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Complete Safety Solutions from Banner

**EZ-SCREEN LS 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 8

**XS26-2 Expandable 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 27

**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

**Emergency Stop and Stop Control**
- E-Stops available as panel mount, or as preassembled enclosures
- E-Stop models with illumination help operators to quickly identify actuated buttons
- Enabling devices provide ergonomic design with a detented enable position
- See page 44

**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 ensures doors remained closed for safety and process critical applications
- See page 36

**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 onboard alignment lamp and indicators
- Muting arm kits available to simplify end-of-line packaging applications
- See page 16

**SX5 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 22
Network Technology down to the Sensor Level

In-Series Diagnostics (ISD)

- 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 preventative maintenance alerts

Virtual Reset

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

Industrial Ethernet

- EtherNet/IP
- PCC
- Modbus

Intuitive setup and PLC integration

- Free, Easy to use PC software
- Export tag feature for easy tag creation in a PLC (Patent Pending)

Cut Costs
Simplify Installation & Troubleshooting
Prevent & Reduce Downtime
Type 4 Heavy-Duty Light Curtains

Robust safety light curtains for harsh industrial environments
Banner Engineering’s easy-to-use, heavy-duty Type 4 safety light curtains with several resolution options available to detect fingers, hands, arms, or legs. Our heavy duty light curtains are built to withstand harsh industrial environments.

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.

Robust safety light curtains for harsh industrial environments
Banner Engineering’s easy-to-use, heavy-duty Type 4 safety light curtains with several resolution options available to detect fingers, hands, arms, or legs. Our heavy duty light curtains are built to withstand harsh industrial environments.

Type 4 Compact Light Curtains

Compact safety light curtains for safety in tight spaces
Banner Engineering’s easy-to-use, compact Type 4 safety light curtains are available with several resolution options available to detect fingers, hands, arms, or legs. Our compact safety light curtains are ideal for smaller machines and other space-constrained areas.

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

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.
Safety Light Curtain Selection

Choose your safety light curtain, suitable for a wide variety of safety applications.
- Heavy-Duty Type 4 robust safety light curtains for harsh industrial environments
- Compact Type 4 safety light curtains for safety in tight spaces
- Type 2 cost-effective safety light curtains for lower risk applications

<table>
<thead>
<tr>
<th>Finger Detection</th>
<th>Hand Detection</th>
<th>Muting/Presence Detection</th>
</tr>
</thead>
<tbody>
<tr>
<td><img src="image" alt="Finger Detection" /></td>
<td><img src="image" alt="Hand Detection" /></td>
<td><img src="image" alt="Muting/Presence Detection" /></td>
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<table>
<thead>
<tr>
<th><strong>Compact Type 4</strong></th>
<th><strong>Compact Type 4</strong></th>
<th><strong>Heavy-Duty Type 4</strong></th>
<th><strong>Type 2</strong></th>
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<tbody>
<tr>
<td>SLC4</td>
<td>EZ-SCREEN LP Basic</td>
<td>EZ-SCREEN LP with Muting</td>
<td>EZ-SCREEN LS</td>
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<tr>
<td></td>
<td></td>
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<td>EZ-SCREEN</td>
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<tr>
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<td>EZ-SCREEN</td>
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<table>
<thead>
<tr>
<th><strong>Family</strong></th>
<th><strong>SLC4</strong></th>
<th><strong>SLPVA</strong></th>
<th><strong>SLP</strong></th>
<th><strong>SLPMP</strong></th>
<th><strong>SLL</strong></th>
<th><strong>SLS</strong></th>
<th><strong>LS2</strong></th>
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</thead>
<tbody>
<tr>
<td><strong>Type IEC 61496-1, -2</strong></td>
<td>Type 4</td>
<td>Type 4</td>
<td>Type 4</td>
<td>Type 4</td>
<td>Type 4</td>
<td>Type 4</td>
<td>Type 2</td>
</tr>
<tr>
<td><strong>Safety Rating</strong></td>
<td>Category 4 PL e; SIL3; SIL-CL3</td>
<td>Category 4 PL e; SIL3; SIL-CL3</td>
<td>Category 4 PL e; SIL3; SIL-CL3</td>
<td>Category 4 PL e; SIL3; SIL-CL3</td>
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<td>Category 2 PL c</td>
<td></td>
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<td><strong>EN ISO 13849-1; IEC 61508; IEC 62061</strong></td>
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<td></td>
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<tr>
<td><strong>Dimensions W x D (mm)</strong></td>
<td>26.7 x 22.1</td>
<td>28 x 26</td>
<td>28 x 26</td>
<td>28 x 26</td>
<td>36 x 45</td>
<td>36 x 45</td>
<td>25.4 x 31.8</td>
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<tr>
<td><strong>Resolution (mm)</strong></td>
<td>14, 24 mm</td>
<td>14, 25 mm</td>
<td>14, 25 mm</td>
<td>14, 25 mm</td>
<td>14, 30 mm</td>
<td>14, 30 mm</td>
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<tr>
<td><strong>Max Sensing Range (m)</strong></td>
<td>0.1 to 2 m</td>
<td>0.1 to 4 m</td>
<td>0.1 to 7 m</td>
<td>0.1 to 7 m</td>
<td>14.1 to 6 m</td>
<td>30.1 to 18 m</td>
<td>0.2 to 15 m</td>
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<tr>
<td><strong>Defined Area (mm)</strong></td>
<td>160 mm</td>
<td>240 mm</td>
<td>270, 410, 550, 690 mm</td>
<td>270 to 1250 mm</td>
<td>410 to 1250 mm</td>
<td>280 to 1820 mm</td>
<td>140 mm to 1800 mm</td>
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<td></td>
<td>EDM</td>
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<td>–</td>
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<td></td>
<td>Scan Code</td>
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<td></td>
<td>Reduced Resolution</td>
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<td></td>
<td>Fixed Blanking</td>
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<td>–</td>
<td>–</td>
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<tr>
<td></td>
<td>Integrated Muting</td>
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<tr>
<td></td>
<td>Cascade</td>
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<td></td>
<td>E-Stop/Safety Switch Connect</td>
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<tr>
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<td>Brackets Included</td>
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<tr>
<td><strong>Connection</strong></td>
<td>4-pin Integral Pigtail M12 Included</td>
<td>4-pin Pigtail M12 and 8-pin Pigtail M12 Included</td>
<td>8-pin Pigtail M12 Included or order separately</td>
<td>8-pin Pigtail M12 Included or order separately</td>
<td>8-pin Pigtail M12 Included or order separately</td>
<td>8-pin Pigtail M12 Included or order separately</td>
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<td><strong>Options</strong></td>
<td>LED on Top</td>
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<td>Accessory</td>
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<td>Different Housing</td>
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<td>EZLSA-HTE IP69</td>
<td>Tubular Enclosures IP67</td>
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</tr>
</tbody>
</table>

- Yellow Painted Aluminum
- Clear Anodized Aluminum
- Nickel-Plated ESD
### Safety Light Curtains – Model Keys

#### Compact Type 4: SLC4

<table>
<thead>
<tr>
<th>Family</th>
<th>System Type</th>
<th>Resolution</th>
<th>Defined Area</th>
<th>Termination</th>
</tr>
</thead>
<tbody>
<tr>
<td>SLC4</td>
<td>P</td>
<td>14</td>
<td>160</td>
<td>P44</td>
</tr>
</tbody>
</table>

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

- **P44** = 300 mm pigtail, 4-Pin M12 QD (individual Emitter or Receiver models)
- **P4** = 300 mm pigtail, 4-Pin M12 QD (Pair)

#### Compact Type 4: EZ-SCREEN LP Basic

<table>
<thead>
<tr>
<th>Family</th>
<th>System Type</th>
<th>Resolution</th>
<th>Defined Area</th>
<th>Termination</th>
</tr>
</thead>
<tbody>
<tr>
<td>SLPVA</td>
<td>P</td>
<td>14</td>
<td>410</td>
<td></td>
</tr>
</tbody>
</table>

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

- **Required:** RD to M12 Pigtail
- **DelPE-51D (5-pin)**
- **DelPE-81D (8-pin)**
  - 0.3 m (1 ft)

#### Compact Type 4: EZ-SCREEN LP

<table>
<thead>
<tr>
<th>Family</th>
<th>Cascade</th>
<th>System Type</th>
<th>Resolution</th>
<th>Defined Area</th>
<th>Termination</th>
</tr>
</thead>
<tbody>
<tr>
<td>SLP</td>
<td>C</td>
<td>P</td>
<td>14</td>
<td>410</td>
<td>P88</td>
</tr>
</tbody>
</table>

- **C** = Cascade
- **Blank** = Standard
- **P** = Pair (Emitter and Receiver)
- **E** = Emitter only
- **R** = Receiver only

- **P88** = 300 mm pigtail, 8-Pin M12 QD (individual Emitter or Receiver models)
- **P8** = 300 mm pigtail, 8-Pin M12 QD (on BOTH Emitter and Receiver models)
- **P5** = 300 mm pigtail, 5-Pin M12 QD (individual Emitter or Receiver models)
- **P55** = 300 mm pigtail, 5-Pin M12 QD (on BOTH Emitter and Receiver models)
- **Blank** = no pigtail, RD connection (for RDLS-8..D or RDLS-5..D cordset)
- **S** = no pigtail, RD connection (contains individual Emitter or Receiver only; brackets ordered separately)

