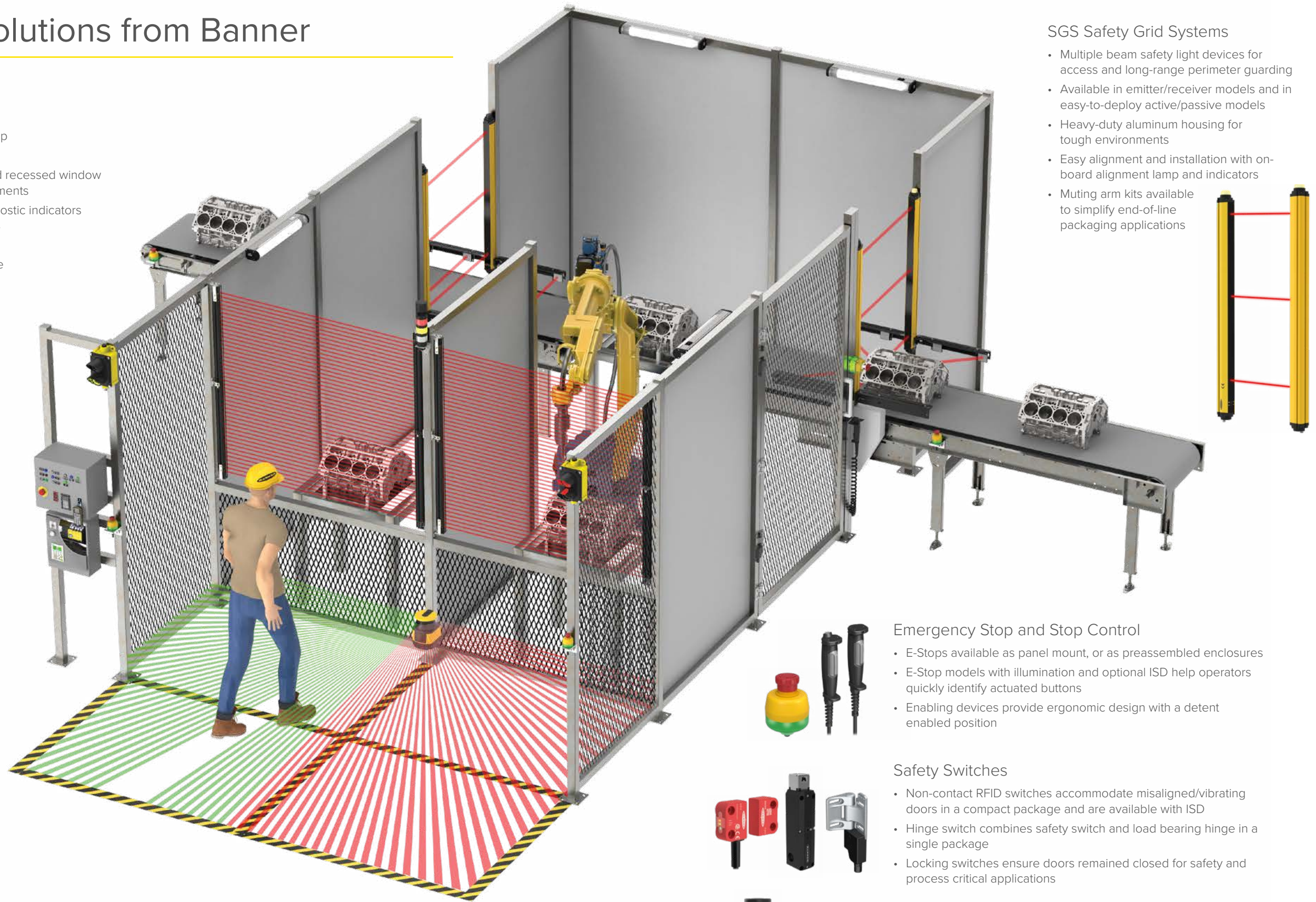
## Safety Controllers

- 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
- Available with ISD, which provides an array of data including device status, voltage, temperature, RFID tag value, sensing distance, and more
- View and configure your controller remotely using Banner's network access feature



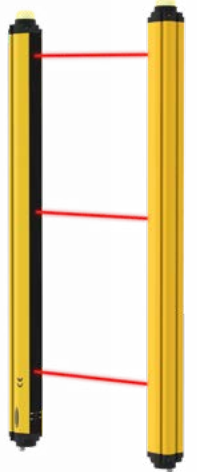
## Safety Laser Scanners

- 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



## 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



## Emergency Stop and Stop Control

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



## Safety Switches

- Non-contact RFID switches accommodate misaligned/vibrating doors in a compact package and are available with ISD
- 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



