

# PRODUCT PROFILE

When it comes to machine safety, Rockwell Automation knows that protection of personnel and equipment is your main concern. At the same time, flexibility and productivity are points that must also be considered as you design your safety system. Optimize all of these with the new Allen-Bradley **SensaGuard** family of non contact switches.

Featuring the latest generation of RFID technology for coding and Inductive technology for sensing, **SensaGuard** large sensing range and tolerance to misalignment is a cost-effective solution that is ideally suited for a wide range of industrial safety applications.

The **SensaGuard** product line is a Category 4 /SIL 3 rated switch per EN954-1, TUV functional safety approved to IEC61508.

#### **Addition features:**

- Switches can be connected to a standard safety relay, for example, the MSR126, MSR127, MSR200/300 Family, SmartGuard and Safety I/O Blocks.
- Multiple actuator sizes for large sensing distance typically (15 – 25mm)
- IP69K environmental rating
- Short circuit and over voltage protection
- Led located on the switch for door status and troubleshooting
- 2 Safety PNP outputs and 1 auxiliary PNP output

#### **Benefits:**

- No dedicated controller required
- Cat 4 / SIL3 rating maintained even with multiple units connected in series
- Switches can be connected in series with other devices (Light Curtains, E-stops, key interlock switches)
- Extended diagnostics for easy troubleshooting
- Tolerance to misalignment
- Mounting compatibility to existing and competitive products.
- Multiple sensing directions
- Suitable to use in harsh environments
- Use standard proximity mounting brackets

## **SensaGuard non contact safety switches**



#### **Key applications and industries:**


The SensaGuard product family of coded non contact interlock switches is intended for machine guarding with part or full body access. It is particularly suited for machines where multiple access doors must be monitored up to Safety category 4/SIL3.

The stainless steel version is suitable for use in harsh environments or high-pressure washdown areas typically found in the food and beverage industries. Other typical industries include:


- Packaging
- Material Handling
- Printing, Paper, Paperboard
- Life Sciences
- Fiber and Textiles

## Product selection


### SensaGuard M18 barrel, plastic, 18mm target

|  | Connection          | Safety Outputs | Auxiliary Outputs | Catalog Number |
|---|---------------------|----------------|-------------------|----------------|
|   | 8 Pin Micro Pigtail | 2              | 1                 | 440N-Z21S16H   |
|   | 3m Cable            | 2              | 1                 | 440N-Z21S16A   |
|   | 10m Cable           | 2              | 1                 | 440N-Z21S16B   |

### SensaGuard M18 barrel, plastic, 30mm target

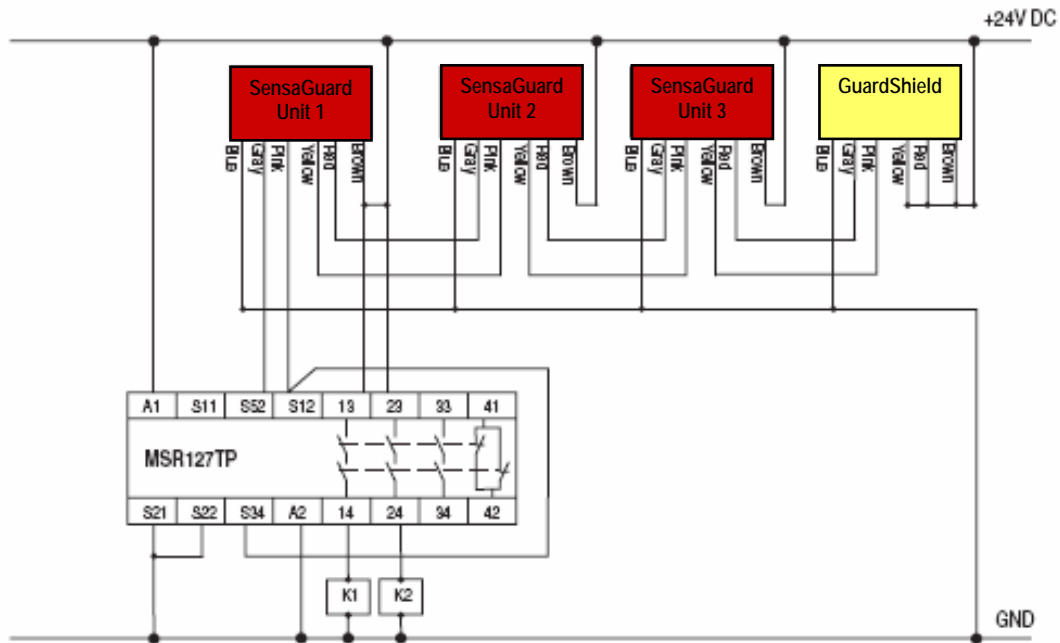
|  | Connection          | Safety Outputs | Auxiliary Outputs | Catalog Number |
|---|---------------------|----------------|-------------------|----------------|
|   | 8 Pin Micro Pigtail | 2              | 1                 | 440N-Z21S26H   |
|   | 3m Cable            | 2              | 1                 | 440N-Z21S26A   |
|   | 10m Cable           | 2              | 1                 | 440N-Z21S26B   |

### SensaGuard M18 barrel, Stainless Steel, 18mm target

|  | Connection          | Safety Outputs | Auxiliary Outputs | Catalog Number |
|---|---------------------|----------------|-------------------|----------------|
|   | 8 Pin Micro Pigtail | 2              | 1                 | 440N-Z21S17H   |
|   | 3m Cable            | 2              | 1                 | 440N-Z21S17A   |
|   | 10m Cable           | 2              | 1                 | 440N-Z21S17B   |

Recommended Cable: 889D-F8AB-\* (\* = please specify 2, 5, 10, 15, 20 or 30 meters)

## Wiring example



MSR127TP with 3 sensors and 1 440L light curtain in series, automatic reset, driving 100S or 700S safety contactors.