#### Safety Light Curtains – Model Keys

#### Heavy-Duty Type 4: EZ-SCREEN LS

<table>
<thead>
<tr>
<th>Family</th>
<th>Cascade</th>
<th>System Type</th>
<th>Resolution</th>
<th>Defined Area</th>
<th>Termination</th>
</tr>
</thead>
<tbody>
<tr>
<td>SLL</td>
<td>C</td>
<td>P</td>
<td>14</td>
<td>910</td>
<td>P88</td>
</tr>
</tbody>
</table>

- **C** = Cascade
- **Blank** = Standard
- **P** = Pair (Emitter and Receiver)
- **E** = Emitter only
- **R** = Receiver only

- **P88** = 300 mm pigtail, 8-Pin M12 QD (individual Emitter or Receiver models)
- **P5** = 300 mm pigtail, 5-Pin M12 QD (individual Emitter or Receiver models)
- **P55** = 300 mm pigtail, 5-Pin M12 QD (on BOTH Emitter and Receiver models)
- **Blank** = no pigtail, RD connection (for RDLS-8..D or RDLS-5..D cordset)
- **S** = no pigtail, RD connection (contains individual Emitter or Receiver only; brackets ordered separately)

### Safety Light Curtains – Model Keys

#### Compact Type 4: EZ-SCREEN LP with Muting

<table>
<thead>
<tr>
<th>Family</th>
<th>System Type</th>
<th>Resolution</th>
<th>Defined Area</th>
<th>Termination</th>
</tr>
</thead>
<tbody>
<tr>
<td>SLPMP</td>
<td>P</td>
<td>14</td>
<td>410</td>
<td></td>
</tr>
</tbody>
</table>

- **SLPE** = Emitter
- **SLPMR** = Receiver
- **P** = Pair (Emitter and Receiver)
- **E** = Emitter only
- **R** = Receiver only

- **P44** = 300 mm pigtail, 4-Pin M12 QD (Pair)

- **Blank** = Integral Removable Disconnect
- **P8** = 8-pin Pigtail QD (SLPE)
- **P12** = 12-pin Pigtail QD (SLPMR)
- **P128** = For SLPMP (Pair)
  - Emitter with 8-pin pigtail QD
  - Receiver with 12-pin pigtail QD
### Heavy-Duty Type 4 IP69 Hygienic: EZ-SCREEN LS

<table>
<thead>
<tr>
<th>Family</th>
<th>System Type</th>
<th>Resolution</th>
<th>Defined Area</th>
<th>Termination</th>
</tr>
</thead>
<tbody>
<tr>
<td>LS2</td>
<td>TP</td>
<td>30</td>
<td>150</td>
<td>Q88</td>
</tr>
</tbody>
</table>

**Type 2: EZ-SCREEN LS2**

<table>
<thead>
<tr>
<th>Family</th>
<th>System Type</th>
<th>Resolution</th>
<th>Defined Area</th>
<th>Termination</th>
</tr>
</thead>
<tbody>
<tr>
<td>LS2</td>
<td>TP</td>
<td>30</td>
<td>150</td>
<td>Q88</td>
</tr>
</tbody>
</table>

### Safety Light Curtains – Model Keys

#### Cascade System Type

<table>
<thead>
<tr>
<th>Family</th>
<th>Cascade</th>
<th>System Type</th>
<th>Resolution</th>
<th>Defined Area</th>
<th>Termination</th>
</tr>
</thead>
<tbody>
<tr>
<td>SLS</td>
<td>C</td>
<td>P</td>
<td>14</td>
<td>150</td>
<td>Q88</td>
</tr>
</tbody>
</table>

#### Family Key

- **E** = Emitter
- **R** = Receiver
- **P** = Pair

<table>
<thead>
<tr>
<th>Emitter/Receiver</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>E</td>
<td>Clear Anodized Aluminum</td>
</tr>
<tr>
<td>R</td>
<td>Nickel-plated ESD</td>
</tr>
<tr>
<td>R</td>
<td>Yellow powder coat</td>
</tr>
<tr>
<td>P</td>
<td>Blank</td>
</tr>
</tbody>
</table>

**Terminations**

- **Q88** = 8-pin QD (individual Emitter or Receiver models)
- **P8** = 8-pin Pigtail QD (individual Emitter or Receiver models)
- **QDE** = For Pair: Emitter with 8-pin QD Receiver with 8-pin QD

**Dimensions**

- **Blanking**
  - 30 mm
  - 60 mm
  - 120 mm

**Bracket Hardware**

- **5-pin  M12/Euro-Style**
  - **QDE-851D**: 4.5 m (15')
  - **QDE-575D**: 6 m (20')
  - **QDE-501D**: 7 m (25')
  - **QDE-555D**: 12 m (40')

- **8-pin M12/Euro-Style**
  - **QDE-815D**: 4.5 m (15')
  - **QDE-875D**: 6 m (20')
  - **QDE-825D**: 7 m (25')
  - **QDE-855D**: 12 m (40')

### Safety Light Curtains – Accessories

#### SLC4 Brackets

- **SLC4A-MBK-10**
  - End Mount Bracket
  - Rotation: +/- 15º
  - 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: +/- 15º
  - Includes 2 brackets and hardware
  - Glass-filled polycarbonate

### LP Cascade Brackets

- **LPA-MBK-21**
  - Floating cascade mounting bracket
  - Includes 2 brackets and hardware
  - 14 ga. steel, black zinc-plated

### LS Brackets

- **EZLSA-MBK-11**
  - End mount steel bracket
  - 360º rotation in 2º increments
  - Two supplied with each sensor
  - Not included with LS Basic or IP69 Hygienic models

- **EZLSA-MBK-12**
  - Center mount steel bracket
  - Rotation: +/- 15º
  - One supplied with each sensor
  - Not included with LS Basic or IP69 Hygienic models

- **EZLSA-MBK-16**
  - Side mount die-cast bracket
  - Rotation: +/- 15º and -20º
  - Optional end mount bracket for slotted aluminum framing
  - Includes 1 bracket and hardware
  - Black zinc die-cast

- **EZLSA-MBK-20**
  - 8-ga. black cold-rolled steel bracket
  - Optional end mount bracket for slotted aluminum framing
  - Includes 2 brackets per optional kit

- **EZLSA-MBK-HTE-1**
  - Stamped stainless steel bracket
  - 360º rotation for IP69 enclosure models
  - Includes 2 brackets per optional kit

- **EZLSA-MBK-HTE-2**
  - Hygienic stainless steel bracket
  - 360º rotation for IP69 enclosure models
  - Includes 2 brackets per optional kit

**Safety Light Curtains Cables**

- **5-Pin M12/Euro-Style**
  - **QDE-851D**: 4.5 m (15')
  - **QDE-575D**: 22.8 m (75')
  - **QDE-501D**: 30.4 m (100')

- **8-Pin M12/Euro-Style**
  - **QDE-815D**: 4.5 m (15')
  - **QDE-875D**: 22.8 m (75')
  - **QDE-825D**: 30.4 m (100')
  - **QDE-855D**: 15.2 m (50')
Type 4 Safety Light Grids

Easy-to-use, heavy-duty Type 4 grids for perimeter guarding

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

Built-in attachment slots to easily add brackets and/or mute arm kits.

Built-in attachment slots to easily add brackets and/or mute arm kits.

Alignment & Mute Indication Lamp

Rugged metal body

Diagnostic display aids set-up, displays operating status or specific error conditions QD connector(s) for easy installation

OSSD Outputs ON

OSSD Outputs OFF

Last Beam

Synch Beam

EDM Status

Power ON

Status

Emitter

Receiver

L-Configuration

T-Configuration

X-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

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

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

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

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

Certain SGS models are available with integral muting for specific types of entry/exit applications

Integral Muting allows monitoring of redundant mute device inputs and automatically suspends (mutes) the safeguarding function of a device during the non-hazardous portion of the machine cycle.