## 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





# ISD 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.



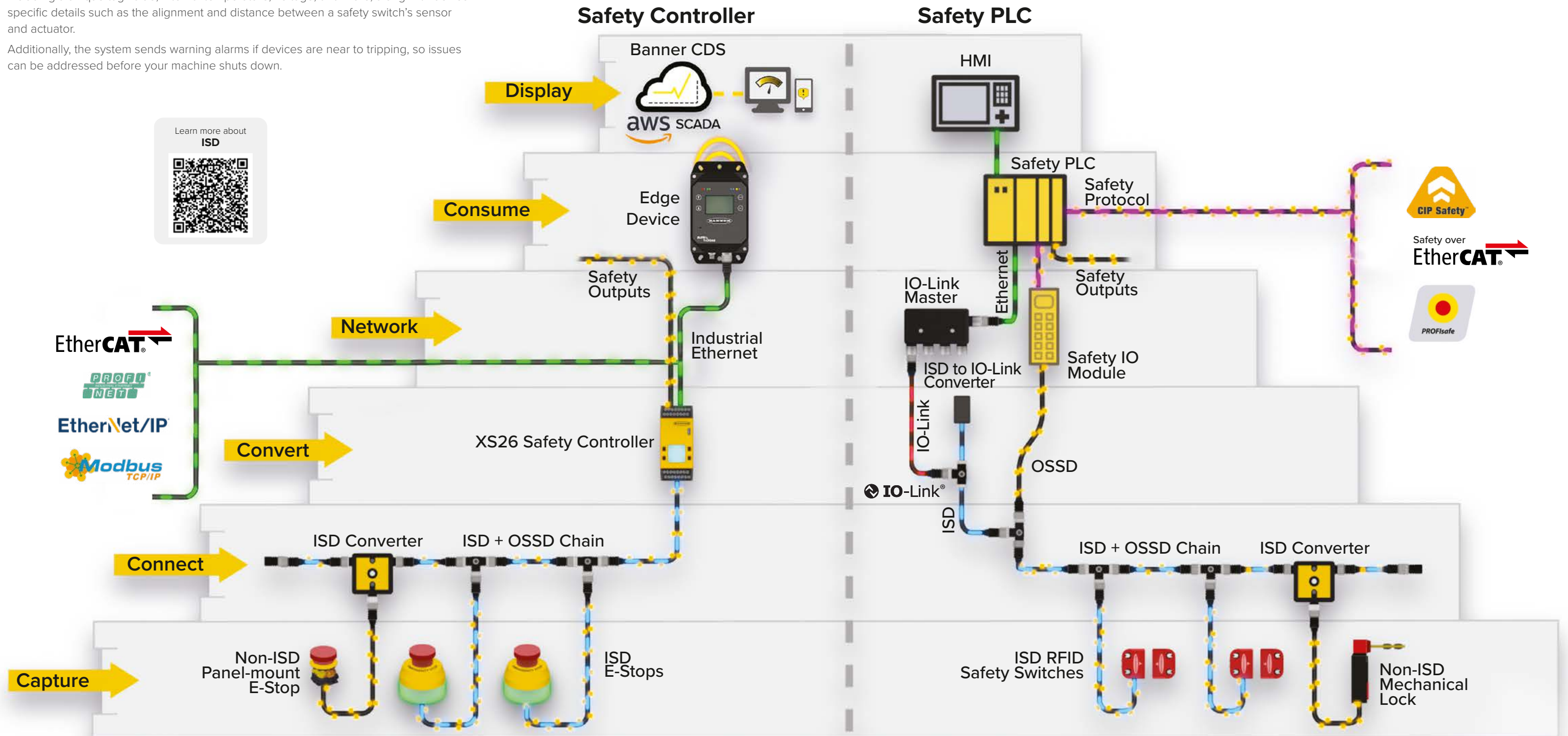
Cut Costs



Simplify Installation & Troubleshooting



Prevent & Reduce Downtime



# Safety Light Curtain Selection Guide



**S4B**



**EZ-SCREEN LS**



**EZ-SCREEN 14/30**



**EZ-SCREEN LP**



**EZ-SCREEN LS2**



**SGS Grids**

Type IEC 61496-1, -2	Type 4	Type 4	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	
IP Rating	IP65	IP65, IP67, IP69K option	IP65	
Dimensions W x D (mm)	38 x 38	36 x 45	36 x 45	
Resolution (mm)	14, 30	14, 23, 40	14	30
Max Sensing Range (m)	12	12	6	18
Defined Area (mm)	14 mm: 300 to 1200 30 mm: 300 to 1800	14 mm: 280 to 1820 23 mm: 280 to 2380 40 mm: 280 to 1820	150 to 1800	150 to 2400
Increments (mm)	150	70	150	