Note: Light curtain must be last (farthest from MSR127)

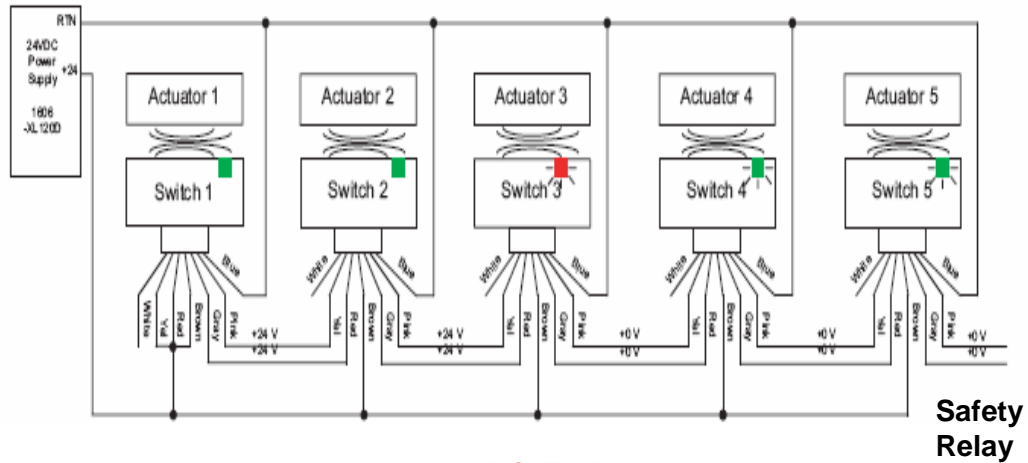
## Diagnostics

### LED Indicators (per IEC 60073)

| Device Output LED | State       | Status   |
|-------------------|-------------|--|
|                   | Off         | Not Powered  |
|                   | Red         | Not Safe, Safety Output not active   |
|                   | Green       | Door Closed, Safety Output active  |
|                   | Green flash | Power up test or Safety Output inputs not valid  |
|                   | Red Flash   | 1 Hz Flash Recoverable Fault<br>4 Hz Flash Non-recoverable Fault, requires power cycle to reset device |

## Troubleshooting:

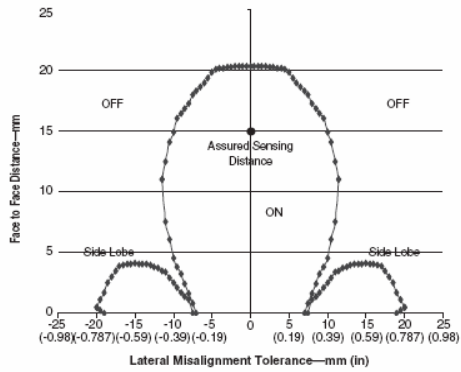
### Series Circuit



|                 |                    |                    |                                    |                       |                       |
|-----------------|--------------------|--------------------|------------------------------------|-----------------------|-----------------------|
| <b>Unit LED</b> | <b>Solid Green</b> | <b>Solid Green</b> | <b>Unit Fault<br/>Blinking Red</b> | <b>Blinking Green</b> | <b>Blinking Green</b> |
|-----------------|--------------------|--------------------|------------------------------------|-----------------------|-----------------------|

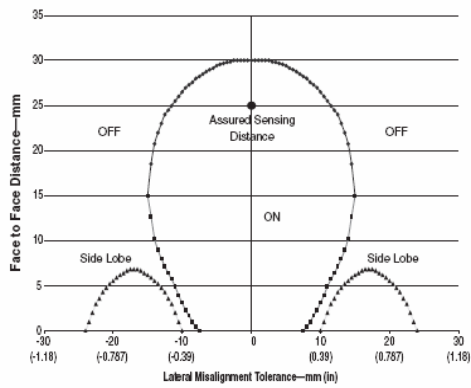
## Misalignment Curve

18 mm Unit with 18 mm Target



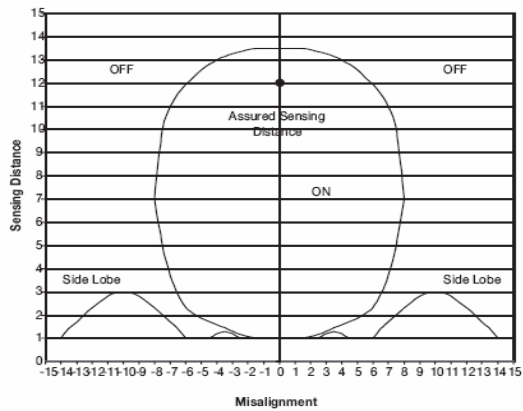
**Note:** There must be a minimum spacing of 4 mm (0.157 in) if actuator and sensor face approaches laterally. This will prevent false triggering due to the side lobe areas.

18 mm Unit with 30 mm Target



**Note:** There must be a minimum spacing of 7 mm (0.275 in) if actuator and sensor face approaches laterally. This will prevent false triggering due to the side lobe areas.

18 mm Unit with 18 mm Target



**Note:** There must be a minimum spacing of 4 mm (0.157 in) if actuator and sensor face approaches laterally. This will prevent false triggering due to the side lobe areas.

## Mounting Brackets



**871A-SCBP18**



**871A-BP18**



**871A-BRS18**



**60-2649**

## List of recommended relays

MSR126, MSR127, MSR123, MSR124, MSR131, MSR138, MSR211, MSR121, MSR320, MSR200 Family (Except MSR210), MSR300 Family, SmartGuard, 1791 DS DeviceNet™ Safety I/O