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 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

Applications
- Assembly and packaging machines
- Automated production equipment
- Robotic work cells
- Automated warehouses
- Palletizers
# SGS Selection

Choose your safety light grids for perimeter guarding:
- 2, 3 & 4 beam Emitter/Receiver models with a broad feature set
- 2, 3 & 4 beam easy-to-deploy Active/Passive models, only require wiring to the active side

## Perimeter Guarding Type 4

<table>
<thead>
<tr>
<th></th>
<th>SGS Active/Passive Use with SGSB</th>
<th>SGS Emitter/Receiver</th>
<th>SGS Long Distance</th>
<th>SGS Active/Passive with Muting Use with SGSB</th>
<th>SGS Emitter/Receiver with Muting</th>
<th>SGS Mirror Use with SGSB/SGSMA</th>
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</thead>
<tbody>
<tr>
<td><strong>Body Detection</strong></td>
<td><img src="image1.png" alt="Image" /></td>
<td><img src="image2.png" alt="Image" /></td>
<td><img src="image3.png" alt="Image" /></td>
<td><img src="image4.png" alt="Image" /></td>
<td><img src="image5.png" alt="Image" /></td>
<td><img src="image6.png" alt="Image" /></td>
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<tr>
<td><strong>Muting</strong></td>
<td><img src="image1.png" alt="Image" /></td>
<td><img src="image2.png" alt="Image" /></td>
<td><img src="image3.png" alt="Image" /></td>
<td><img src="image4.png" alt="Image" /></td>
<td><img src="image5.png" alt="Image" /></td>
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</tr>
<tr>
<td><strong>Family</strong></td>
<td>SGSSA</td>
<td>SGSSP</td>
<td>SGSSP</td>
<td>SGSSP</td>
<td>SGSSP</td>
<td>SGSSP</td>
</tr>
<tr>
<td><strong>Type</strong></td>
<td>IEC 61496-1, -2</td>
<td>Type 4</td>
<td>Type 4</td>
<td>Type 4</td>
<td>Type 4</td>
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</tr>
<tr>
<td><strong>Safety Rating</strong></td>
<td>EN ISO 13849-1; IEC 61508; IEC 62061</td>
<td>Category 4</td>
<td>Category 4</td>
<td>Category 4</td>
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<td>/</td>
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<tr>
<td><strong>Dimensions W x D (mm)</strong></td>
<td>52 x 56.9</td>
<td>52 x 56.9</td>
<td>52 x 56.9</td>
<td>52 x 56.9</td>
<td>52 x 56.9</td>
<td>52 x 56.9</td>
</tr>
<tr>
<td><strong>Unit Type</strong></td>
<td>Active/Passive</td>
<td>Emitter/Receiver</td>
<td>Emitter/Receiver</td>
<td>Active/Passive</td>
<td>Emitter/Receiver</td>
<td>Mirror Assembly</td>
</tr>
<tr>
<td><strong>Max Sensing Range (m)</strong></td>
<td>0.5 to 8 m (6.5 m)†</td>
<td>0.5 to 30 m</td>
<td>6 to 60 m</td>
<td>0.5 to 8 m (6.5 m)†</td>
<td>0.5 to 30 m</td>
<td>/</td>
</tr>
<tr>
<td><strong>Number of Beams</strong></td>
<td>2/3/4</td>
<td>2/3/4</td>
<td>2/3/4</td>
<td>2/3/4</td>
<td>2/3/4</td>
<td>/</td>
</tr>
<tr>
<td><strong>Beam Spacing</strong></td>
<td>300†/400/500 mm</td>
<td>300/400/500 mm</td>
<td>300/400/500 mm</td>
<td>300†/400/500 mm</td>
<td>300/400/500 mm</td>
<td>300/400/500 mm</td>
</tr>
<tr>
<td><strong>Functions</strong></td>
<td><img src="image1.png" alt="Image" /></td>
<td><img src="image2.png" alt="Image" /></td>
<td><img src="image3.png" alt="Image" /></td>
<td><img src="image4.png" alt="Image" /></td>
<td><img src="image5.png" alt="Image" /></td>
<td><img src="image6.png" alt="Image" /></td>
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<tr>
<td><strong>Reset</strong></td>
<td><img src="image1.png" alt="Image" /></td>
<td><img src="image2.png" alt="Image" /></td>
<td><img src="image3.png" alt="Image" /></td>
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<td><img src="image5.png" alt="Image" /></td>
<td><img src="image6.png" alt="Image" /></td>
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<tr>
<td><strong>EDM</strong></td>
<td><img src="image1.png" alt="Image" /></td>
<td><img src="image2.png" alt="Image" /></td>
<td><img src="image3.png" alt="Image" /></td>
<td><img src="image4.png" alt="Image" /></td>
<td><img src="image5.png" alt="Image" /></td>
<td><img src="image6.png" alt="Image" /></td>
</tr>
<tr>
<td><strong>Scan Code</strong></td>
<td><img src="image1.png" alt="Image" /></td>
<td><img src="image2.png" alt="Image" /></td>
<td><img src="image3.png" alt="Image" /></td>
<td><img src="image4.png" alt="Image" /></td>
<td><img src="image5.png" alt="Image" /></td>
<td><img src="image6.png" alt="Image" /></td>
</tr>
<tr>
<td><strong>Integrated Muting</strong></td>
<td><img src="image1.png" alt="Image" /></td>
<td><img src="image2.png" alt="Image" /></td>
<td><img src="image3.png" alt="Image" /></td>
<td><img src="image4.png" alt="Image" /></td>
<td><img src="image5.png" alt="Image" /></td>
<td><img src="image6.png" alt="Image" /></td>
</tr>
<tr>
<td><strong>Integrated Muting Lamp</strong></td>
<td><img src="image1.png" alt="Image" /></td>
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<td><img src="image3.png" alt="Image" /></td>
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<td><img src="image5.png" alt="Image" /></td>
<td><img src="image6.png" alt="Image" /></td>
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<tr>
<td><strong>Override Input</strong></td>
<td><img src="image1.png" alt="Image" /></td>
<td><img src="image2.png" alt="Image" /></td>
<td><img src="image3.png" alt="Image" /></td>
<td><img src="image4.png" alt="Image" /></td>
<td><img src="image5.png" alt="Image" /></td>
<td><img src="image6.png" alt="Image" /></td>
</tr>
<tr>
<td><strong>Connection</strong></td>
<td>8-pin M12</td>
<td>8-pin M12</td>
<td>8-pin M12</td>
<td>12-pin M12 and 5-pin M12 for muting sensors</td>
<td>8-pin M12</td>
<td>/</td>
</tr>
<tr>
<td><strong>Options</strong></td>
<td><img src="image1.png" alt="Image" /></td>
<td><img src="image2.png" alt="Image" /></td>
<td><img src="image3.png" alt="Image" /></td>
<td><img src="image4.png" alt="Image" /></td>
<td><img src="image5.png" alt="Image" /></td>
<td><img src="image6.png" alt="Image" /></td>
</tr>
<tr>
<td><strong>Brackets</strong></td>
<td><img src="image1.png" alt="Image" /></td>
<td><img src="image2.png" alt="Image" /></td>
<td><img src="image3.png" alt="Image" /></td>
<td><img src="image4.png" alt="Image" /></td>
<td><img src="image5.png" alt="Image" /></td>
<td><img src="image6.png" alt="Image" /></td>
</tr>
<tr>
<td><strong>Mutting Arms</strong></td>
<td><img src="image1.png" alt="Image" /></td>
<td><img src="image2.png" alt="Image" /></td>
<td><img src="image3.png" alt="Image" /></td>
<td><img src="image4.png" alt="Image" /></td>
<td><img src="image5.png" alt="Image" /></td>
<td><img src="image6.png" alt="Image" /></td>
</tr>
</tbody>
</table>
# Safety Light Grids – Model Keys

## SGS Emitter/Receiver
- 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

<table>
<thead>
<tr>
<th>Type</th>
<th>Protective Height (mm)</th>
<th>Range (m)</th>
<th>Integral Muting</th>
<th>Model</th>
</tr>
</thead>
<tbody>
<tr>
<td>Emitter &amp; Receiver</td>
<td>500 (2 beams)</td>
<td>0.5 to 30</td>
<td>Yes</td>
<td>SGSMP2-500Q12B</td>
</tr>
<tr>
<td></td>
<td>800 (3 beams)</td>
<td></td>
<td></td>
<td>SGSMP3-400Q12B</td>
</tr>
<tr>
<td></td>
<td>900 (4 beams)</td>
<td></td>
<td></td>
<td>SGSMP4-300Q12B</td>
</tr>
<tr>
<td></td>
<td>1200 (4 beams)</td>
<td></td>
<td></td>
<td>SGSMP4-400Q12B</td>
</tr>
</tbody>
</table>

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

<table>
<thead>
<tr>
<th>Type</th>
<th>Protective Height (mm)</th>
<th>Range (m)</th>
<th>Integral Muting</th>
<th>Model</th>
</tr>
</thead>
<tbody>
<tr>
<td>Emitter &amp; Receiver</td>
<td>500 (2 beams)</td>
<td>0.5 to 30</td>
<td>No</td>
<td>SGSXP2-500Q88</td>
</tr>
<tr>
<td></td>
<td>800 (3 beams)</td>
<td></td>
<td></td>
<td>SGSXP3-400Q88</td>
</tr>
<tr>
<td></td>
<td>900 (4 beams)</td>
<td></td>
<td></td>
<td>SGSXP4-300Q88</td>
</tr>
<tr>
<td></td>
<td>1200 (4 beams)</td>
<td></td>
<td></td>
<td>SGSXP4-400Q88</td>
</tr>
</tbody>
</table>

# Safety Light Grids – Accessories

## Connection Options

### 8-Pin M12/Euro-Style
- QDEG-815D 4.5 m (15')
- QDEG-825D 7.6 m (25')
- QDEG-850D 15.2 m (50')

### 12-Pin M12/Euro-Style
- QDEG-1215E 4.5 m (15')
- QDEG-1225E 7.6 m (25')
- QDEG-1250E 15.2 m (50')

## Mute Connection Options

<table>
<thead>
<tr>
<th>Model</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>SGSA-MCB</td>
<td>Connection box for X, L or T mute arm kits</td>
</tr>
<tr>
<td>SGSA-MCS-2</td>
<td>Connection cable for X and L mute arm kits</td>
</tr>
<tr>
<td>SGSA-MCS-4</td>
<td>Connection cable for T mute arm kits</td>
</tr>
<tr>
<td>SGSA-MCB-HW</td>
<td>Optional hardware kit for mounting mute connection box, or mute connection cable to the t-slot of SGS Receiver or Active Unit</td>
</tr>
</tbody>
</table>