Type 4
Category 4 PL e; SIL3
IP54, IP65
28 x 26
14, 25
Basic: 4 Standard: 7
Basic: 270, 410, 550, 690 Standard: 270 to 1250
Standard: 140

Type 2
Category 2 PL c
IP65
25 x 32
30
15
150 to 1800
150

Type 4
Category 4 PL e; SIL3
IP65
52 x 56.9
300, 400, 500
Standard: 30 Long Distance: 60
500 to 1200
2, 3, 4 Beams

<b>Functions</b>			
Hand Detection	✓	✓	✓
Finger Detection	✓	✓	✓
Body Detection			
Cascade	✓	SLLC	SLSC
Scan Codes	✓	✓	✓
Fixed Blanking	✓	✓	✓
Reduced Resolution			✓
EDM	✓	✓	✓
Reset			✓
Integrated Muting			
LED on Top		Accessory	

✓
✓
SLPC
✓
✓
✓
✓
✓
✓

✓
✓
✓

✓
✓
✓
✓
✓

# Safety Scanner Selection Guide



**SX5-B6**



**SX5-M10**

<b>Dimensions W x D x H (mm)</b>	102 x 112 x 152	102 x 112 x 152
<b>Presence Detection</b>	50/70 mm	50/70 mm
<b>Body Detection</b>	70/150 mm	70/150 mm
<b>Hand Detection</b>	30/40 mm	30/40 mm
<b>Range</b> (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
<b>Max. Zone Sets</b> (depending on configuration)	6	10
<b>Master Remote</b>		Master (up to 3 remotes)
<b>Removable Memory</b>		SXA-RM-10
<b>Speed Monitoring</b>		
<b>Max. OSSD Outputs</b> (depending on configuration)	1x 2 OSSD	2x 2 OSSD
<b>Inter Device Connection</b>		8-Pin M12
<b>Integral Muting</b>	✓	✓
<b>Programmable Dust Filter</b>	✓	✓
<b>Measurement Data</b>	✓	✓
<b>Field-replaceable Window</b>	✓	✓
<b>Muting/bypass</b>		



**SX5-M70**



**SX5-ME70**



**SX5-R**

<b>Dimensions W x D x H (mm)</b>	102 x 112 x 152	102 x 112 x 152	102 x 112 x 152
<b>Presence Detection</b>	50/70 mm	50/70 mm	50/70 mm
<b>Body Detection</b>	70/150 mm	70/150 mm	70/150 mm
<b>Hand Detection</b>	30/40 mm	30/40 mm	30/40 mm
<b>Range</b> (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
<b>Max. Zone Sets</b> (depending on configuration)	70	70	depending on master
<b>Master Remote</b>	Master (up to 3 remotes)	Master (up to 3 remotes)	Remote
<b>Removable Memory</b>	SXA-RM-70	SXA-RM-70	
<b>Speed Monitoring</b>		✓	
<b>Max. OSSD Outputs</b> (depending on configuration)	3x 2 OSSD	3x 2 OSSD	
<b>Inter Device Connection</b>	8-Pin M12	8-Pin M12	8-Pin M12
<b>Integral Muting</b>	✓	✓	✓
<b>Programmable Dust Filter</b>	✓	✓	✓
<b>Measurement Data</b>	✓	✓	✓
<b>Field-replaceable Window</b>	✓	✓	✓
<b>Muting/bypass</b>	✓	✓	

# Relay and Controller Selection Guide



Device Type	GM/ES	UM	SM	AT	MMD
Preconfigured Safety Relay Modules					
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					
Network Access and View					
Safety Mat Monitoring			✓		
Two-Hand Control				✓	
Enabling Device	✓	✓			
Expandable					
Muting					✓
ON/OFF Delay					
Speed Monitoring					
Safety Standard	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)
Safety Outputs	2 NO, 3 NO, 4 NO	2 NO or 3 NO	4 NO	2 NO	2 PNP OSSD or 2 NO
Maximum Safety Output Rating	6A, 7A	7A	6A	6A	6A
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
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