## Bracket
- SGSA-MBK-10-4 End-mount bracket

## Stands and Corner Mirrors

### SGSA-S Series Enclosures

<table>
<thead>
<tr>
<th>Enclosure Model</th>
<th>Fits SGS Models</th>
<th># of Windows</th>
<th>Enclosure Height</th>
<th>Distance from Floor to Bottom Window</th>
<th>Distance between Beams</th>
</tr>
</thead>
<tbody>
<tr>
<td>SGSA4-500</td>
<td>SGSA..-..-..</td>
<td>4</td>
<td>1543 mm (60.75”)</td>
<td>300 mm (11.8”)</td>
<td>300 mm (11.8”)</td>
</tr>
<tr>
<td>SGSA4-600</td>
<td>SGSA..-..-..</td>
<td>4</td>
<td>1798 mm (70.7”)</td>
<td>300 mm (11.8”)</td>
<td>400 mm (15.8”)</td>
</tr>
<tr>
<td>SGSA4-700</td>
<td>SGSA..-..-..</td>
<td>4</td>
<td>2053 mm (80.7”)</td>
<td>300 mm (11.8”)</td>
<td>500 mm (19.7”)</td>
</tr>
</tbody>
</table>

### SSM Series Corner Mirrors

<table>
<thead>
<tr>
<th>Mirror Model</th>
<th>Fits SGS Models</th>
<th>Reflective Area</th>
<th>Mounting Area</th>
<th>Mirror Height</th>
</tr>
</thead>
<tbody>
<tr>
<td>SSM-550</td>
<td>SGSA..-..-..</td>
<td>550 mm (21.7”)</td>
<td>661 mm (26.0”)</td>
<td>628 mm (24.7”)</td>
</tr>
<tr>
<td>SSM-825</td>
<td>SGSA..-..-..</td>
<td>825 mm (32.5”)</td>
<td>936 mm (36.9”)</td>
<td>903 mm (35.8”)</td>
</tr>
<tr>
<td>SSM-975</td>
<td>SGSA..-..-..</td>
<td>975 mm (38.4”)</td>
<td>1086 mm (42.8”)</td>
<td>1053 mm (41.5”)</td>
</tr>
<tr>
<td>SSM-1275</td>
<td>SGSA..-..-..</td>
<td>1275 mm (50.2”)</td>
<td>1386 mm (54.6”)</td>
<td>1353 mm (53.3”)</td>
</tr>
</tbody>
</table>

## Connection Options

<table>
<thead>
<tr>
<th>Model</th>
<th>Description</th>
</tr>
</thead>
</table>
| QDEG-850D | 15.2 m (50’)

### Connections Options

- 8-Pin M12/Euro-Style
  - QDEG-815D 4.5 m (15’)
  - QDEG-825D 7.6 m (25’)
  - QDEG-850D 15.2 m (50’)

- 12-Pin M12/Euro-Style
  - QDEG-1215E 4.5 m (15’)
  - QDEG-1225E 7.6 m (25’)
  - QDEG-1250E 15.2 m (50’)

## Mute Connection Options

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

## Bracket
- SGSA-MBK-10-4 End-mount bracket

## Stands and Corner Mirrors

### SGSA-S Series Enclosures

<table>
<thead>
<tr>
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<th>Fits SGS Models</th>
<th># of Windows</th>
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### SSM Series Corner Mirrors

<table>
<thead>
<tr>
<th>Mirror Model</th>
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## Connections Options

- 8-Pin M12/Euro-Style
  - QDEG-815D 4.5 m (15’)
  - QDEG-825D 7.6 m (25’)
  - QDEG-850D 15.2 m (50’)

- 12-Pin M12/Euro-Style
  - QDEG-1215E 4.5 m (15’)
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## Mute Connection Options

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- SGSA-MCB-HW Optional hardware kit for mounting mute connection box, or mute connection cable to the t-slot of SGS Receiver or Active Unit

## Bracket
- SGSA-MBK-10-4 End-mount bracket
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.

Safety Scanner System

Increased Machine Uptime
The SX5-B 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.

Safety Scanner System

Light immune and dust resistant – Best-in-class

Rugged design for reliable industrial use

Dynamic Muting available and selectable detection capability for vertical applications

M12 Ethernet connector cover

Keypad

LED 1: Object Detection in Safety Zone (ODSD)
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)

27 different status, diagnostic, warning and error displays

275 degrees of coverage makes it easy to mount on a corner

Maximum range for Safety Zone: 5.5 m
Maximum range for Warning Zone: 40 m

Up to 6 zone sets free configurable
Safety Scanner System – Software

Simple Setup for Rapid Deployment

The SX5-B 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…

- Administrative data: file title header, application description and more
- Safety-relevant data: startup process information
- Safety Zone or Warning Zone configuration data: contours and limits

Safety Scanner System – Models and Accessories

### SX Series Safety Scanners

<table>
<thead>
<tr>
<th>Model</th>
<th>Protective Field Range</th>
<th>Warning Field Range</th>
<th>Scanning Angle</th>
<th>Dimensions H x W x D (mm)</th>
<th>Features</th>
</tr>
</thead>
<tbody>
<tr>
<td>SX5-B</td>
<td>0.05 m to 5.5 m</td>
<td>40 m</td>
<td>275°</td>
<td>152 x 112.5 x 102</td>
<td>LCD Display, Muting</td>
</tr>
</tbody>
</table>

### SX Series Safety Scanners Specifications

**Detection Capability**
- 40 mm, 70 mm

**Current Consumption**
- No output load: 0.3A at 24V dc
- With maximum output load: 1.1A at 24V dc

**OSSD (Safety Outputs)**
- 2 OSSD
- All inputs and outputs are protected from short circuits to +24V dc or dc common

**Mechanical Data**
- Housing material: Aluminum Alloy
- Housing color: Yellow RAL1033
- Optics cover material: PC
- Optics cover surface: Acrylic

**Zone Sets**
- Six

**Safety Data**
- Type 3 (EN 61496-1)
- SIL 2 (IEC 61508)
- Category 3 (EN ISO 13849-1)
- SIL CL 2 (EN 60261)
- PL d (EN ISO 13849-1)

**Environmental Rating**
- IEC IP65

**Optical Data**
- Wavelength: 905 nm
- Pulse duration: 3 nsec
- Laser class: CLASS 1 (EN 60825-1)

**Operating Conditions**
- 0° C to +50° C (+32° F to +122° F)
- 95% maximum relative humidity (non-condensing)

**Certifications**
- CE
- UL

### SX Series Safety Scanners Brackets

- **SXA-MBK-1**
  - Pitch and roll angle adjustment bracket
  - Bracket memory feature allows for fast scanner swap out

- **SXA-MBK-2**
  - Protection bracket

### SX Series Safety Scanners Cables

- **8-Pin M12/Euro-Style Straight connector**
  - SXA-815D: 4.5 m (15’)
  - SXA-825D: 7.6 m (25’)
  - SXA-850D: 15.2 m (50’)
  - SXA-8100D: 30.4 m (100’)

- **4-Pin M12 D-Code to RJ45 Double ended**
  - STP-M12D-406: 1.83 m (6’)
  - STP-M12D-415: 4.5 m (15’)
  - STP-M12D-430: 9.14 m (30’)
  - STP-M12D-445: 15.2 m (50’)
  - STP-M12D-460: 30.4 m (100’)

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

- Administrative data: file title header, application description and more
- Safety-relevant data: startup process information
- Safety Zone or Warning Zone configuration data: contours and limits
Safety Relays and Safety 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 Relays

- Universal input safety relays
- E-Stop monitoring safety relays
- Muting safety relays
- Safe speed monitoring relays
- Safety mat relays
- Safety extension relays

Safety Relays and Safety Controllers

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

Hybrid Safety Controller plus 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

Cost-effective for simple safety circuits
- Preset Functionality: Configuration not required
- Safety Inputs: 1
- Independently controlled Safety Outputs: 1; 4 to 7A

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

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

Expandable Safety Controller

- PC Configurable: Flexible and easy-to-use
- 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 Display for easy troubleshooting
- Industrial Ethernet

Connect safety devices easily to the safety controller
- In-Series Diagnostics (ISD)
  - Easy-to-implement
  - Diagnostic Capabilities for Complex Safety Systems
In-Series Diagnostics (ISD) makes it easy to access diagnostic data from devices in a safety system without special equipment or designated cabling. Users can troubleshoot machine safety systems, prevent system faults, and reduce equipment downtime.
Choose a safety relay or safety controller.

- Configurable (expandable) safety controllers
- Preconfigured safety relay modules

### Relay and Controller Selection

<table>
<thead>
<tr>
<th>Safety Standard</th>
<th>Safety Outputs</th>
<th>Auxiliary Outputs</th>
<th>Power Supply</th>
</tr>
</thead>
<tbody>
<tr>
<td>Inputs</td>
<td>2 NO / 3 NO / 4 NO</td>
<td>6A / 7A / 7A</td>
<td>24V ac/dc</td>
</tr>
<tr>
<td>1 NC &amp; 1 NO (single or dual) 1 NC (single) 2 NO (single) 2 NO &amp; 2 NC (dual) 2 NC (dual) 2 PNP</td>
<td>3 NO or 2 NO</td>
<td>1 NC or 1 NC &amp; 2 PNP</td>
<td>115V ac &amp; 12-24V dc or 230V ac &amp; 12-24V dc</td>
</tr>
<tr>
<td>1 (or multiple in series) 4-wire safety mat 2 STB or buttons with complementary contacts 2 NC mutable dual &amp; 2 NO SSI (dual) 2 PNP</td>
<td>4 NO</td>
<td>1 NC &amp; 2 PNP</td>
<td>24V ac/dc</td>
</tr>
<tr>
<td>2 NO</td>
<td>2 NO</td>
<td>2 NO</td>
<td>115V ac &amp; 12-24V dc or 230V ac &amp; 12-24V dc</td>
</tr>
<tr>
<td>2 NO</td>
<td>2 NO</td>
<td>2 NO / 3 NO</td>
<td>24V ac/dc</td>
</tr>
<tr>
<td>2 NO / 3 NO</td>
<td>2 NO</td>
<td>4 NO or 4 NO with delay</td>
<td>24V ac/dc</td>
</tr>
<tr>
<td>2x 3 NO</td>
<td>2 NO with delay</td>
<td>2x 3 NO SC: 2 XS: up to 26 XS26: up to 154</td>
<td></td>
</tr>
<tr>
<td>Maximum Safety Output Rating</td>
<td>6A / 7A</td>
<td>6A</td>
<td>24V ac/dc</td>
</tr>
<tr>
<td>Auxiliary Outputs</td>
<td>6A</td>
<td>6A</td>
<td>24V ac/dc</td>
</tr>
<tr>
<td>1 NC &amp; 2 PNP</td>
<td>6A</td>
<td>6A</td>
<td>24V ac/dc</td>
</tr>
<tr>
<td>1 NC, depending on model</td>
<td>6A</td>
<td>6A</td>
<td>24V ac/dc</td>
</tr>
<tr>
<td>Power Supply</td>
<td>24V ac/dc</td>
<td>24V ac/dc</td>
<td>24V ac/dc</td>
</tr>
<tr>
<td>115V ac &amp; 12-24V dc or 230V ac &amp; 12-24V dc</td>
<td>115V ac &amp; 12-24V dc or 230V ac &amp; 12-24V dc</td>
<td>24V ac/dc</td>
<td></td>
</tr>
<tr>
<td>24V ac/dc</td>
<td>24V ac/dc</td>
<td>24V ac/dc</td>
<td></td>
</tr>
<tr>
<td>24V dc</td>
<td>24V dc</td>
<td>24V dc</td>
<td></td>
</tr>
<tr>
<td>24V dc</td>
<td>24V dc</td>
<td>24V dc</td>
<td></td>
</tr>
<tr>
<td>24V dc or 24V ac/dc, depending on model</td>
<td>24V dc</td>
<td>24V dc</td>
<td></td>
</tr>
<tr>
<td>24V dc</td>
<td>24V dc</td>
<td>24V dc</td>
<td></td>
</tr>
</tbody>
</table>

### Preconfigured Safety Relay Modules

<table>
<thead>
<tr>
<th>Configurable Controllers</th>
</tr>
</thead>
<tbody>
<tr>
<td>GM/ES</td>
</tr>
</tbody>
</table>

- 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
- Safety Mat Monitoring
- Two-Hand Control
- Enabling Device
- Expandable
- Muting
- ON/OFF Delay
- OFF Delay available
- Speed Monitoring
- Available

### Safety Standard

- Cat. 4 PL e, per EN ISO 13849-1; SIL 3 per IEC 61508 and IEC 62061
Safety Controllers

XS26 Expandable Safety Controller

- 26 to 154 Safety Inputs
- Safety Outputs
  - Safety Zones: 2 to 64
  - 0.1A Solid State
- 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
- 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
- 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
- Controller and input modules allow safety inputs to be converted to status outputs for efficient terminal use

Easy to Configure and Integrate with a PLC

SC-XM3 Fast Programming and Swapout
- Free Software
- Intuitive PLC Integration
- Store SC-XM3 memory card directly on controller

Industrial Ethernet

 EtherCAT/10/100

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.

Compatible Devices

- Safe Output 1
- Safe Output 2

- SI-RFA-P Termination plug
- SI-RFA-TS 4 to 8 to 4-pin T-Adapter for series connecting switches
- SI-RFA-TK 8 to 4 to 8-pin T-Adapter for local reset button
- MQDEC-4xSS 4-pin Male/Female M12 double-ended cable (straight to straight)
- DEER-8xD 8-pin Male/Female M12 double-ended cable (straight to straight)
- MQDC-4xx 4-pin female M12 to flying lead cable
- MQDMC-5xx 5-pin male M12 to flying lead cable

Free Software

Intuitive PLC Integration

Store SC-XM3 memory card directly on controller

Industrial Ethernet

 EtherCAT/10/100

www.bannerengineering.com
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

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

**1. Choose Controller**

- Auto configure Industrial Ethernet for remote monitoring and diagnostics
- Simulate configurations before implementation
- Complex configurations made easy

**Build System and Select Equipment**

**2. Equipment View**

- Add modules
- Add safety devices

**View Live Mode for Current System Status**

- Prevent Downtime: 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

**3. Add safety devices**

**4. Select safety device properties**

- Emergency Stop Properties

**5. Add virtual non-safety inputs**

- Intuitive setup and PLC integration
- Expedites 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: www.bannerengineering.com/safetycontroller

**Configure your system in minutes**

- Assorted View Menus
- Module Summary and Configuration Checklist
- Simple Drag-and-Drop Connections
- Inputs
- Logic Block
- Function Block
- Split Output
- Ladder Logic

**Additional uses for ISD**

- Reduction of downtime: Local operator guidance to activated E-Stop
- Rotation/Indexing
- Tool Identification
- Position Verification

**Wiring Diagram**

**Wiring Diagram in Live Mode**
## Safety Relays – Models

### E-Stop and Guard Safety Modules

<table>
<thead>
<tr>
<th>Model</th>
<th>Supply Voltage</th>
<th>Inputs</th>
<th>Safety Outputs</th>
<th>Aux. Outputs</th>
<th>Output Rating</th>
<th>Output Response Time</th>
</tr>
</thead>
<tbody>
<tr>
<td>GM-FA-10J</td>
<td>24 V ac/dc</td>
<td>1 NC &amp; 1 NO (single or dual)</td>
<td>2 NO</td>
<td>–</td>
<td>6 A</td>
<td>35 ms</td>
</tr>
<tr>
<td>ES-FA-9AA</td>
<td>24 V ac/dc</td>
<td>1 NC (single) or 2 NC (dual)</td>
<td>3 NO</td>
<td>–</td>
<td>6 A</td>
<td>25 ms</td>
</tr>
<tr>
<td>ES-FA-11AA</td>
<td>24 V ac/dc</td>
<td>1 NC (single) or 2 NC (dual)</td>
<td>2 NO</td>
<td>1 NC</td>
<td>7 A</td>
<td>25 ms</td>
</tr>
<tr>
<td>ES-FA-6G</td>
<td>24 V ac/dc</td>
<td>1 NC (single)</td>
<td>3 NO</td>
<td>1 NC</td>
<td>6 A</td>
<td>35 ms</td>
</tr>
<tr>
<td>ES-UA-5A</td>
<td>115 V ac &amp; 12-24 V dc</td>
<td>1 NC (single) or 2 NC (dual)</td>
<td>4 NO</td>
<td>1 NC &amp; 2 PNP</td>
<td>6 A</td>
<td>25 ms</td>
</tr>
<tr>
<td>ES-WA-5A</td>
<td>230 V ac &amp; 12-24 V dc</td>
<td>1 NC (single) or 2 NC (dual)</td>
<td>4 NO</td>
<td>1 NC &amp; 2 PNP</td>
<td>6 A</td>
<td>25 ms</td>
</tr>
</tbody>
</table>

### Universal Safety Input Modules

<table>
<thead>
<tr>
<th>Model (24 V ac/dc)</th>
<th>Inputs</th>
<th>Safety Outputs</th>
<th>Aux. Outputs</th>
<th>Output Rating</th>
<th>Output Response Time</th>
</tr>
</thead>
<tbody>
<tr>
<td>UM-FA-5A</td>
<td>1 NC (single) or 2 NC (dual) or 2 PNP</td>
<td>3 NO</td>
<td>–</td>
<td>6 A</td>
<td>25 ms</td>
</tr>
<tr>
<td>UM-FA-11A</td>
<td>1 NC (single) or 2 NC (dual) or 2 PNP</td>
<td>2 NO</td>
<td>1 NC</td>
<td>7 A</td>
<td>25 ms</td>
</tr>
</tbody>
</table>