Device Type	SSM	SR	IM	EM
Preconfigured Safety Relay Modules				
Self Testing Safety Device				
Self Testing Safety Device with EDM Function		✓	✓	
E-Stop				
Rope Pull				
Gate Switch (potential free contacts)				
RFID Gate Switch (OSSD contacts)				
ISD Functionality				
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			
Inputs	2 PNP	2 NC (dual) or 2 PNP	2 NC (dual) or 2 PNP	1 NC (single) or 2 NC (dual)
Safety Outputs	2 NO	2 NO, 3 NO	2 NO, 3 NO	4 NO or 4 NO with delay
Maximum Safety Output Rating	4A	6A	6A	6A
Auxiliary Outputs	1 NC	1 NC	1 NC, depending on model	
Power Supply	24 V DC	24 V DC	24 V DC	24 V DC or 24 V AC/DC, depending on model



Device Type	SC10	SC26/XS26
Configurable Controllers		
Self Testing Safety Device	✓	✓
Self Testing Safety Device with EDM Function	✓	✓
E-Stop	✓	✓
Rope Pull	✓	✓
Gate Switch (potential free contacts)	✓	✓
RFID Gate Switch (OSSD contacts)	✓	✓
ISD Functionality	2 chains	8 chains
	✓	✓
		✓ (XS Series only)
Network Access and View		✓
Safety Mat Monitoring	✓	✓
Two-Hand Control	✓	✓
Enabling Device	✓	✓
Expandable		✓
Muting	✓	✓
ON/OFF Delay	✓	✓
Speed Monitoring		
Safety Standard	Cat. 4 PL e, per EN ISO 13849-1; SIL 3 per IEC 61508 and IEC 62061	
Inputs	10	SC26: up to 26 XS26: up to 154
Safety Outputs	2x 3 NO	SC: 2 XS: up to 68
Maximum Safety Output Rating	6A each	0.5A each
Auxiliary Outputs	depends on configuration	depends on configuration
Power Supply	24 V DC	24 V DC

# Safety Switches Selection Guide



SI-MAG



SI-RF



SI-LS



SI-QS



SI-GL42



SI-LS42



SI-LS83



SI-HG63



SI-HG80

Device Type	Magnetic
Switch Style	Non-Contact
Non-Locking	✓
Locking	
Position	✓
Contacts	1 NC, 1 NO
Locking or Unlocking Power	
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
Housing Material	Plastic
Locking	
Actuation Extraction Force	
Resettable Switching Point	

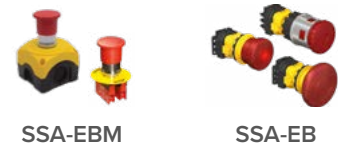
Device Type	RFID
Switch Style	Non-Contact
Non-Locking	✓
Locking	
Position	✓
Contacts	OSSD PNP
Locking or Unlocking Power	
Straight Rigid Inline	
Rigid Inline	
Flexible Inline	
High-Force Accessory	
LED Status Indication	✓
Cascadable	✓
ISD (In-Series Diagnostics)	✓
Coding level / Manipulation protection EN ISO 14119	Unique/Low/High coding
Housing Material	Plastic
Locking	
Actuation Extraction Force	
Resettable Switching Point	

Device Type		Mechanical	
Switch Style		Separate Actuator	Separate Actuator
Non-Locking		✓	✓
Locking			
Position			
Contacts		2 NC, 1 NO 1 NC, 1 NO 2 NC	1 NC, 1 NO 2 NC 2 NC, 1 NO 1 NC
Locking or Unlocking Power			
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	Low coding
Housing Material		Plastic	Plastic
Locking			
Actuation Extraction Force		10 N	10 N High-Force models: adjust. from 50-100 N
Resettable Switching Point			

Device Type			Mechanical		
Switch Style			Separate Actuator	Separate Actuator	Limit
Non-Locking					✓
Locking			✓	✓	
Position					Plunger, Roller, Spindle-mount, Lever
Contacts			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
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)			Compatible with ISD connect		
Coding level / Manipulation protection EN ISO 14119			Low coding	Low coding	Uncoded
Housing Material			Head: Metal Body: Plastic	Plastic	Plastic
Locking			Spring lock Solenoid lock	Spring lock Solenoid lock	
Actuation Extraction Force			1500 N when locked	2000 N when locked	
Resettable Switching Point					

Device Type		Hinge	
Switch Style		Hinge	Hinge
Non-Locking		✓	✓
Locking			
Position			
Contacts		2 NC, 1 NO	1 NC, 1 NO
Locking or Unlocking Power			
Straight Rigid Inline			
Rigid Inline			
Flexible Inline			
High-Force Accessory			
LED Status Indication			
Cascadable			
ISD (In-Series Diagnostics)		Compatible with ISD connect	
Coding level / Manipulation protection EN ISO 14119		Uncoded	Uncoded
Housing Material		Metal	Metal
Locking			
Actuation Extraction Force			
Resettable Switching Point		✓	