### Safety Mat Monitoring Modules

<table>
<thead>
<tr>
<th>Model (24 V ac/dc)</th>
<th>Inputs</th>
<th>Safety Outputs</th>
<th>Aux. Outputs</th>
<th>Output Rating</th>
<th>Output Response Time</th>
</tr>
</thead>
<tbody>
<tr>
<td>SM-GA-5A</td>
<td>115 V ac &amp; 12-24 V dc</td>
<td>1 (or multiple in series) 4-wire Safety Mat</td>
<td>4 NO</td>
<td>1 NC &amp; 2 PNP</td>
<td>6 A</td>
</tr>
<tr>
<td>SM-HA-5A</td>
<td>230 V ac &amp; 12-24 V dc</td>
<td>1 (or multiple in series) 4-wire Safety Mat</td>
<td>4 NO</td>
<td>1 NC &amp; 2 PNP</td>
<td>6 A</td>
</tr>
</tbody>
</table>

### Muting Modules

<table>
<thead>
<tr>
<th>Model (24 V dc)</th>
<th>Input Device</th>
<th>Inputs</th>
<th>Safety Outputs</th>
<th>Aux. Outputs</th>
<th>Output Rating</th>
<th>Output Response Time</th>
</tr>
</thead>
<tbody>
<tr>
<td>MMD-TA-12B</td>
<td>Electromechanical &amp; Solid State</td>
<td>2 NC Muteable (dual) &amp; 2 NC SS (dual)</td>
<td>2 PNP</td>
<td>1 PNP</td>
<td>0.5 A</td>
<td>10 ms</td>
</tr>
<tr>
<td>MMD-TA-11B</td>
<td>Electromechanical &amp; Solid State</td>
<td>2 NC Muteable (dual) &amp; 2 NC SS (dual)</td>
<td>2 NO</td>
<td>1 NC</td>
<td>6 A</td>
<td>20 ms</td>
</tr>
</tbody>
</table>

### Safe Speed Monitoring Modules

<table>
<thead>
<tr>
<th>Model</th>
<th>Supply Voltage</th>
<th>Inputs</th>
<th>Safety Outputs</th>
<th>Aux. Outputs</th>
<th>Ranges (rpm)</th>
<th>Output Rating</th>
</tr>
</thead>
<tbody>
<tr>
<td>SSM-FM-11A0</td>
<td>24 V ac/dc</td>
<td>2 PNP</td>
<td>2 NO</td>
<td>1 NC</td>
<td>5-40, 35-340, 300-2700, 1200-10500</td>
<td>4 A</td>
</tr>
<tr>
<td>SSM-FM-11A20</td>
<td>24 V ac/dc</td>
<td>2 PNP</td>
<td>2 NO</td>
<td>1 NC</td>
<td>10-80, 80-650, 600-5300, 2400-20000</td>
<td>4 A</td>
</tr>
</tbody>
</table>

### Interface Modules

<table>
<thead>
<tr>
<th>Models</th>
<th>Supply Voltage</th>
<th>Inputs</th>
<th>Safety Outputs</th>
<th>Aux. Outputs</th>
<th>Output Rating</th>
<th>Output Response Time</th>
</tr>
</thead>
<tbody>
<tr>
<td>SR-IM-9A</td>
<td>24 V dc</td>
<td>2 NC</td>
<td>3 NO</td>
<td>–</td>
<td>6 A</td>
<td>20 ms</td>
</tr>
<tr>
<td>SR-IM-11A</td>
<td>24 V dc</td>
<td>2 NC</td>
<td>2 NO</td>
<td>1 NC</td>
<td>6 A</td>
<td>20 ms</td>
</tr>
<tr>
<td>IM-T-9A</td>
<td>24 V dc</td>
<td>2 NC</td>
<td>3 NO</td>
<td>–</td>
<td>6 A</td>
<td>20 ms</td>
</tr>
<tr>
<td>IM-T-11A</td>
<td>24 V dc</td>
<td>2 NC</td>
<td>2 NO</td>
<td>1 NC</td>
<td>6 A</td>
<td>20 ms</td>
</tr>
</tbody>
</table>

## Safety Controllers – Models

### Non-expandable SC26 and SC10 Safety Controllers

<table>
<thead>
<tr>
<th>Model (24 V dc)</th>
<th>Description</th>
<th>Housing (H x W x D in mm)</th>
<th>Inputs/ Convertible</th>
<th>Independently Controlled Safe Outputs</th>
<th>Maximum Safety Output Rating</th>
</tr>
</thead>
<tbody>
<tr>
<td>SC26-27</td>
<td>Base Controller, non-convertible, with LCD</td>
<td>110 x 45 x 128</td>
<td>2 NO, 1 NC &amp; 2 PNP</td>
<td>6 A</td>
<td>2 NO, 1 NC</td>
</tr>
<tr>
<td>SC26-2de</td>
<td>Base Controller, non-convertible</td>
<td>110 x 45 x 128</td>
<td>2 NO, 1 NC &amp; 2 PNP</td>
<td>6 A</td>
<td>2 NO, 1 NC</td>
</tr>
</tbody>
</table>

### Expandable XS26 Safety Controllers

<table>
<thead>
<tr>
<th>Model (24 V dc)</th>
<th>Description</th>
<th>Housing (H x W x D in mm)</th>
<th>Inputs/ Convertible</th>
<th>Independently Controlled Safe Outputs</th>
<th>Maximum Safety Output Rating</th>
</tr>
</thead>
<tbody>
<tr>
<td>XS26-2d</td>
<td>Base Controller, with LCD</td>
<td>110 x 45 x 128</td>
<td>2 NO, 1 NC &amp; 2 PNP</td>
<td>6 A</td>
<td>2 NO, 1 NC</td>
</tr>
<tr>
<td>XS26-2de</td>
<td>Base Controller, expandable</td>
<td>110 x 45 x 128</td>
<td>2 NO, 1 NC &amp; 2 PNP</td>
<td>6 A</td>
<td>2 NO, 1 NC</td>
</tr>
</tbody>
</table>

### Expansion Modules

<table>
<thead>
<tr>
<th>Model</th>
<th>Supply Voltage</th>
<th>Inputs</th>
<th>Safety Outputs</th>
<th>Aux. Outputs</th>
<th>Output Rating</th>
<th>Output Response Time</th>
<th>Delay</th>
</tr>
</thead>
<tbody>
<tr>
<td>EM-T-7A</td>
<td>24 V dc</td>
<td>1 NC (single) or 2 NC (dual)</td>
<td>4 NO</td>
<td>–</td>
<td>6 A</td>
<td>–</td>
<td>20 ms</td>
</tr>
<tr>
<td>EM-F-7G</td>
<td>24 V ac/dc</td>
<td>1 NC (single)</td>
<td>4 NO</td>
<td>6 A</td>
<td>–</td>
<td>35 ms</td>
<td>–</td>
</tr>
<tr>
<td>EM-FD-7G2</td>
<td>24 V ac/dc</td>
<td>1 NC (single)</td>
<td>4 NO w/delay</td>
<td>6 A</td>
<td>–</td>
<td>–</td>
<td>0.5 s</td>
</tr>
<tr>
<td>EM-FD-7G3</td>
<td>24 V ac/dc</td>
<td>1 NC (single)</td>
<td>4 NO w/delay</td>
<td>6 A</td>
<td>–</td>
<td>–</td>
<td>1.0 s</td>
</tr>
<tr>
<td>EM-FD-7G4</td>
<td>24 V ac/dc</td>
<td>1 NC (single)</td>
<td>4 NO w/delay</td>
<td>6 A</td>
<td>–</td>
<td>–</td>
<td>2.0 s</td>
</tr>
</tbody>
</table>

## 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
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.

In-Series Diagnostics (ISD) provides users with status and performance data from each sensor in a cascade chain. The ISD data collected is converted to Industrial Ethernet/IO-Link so it can be accessed with an HMI or similar device.

Users receive notification when an event has occurred as well as where in the series the event occurred. Events include the opening or closing of a door, door misalignment, wrong actuator, and a number of switch health attributes.
### Safety Switches Selection

Choose a safety switch:
- Magnetic safety switches
- Plastic or metal compact safety switches
- Hinge safety switches
- Guard locking safety switches
- Rotary Lever, Plunger, Roller and Spindle-Mount Safety Limit Switches

#### Non-Contact Switches

<table>
<thead>
<tr>
<th>Magnetic</th>
<th>RFID</th>
<th>Non-Locking</th>
<th>Locking</th>
<th>Position</th>
<th>Contacts</th>
<th>Locking or Unlocking Power</th>
<th>Straight Rigid In-Line</th>
<th>Rigid In-Line</th>
<th>Flexible In-Line</th>
<th>High-Force Accessory</th>
<th>LED Status Indication</th>
<th>Cascadable</th>
<th>ISD (In-Series Diagnostics)</th>
<th>Coding level / Manipulation protection EN ISO 14119</th>
<th>Housing Material</th>
<th>Locking</th>
<th>Actuation Extraction Force</th>
</tr>
</thead>
<tbody>
<tr>
<td>SI-MAG</td>
<td>SI-RF</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
<td>1 NC/1 NO</td>
<td>1 NC/1 NO</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
<td>Unique/Low/High coding</td>
<td>Plastic</td>
<td>Plastic</td>
<td>10 N</td>
</tr>
<tr>
<td>SI-LS</td>
<td>SI-QS</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
<td>2 NC/1 NO</td>
<td>2 NC/1 NO</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
<td>Low coding</td>
<td>Plastic</td>
<td>Spring lock</td>
<td>10 N / 15 N</td>
</tr>
<tr>
<td>SI-LM40</td>
<td>SI-LM42</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
<td>1 NC/1 NO</td>
<td>1 NC/1 NO</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
<td>Low coding</td>
<td>Metal</td>
<td>Metal</td>
<td>10 N / 20 N</td>
</tr>
<tr>
<td>SI-LS31</td>
<td>SI-LM40</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
<td>1 NC/1 NO</td>
<td>1 NC/1 NO</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
<td>Low coding</td>
<td>Metal</td>
<td>Metal</td>
<td>10 N / 20 N</td>
</tr>
<tr>
<td>SI-HG63</td>
<td>SI-HG80</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
<td>1 NC/1 NO</td>
<td>1 NC/1 NO</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
<td>Uncoded</td>
<td>Metal</td>
<td>Metal</td>
<td>10 NC / 20 NC</td>
</tr>
<tr>
<td>SI-LS31</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>Metal</td>
<td>Metal</td>
<td>10 NC / 20 NC</td>
</tr>
</tbody>
</table>

**Magnetic RFID**

- SI-MAG
- SI-RF
- SI-LS
- SI-QS
- SI-LM40
- SI-LM42
- SI-LS31
- SI-LM40
- SI-HG63
- SI-HG80
- SI-LS31

**Non-Locking**

- ✓
- ✓
- ✓

**Locking**

- ✓

**Position**

- ✓
- ✓

**Contacts**

- 1 NC/1 NO
- 2 NC/1 NO
- 1 NC/1 NO
- 2 NC/1 NO
- 2 NC/1 NO
- 2 NC/1 NO

**Locking or Unlocking Power**

- 110V ac/230V ac
- 24V ac/dc

**Straight Rigid In-Line**

- ✓
- ✓
- ✓

**Rigid In-Line**

- ✓
- ✓
- ✓

**Flexible In-Line**

- ✓
- ✓
- ✓
- ✓

**High-Force Accessory**

- ✓

**LED Status Indication**

- ✓

**Cascadable**

- ✓

**ISD (In-Series Diagnostics)**

- ✓

**Coding level / Manipulation protection EN ISO 14119**

- Low coding
- Low coding
- Low coding
- Low coding
- Low coding
- Low coding
- Low coding
- Low coding
- Low coding
- Low coding
- Low coding
- Low coding
- Low coding
- Low coding
- Low coding
- Low coding
- Low coding
- Low coding
- Low coding
- Low coding

**Housing Material**

- Plastic
- Plastic
- Plastic
- Plastic
- Plastic
- Plastic
- Plastic
- Plastic
- Plastic
- Plastic
- Plastic
- Plastic
- Plastic
- Plastic
- Plastic
- Plastic
- Plastic
- Plastic
- Plastic
- Plastic
- Plastic

**Locking**

- Spring lock
- Solenoid lock

**Actuation Extraction Force**

- 10 N
- 10 N / 20 N
- 2000 N when locked

- 10 N / 15 N
### Safety Switches – Model Keys

#### Magnetic Switches

- **Family**: SI-MAGB
  - **Housing**: 1
  - 1 = Rectangular
  - 2 = Small
  - 3 = Round

- **Device Type**: SM
- **Connection Orientation**: Blank = Standard
- **Connection**: CD = Opposite

**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

- **Family**: SI-RF
- **System Type**: P
  - P = Single
- **Reset**: T
  - T = Automatic (Trip)
- **Coding**: L
  - L = Low
- **Connection**: P8
  - P8 = 250 mm pigtail, M12 8-pin QD

**NOTE**: SI-RF-A Actuator is required to complete a sensor solution. Ordered separately.

#### 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

**NOTE**: SI-RF-A Actuator is required to complete a sensor solution. Ordered separately.

#### Hinge Switches

- **Family**: SI-HG63
  - **Contact Configuration**: F
  - **Connection**: QD
  - **Switch Position**: R
  - R = Switch mounted on right side of hinge
  - L = Switch mounted on left side of hinge
  - B = Switches mounted on both sides of hinge

**NOTE**: 2M = 2 m contact* 

**NOTE**: Available on single models only

#### Locking Switches

- **Family**: SI-LS42
  - **Solenoid**: DM
  - **Lock/Unlock**: S
  - **Contact Configuration**: G
  - **Actuator Type**: Blank = Rigid In-Line

**NOTE**: Available in 63 mm models only

### Safety Switches – Model Keys

#### Mechanical Switches

- **Family**: SI-LS
  - **Body Style (H)**: 83
  - 83 = 83 mm
  - 100 = 100 mm

**NOTE**: Available in 83 mm models only

- **Actuator Type**: SRA
  - SRA = Right Angle In-Line

**NOTE**: Available in 100 mm models only

#### Locking Switches

- **Family**: SI-LS42
  - **Solenoid**: DM
  - 1 NO/1 NC
  - 1 NO
  - 1 NC

**NOTE**: Available in 63 mm models only

### Contact Configuration

- **Family**: SI-LS
  - D
  - D = 1 NO/1 NC
  - E = 2 NC
  - F = 2 NC/1 NO

**NOTE**: Available in 63 mm models only

- **Family**: SI-LM
  - 40MKH
  - **Actuator Type**: Blank = Straight Rigid In-Line
  - F = Flexible In-Line

**NOTE**: Available in 100 mm models only

### Power to Lock/Unlock

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

**NOTE**: Available in 63 mm models only
**Safety Switches – Model Keys**

### Limit Switches

<table>
<thead>
<tr>
<th>Family</th>
<th>Body Style</th>
<th>Actuator Type</th>
<th>Contact Configuration</th>
</tr>
</thead>
<tbody>
<tr>
<td>SI-LM</td>
<td>40</td>
<td>PB</td>
<td>D = 1 NO/1 NC E = 2 NC F = 2 NC/1 NO</td>
</tr>
<tr>
<td>SI-LS</td>
<td>31</td>
<td>PB</td>
<td>D = 1 NO/1 NC E = 2 NC F = 2 NC/1 NO</td>
</tr>
<tr>
<td>SI-LS</td>
<td>83</td>
<td>PB</td>
<td>D = 1 NO/1 NC E = 2 NC F = 2 NC/1 NO</td>
</tr>
</tbody>
</table>

PB = Plunger
RC10 = Roller
LA18 = Spindle-mount lever (18 mm roller)
L20 = Lever (20 mm roller)

### Hinge Switches

<table>
<thead>
<tr>
<th>Family</th>
<th>Body Style</th>
<th>Actuator Type</th>
<th>Contact Configuration</th>
</tr>
</thead>
<tbody>
<tr>
<td>SI-LM</td>
<td>40</td>
<td>HG</td>
<td>D = 1 NO/1 NC E = 2 NC</td>
</tr>
<tr>
<td>SI-LS</td>
<td>31</td>
<td>RT</td>
<td>D = 1 NO/1 NC E = 2 NC</td>
</tr>
</tbody>
</table>

HG = Vertical hinged lever ±90°
HGR = Right-hand hinged lever 180°
HGL = Left-hand hinged lever 180°

### 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

<table>
<thead>
<tr>
<th>Model</th>
<th>Connection</th>
<th>Touch Surface Material</th>
<th>Output</th>
<th>Power Supply</th>
</tr>
</thead>
<tbody>
<tr>
<td>STBV6</td>
<td>2 m cable</td>
<td>Polyetherimide (PEI)</td>
<td>Solid-state 2 Complementary PNP (1 ON, 1 OFF)</td>
<td>10-30V dc</td>
</tr>
<tr>
<td>STBV6Q5</td>
<td>4-pin M12 QD</td>
<td>Polyetherimide (PEI)</td>
<td>E/M Relay 2 Complementary SPST (1 NC, 1 NO)</td>
<td>20-30V ac/dc</td>
</tr>
<tr>
<td>STBV81</td>
<td>2 m cable</td>
<td>Polyetherimide (PEI)</td>
<td>Complementary SPST (1 NC, 1 NO)</td>
<td>10-30V dc</td>
</tr>
<tr>
<td>STBV81Q5</td>
<td>5-pin M12 QD</td>
<td>Polyetherimide (PEI)</td>
<td>Complementary SPST (1 NC, 1 NO)</td>
<td>10-30V dc</td>
</tr>
</tbody>
</table>

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.