# E-Stop Devices Selection Guide



Panel Mount Emergency Stop Buttons

	SSA-EBM	SSA-EB
<b>E-Stop</b>	✓	✓
<b>Rope Pull</b>		
<b>Button Size (mm)</b>	40 mm	40, 44, 60 mm
<b>Illuminated Housing</b>		
<b>Illuminated Button</b>		✓
<b>Release</b>	✓	✓
<b>Lock/Unlock Button</b>		✓ (SSA-EB1M only)
<b>Rope Length (m)</b>		
<b>Rope Connection</b>		
<b>ISD (In-Series Diagnostics)</b>		
<b>Safety Contacts</b>	1 NC 2 NC	1 NC 2 NC 3 NC 4 NC
<b>Auxiliary Contacts</b>	1 NO	1 NO 2 NO
<b>OSSD Outputs</b>		
<b>Connection</b>	Screw terminals	Screw terminals
<b>Panel/Bracket Hole (mm)</b>	22 mm	30 mm



Emergency Stop Buttons

	SSA-EB1PL	SSA-EB1P	SSA-EB1M
<b>E-Stop</b>	✓	✓	✓
<b>Rope Pull</b>			
<b>Button Size (mm)</b>	40, 60 mm	40, 60 mm	44 mm
<b>Illuminated Housing</b>	✓		✓
<b>Illuminated Button</b>	✓	✓	
<b>Release</b>	✓	✓	✓
<b>Lock/Unlock Button</b>			✓
<b>Rope Length (m)</b>			
<b>Rope Connection</b>			
<b>ISD (In-Series Diagnostics)</b>	✓	✓	
<b>Safety Contacts</b>	1 NC 2 NC 4 NC	1 NC 2 NC 4 NC	1 NC 2 NC 4 NC
<b>Auxiliary Contacts</b>	1 NO 2 NO	1 NO 2 NO	1 NO 2 NO
<b>OSSD Outputs</b>	✓	✓	
<b>Connection</b>	M12 or Screw terminals	M12 or Screw terminals	M12 or Screw terminals
<b>Panel/Bracket Hole (mm)</b>	30 mm	30 mm	



Rope Pull Emergency Stop Switches

	RP-RM83	RP-LS42	RP-QM(T)72	RP-LM40	RP-QM90
<b>E-Stop</b>	✓	✓			
<b>Rope Pull</b>	✓	✓	✓ (only stop control)	✓ (only stop control)	✓
<b>Button Size (mm)</b>	32 mm	32 mm			
<b>Illuminated Housing</b>					
<b>Illuminated Button</b>					
<b>Release</b>	✓				
<b>Lock/Unlock Button</b>					
<b>Rope Length (m)</b>	38 m 70 m	25 m 37.2 m 75 m	6 m 12 m 20 m	6 m	50 + 50 m
<b>Rope Connection</b>	Built-in turnbuckle or ring connection	Built-in turnbuckle or ring connection	Ring connection	Ring connection	Ring connection
<b>ISD (In-Series Diagnostics)</b>					
<b>Safety Contacts</b>	2 NC	2 NC	2 NC 4 NC	2 NC	2 NC
<b>Auxiliary Contacts</b>	2 NO	2 NO	1 NO (specific models)		2 NO
<b>OSSD Outputs</b>					
<b>Connection</b>	Screw terminals	Screw terminals	Screw terminals	Screw terminals	Screw terminals



## Related Product: ISD Connect

- Connects a non-ISD-enabled safety device with 2 normally closed sets of contacts, such as a panel-mount E-stop or safety switch, to an ISD chain
- IP67-rated and installs easily, with no assembly or individual wiring required
- Access diagnostic data, prevent system faults, and reduce equipment downtime of non-ISD devices
- Built-in indication for input device and ISD status



# Smarter Automation. Better Solutions.

Banner Engineering designs and manufactures industrial automation products including sensors, smart IIoT and industrial wireless technologies, LED lights and indicators, measurement devices, machine safety equipment, as well as barcode scanners and machine vision. These solutions help make many of the things we use every day, from food and medicine to cars and electronics. A high-quality, reliable Banner product is installed somewhere around the world every two seconds. Headquartered in Minneapolis since 1966, Banner is an industry leader with more than 10,000 products, operations on five continents, and a world-wide team of more than 5,500 employees and partners. Our dedication to innovation and personable service makes Banner a trusted source of smart automation technologies to customers around the globe.