### STB Self-Checking Touch Buttons

<table>
<thead>
<tr>
<th>Kit Module</th>
<th>IP Rating</th>
<th>STB Buttons (2 pieces)</th>
<th>IP Rating</th>
<th>Connection</th>
</tr>
</thead>
<tbody>
<tr>
<td>ATK-VP6</td>
<td>IP20</td>
<td>STBV6</td>
<td>IP6</td>
<td>2 m cable</td>
</tr>
<tr>
<td>ATK-VP6Q5</td>
<td>IP20</td>
<td>STBV6Q5</td>
<td>IP6</td>
<td>4-pin M12 QD</td>
</tr>
</tbody>
</table>

Kit does not include run bar

### DUO-TOUCH Two-Hand Control Kits with STB Touch Buttons

<table>
<thead>
<tr>
<th>Model</th>
<th>Connection</th>
<th>E-Stop</th>
</tr>
</thead>
<tbody>
<tr>
<td>STBPV6-RB2</td>
<td>Terminal strip</td>
<td>Not included</td>
</tr>
<tr>
<td>STBPV6-RB2Q8</td>
<td>8-pin T1 OD</td>
<td>Not included</td>
</tr>
<tr>
<td>STBPV6-RB2EE02</td>
<td>Terminal strip</td>
<td>SSA-EBM-Q2L</td>
</tr>
</tbody>
</table>

### Two Hand Control Run Bars

<table>
<thead>
<tr>
<th>Model</th>
<th>Contact Configuration</th>
<th>Momentary Push Button</th>
</tr>
</thead>
<tbody>
<tr>
<td>ED1G-L21SM-1N</td>
<td>2 NO &amp; 1 NC Aux</td>
<td>/</td>
</tr>
<tr>
<td>ED1G-L21SMB-1N</td>
<td>2 NO &amp; 1 NC Aux</td>
<td>1 NO</td>
</tr>
<tr>
<td>ED1G-L20MB-1N</td>
<td>2 NO</td>
<td>2 NO</td>
</tr>
</tbody>
</table>

**Handheld grip-styled switches are used for manual control of machine functions, including visual observations, minor adjustments, calibration and more.**
## E-Stop Devices Selection

Choose an E-Stop; Safely Start and Stop Machines.

- Emergency Stop Buttons
- Illuminated Emergency Stop Button
- Rope Pulls and Dome Indicators

### E-Stop Devices

<table>
<thead>
<tr>
<th>SSA-EBM</th>
<th>SSA-EB</th>
<th>SSA-EB1P</th>
<th>SSA-EB1M</th>
<th>RP-RM83</th>
<th>RP-LS42</th>
<th>RP-QM(T)72</th>
<th>RP-LM40</th>
<th>RP-QM90</th>
</tr>
</thead>
<tbody>
<tr>
<td><img src="SSA-EBM.png" alt="Image" /></td>
<td><img src="SSA-EB.png" alt="Image" /></td>
<td><img src="SSA-EB1P.png" alt="Image" /></td>
<td><img src="SSA-EB1M.png" alt="Image" /></td>
<td><img src="RP-RM83.png" alt="Image" /></td>
<td><img src="RP-LS42.png" alt="Image" /></td>
<td><img src="RP-QM(T)72.png" alt="Image" /></td>
<td><img src="RP-LM40.png" alt="Image" /></td>
<td><img src="RP-QM90.png" alt="Image" /></td>
</tr>
</tbody>
</table>

### Rope Pull Emergency Stop Switches

<table>
<thead>
<tr>
<th>RP-RM83</th>
<th>RP-LS42</th>
<th>RP-QM(T)72</th>
<th>RP-LM40</th>
<th>RP-QM90</th>
</tr>
</thead>
<tbody>
<tr>
<td><img src="RP-RM83.png" alt="Image" /></td>
<td><img src="RP-LS42.png" alt="Image" /></td>
<td><img src="RP-QM(T)72.png" alt="Image" /></td>
<td><img src="RP-LM40.png" alt="Image" /></td>
<td><img src="RP-QM90.png" alt="Image" /></td>
</tr>
</tbody>
</table>

### Specifications

#### E-Stop
- Recommended Models: SSA-EBM, SSA-EB, SSA-EB1P, SSA-EB1M

#### Rope Pull
- Button Size (mm):
  - 40 mm
  - 40 / 44 / 60 mm
  - 40 / 60 mm
  - 44 mm
  - 32 mm

#### Illuminated Housing
- (specific models)

#### Illuminated Button
- (specific models)

#### Release
- (specific models)

#### Lock/Unlock Button

#### Rope Length (m)
- 38 m
- 70 m
- 25 m
- 37.2 m
- 20 m
- 6 m
- 75 m
- 6 m
- 50 + 50 m

#### Rope Connection
- Built-in turnbuckle / Ring connection
- Ring connection
- Ring connection

#### ISD (In-Series Diagnostics)
- (specific models)

#### Safety Contacts
- 1 NC
- 2 NC
- 2 NC
- 3 NC
- 4 NC

#### Auxiliary Contacts
- 1 NO
- 2 NO
- (specific models)

#### OSSD Outputs
- Screw terminals
- Screw terminals
- Screw terminals
- Screw terminals
- Screw terminals
- Screw terminals
- Screw terminals

#### Panel/Bracket Hole (mm)
- 22 mm
- 30 mm
- 30 mm
- 30 mm

---

*Image credits:* Banner Engineering
E-Stop Devices – Model Keys

E-Stop Buttons

<table>
<thead>
<tr>
<th>SSA-E</th>
<th>B1</th>
<th>M</th>
<th>-</th>
<th>02</th>
<th>EC</th>
</tr>
</thead>
</table>

- **Version**
  - B1 = Palm Button, 40/44 mm button, 30 mm hole
  - B2 = Palm Button, 60 mm button, 30 mm hole

- **Button Body**
  - M = Metal base button
  - P = Plastic base button

- **Release Function**
  - Blank = Standard
  - L1 = Illuminated push button

- **Enclosure**
  - EC = Compact OTB-style enclosure, 30 mm mounting

- **Interface/Contact Configuration**
  - 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

- **LED Function**
  - Blank = none
  - L = OFF/red solid
  - LGR = green/red
  - LXR = OFF/red flashing

- **Termination**
  - Blank = Bottom exit (1x OD)
  - 1 = One side exit (1x male OD if used)

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

- **Extension**
  - Blank = none
  - A = All 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

<table>
<thead>
<tr>
<th>SSA-E</th>
<th>B1</th>
<th>M</th>
<th>-</th>
<th>02</th>
</tr>
</thead>
</table>

- **Version**
  - B1 = Palm Button, 40/44 mm button, 30 mm hole
  - B2 = Palm Button, 60 mm button, 30 mm hole

- **Button Body**
  - M = Metal base button
  - P = Plastic base button

- **LED Function**
  - Blank = none
  - L1 = Illuminated push button Independent wire

- **Release Function**
  - Blank = Standard
  - P = Padlock capable

- **Interface/Contact Configuration**
  - 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

- **E-Stop Buttons Kits**

- **Version**
  - B = Palm Button, 40 mm button, 22 mm hole

- **Button Body**
  - M = Metal base button

- **Interface/Contact Configuration**
  - 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

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

Rope Pull E-Devices

<table>
<thead>
<tr>
<th>Model</th>
<th>Maximum Rope Length</th>
<th>Safety Contacts</th>
<th>Auxiliary Contacts</th>
<th>Actuation</th>
<th>Housing Material</th>
</tr>
</thead>
<tbody>
<tr>
<td>RP-RM83F-L...</td>
<td>38 m – 75 m</td>
<td>2 NC in</td>
<td>2 NO in</td>
<td>Latch</td>
<td>Metal, IP67</td>
</tr>
<tr>
<td>RP-LS42F-LE</td>
<td>25 m – 37.5 m – 75 m</td>
<td>2 NC in</td>
<td>2 NO in</td>
<td>Latch</td>
<td>Plastic</td>
</tr>
</tbody>
</table>

Rope Pull Switches

<table>
<thead>
<tr>
<th>Model</th>
<th>Maximum Rope Length</th>
<th>Safety Contacts</th>
<th>Auxiliary Contacts</th>
<th>Actuation</th>
<th>Housing Material</th>
</tr>
</thead>
<tbody>
<tr>
<td>RP-QM72F-12L</td>
<td>6 m</td>
<td>2 NC in</td>
<td>/</td>
<td>Latch</td>
<td>Metal</td>
</tr>
<tr>
<td>RP-QM72F-20L</td>
<td>12 m</td>
<td>2 NC in</td>
<td>/</td>
<td>Latch</td>
<td>Metal</td>
</tr>
<tr>
<td>RP-QM72F-6L</td>
<td>20 m</td>
<td>2 NC in</td>
<td>/</td>
<td>Latch</td>
<td>Metal</td>
</tr>
<tr>
<td>RP-QM72E-12L</td>
<td>12 m</td>
<td>4 NC in</td>
<td>1 NO in</td>
<td>Latch</td>
<td>Metal</td>
</tr>
<tr>
<td>RP-LM40D-6</td>
<td>6 m</td>
<td>2 NC in</td>
<td>/</td>
<td>Latch</td>
<td>Metal</td>
</tr>
<tr>
<td>RP-QM90F-100L</td>
<td>100 m (50 m each side)</td>
<td>2 NC in</td>
<td>2 NO in</td>
<td>Latch</td>
<td>Metal</td>
</tr>
</tbody>
</table>

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-S**
  - Tensioning Springs

Hardware kits are available (RPAK)
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