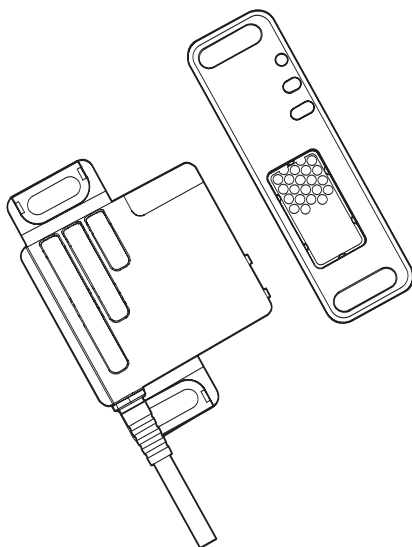


# SensaGuard™ Integrated Latch Installation Instructions



## Certifications



Tested To Comply  
with FCC Standards



**IMPORTANT:**  
**SAVE THESE INSTRUCTIONS FOR FUTURE USE**

**Note:** Refer to Technical Specifications for Certification information and ratings.

## 2 SensaGuard™ Installation Instructions

<b>ENGLISH:</b>	This instruction sheet is available in multiple languages at <a href="http://www.rockwellautomation.com/literature">www.rockwellautomation.com/literature</a> . Select publication language and type "SensaGuard" in the search field.
<b>GERMAN:</b>	Dieses Instruktionsblatt kann in mehreren Sprachen unter <a href="http://www.rockwellautomation.com/literature">www.rockwellautomation.com/literature</a> gelesen werden. Bitte Ihre Sprache anwählen und "SensaGuard" im Suchfeld eintippen.
<b>FRENCH:</b>	Ces instructions sont disponibles dans différentes langues à l'adresse suivante: <a href="http://www.rockwellautomation.com/literature">www.rockwellautomation.com/literature</a> . Sélectionner la langue puis taper << SensaGuard >> dans le champ de recherche.
<b>ITALIAN:</b>	La presente scheda d'istruzione è disponibile in varie lingue sul sito <a href="http://www.rockwellautomation.com/literature">www.rockwellautomation.com/literature</a> . Selezionare la lingua desiderata e digitare "SensaGuard" nel campo di ricerca.
<b>SPANISH:</b>	Puede encontrar esta hoja de instrucciones en varios idiomas en <a href="http://www.rockwellautomation.com/literature">www.rockwellautomation.com/literature</a> . Seleccione el idioma de publicación y escriba "SensaGuard" en el campo de búsqueda.
<b>PORTUGUESE:</b>	Esta folha de instruções está disponível em várias línguas em <a href="http://www.rockwellautomation.com/literature">www.rockwellautomation.com/literature</a> . Selecione a língua de publicação e entre com "SensaGuard" no espaço de busca.
<b>POLISH:</b>	Ta kartka z instrukcjami jest dost pna w wielu j zykach na stronie: <a href="http://www.rockwellautomation.com/literature">www.rockwellautomation.com/literature</a> Wybierz j zyk publikacji i wpisz w polu poszukiwania "SensaGuard".
<b>JAPANESE:</b>	本説明書シートの多言語版はWebサイト <a href="http://www.rockwellautomation.com/literature">www.rockwellautomation.com/literature</a> にて入手できます。出版言語を選択し、検索フィールドに「SensaGuard」とタイプしてください。
<b>CHINESE:</b>	從以下網頁可以獲得本說明書的多種語言的版本: <a href="http://www.rockwellautomation.com/literature">www.rockwellautomation.com/literature</a>
<b>(Complex)</b>	請選擇出版物的語言,並在搜索欄輸入 "SensaGuard"。
<b>CHINESE:</b>	从以下网页可以获得本说明书的多种语言版本: <a href="http://www.rockwellautomation.com/literature">www.rockwellautomation.com/literature</a> 。
<b>(Simplified)</b>	请选择出版物的语言,并在搜索栏输入 "SensaGuard"。
<b>CZECH:</b>	Tyto pokyny jsou k dispozici v n kolika jazycích na <a href="http://www.rockwellautomation.com/literature">www.rockwellautomation.com/literature</a> . Zvolte si jazyk publikace a do vyhledávacího poli ka vepište "SensaGuard".
<b>SWEDISH:</b>	Detta instruktionsblad finns på olika språk på <a href="http://www.rockwellautomation.com/literature">www.rockwellautomation.com/literature</a> . Välj önskat språk och skriv "SensaGuard" i sökrutan.
<b>DUTCH:</b>	Dit instructieblad is beschikbaar in diverse talen op: <a href="http://www.rockwellautomation.com/literature">www.rockwellautomation.com/literature</a> Kies taal van publicatie en tik "SensaGuard" in het zoekveld.
<b>DANISH:</b>	Denne instruktionsblad kan hentes på mange sprog på <a href="http://www.rockwellautomation.com/literature">www.rockwellautomation.com/literature</a> . Vælg det ønskede publikationsprog og skriv "SensaGuard" i søgefeltet.

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## Installation Instructions

Installation must be in accordance with the following steps and stated specifications and should be carried out by suitable competent personnel. The unit is not to be used as a mechanical stop. Guard stops and guides must be fitted. Adherence to the recommended maintenance instructions forms part of the warranty.

This device is intended to be part of the safety related control system of a machine. Before installation, a risk assessment should be performed to determine whether the specifications of this device are suitable for all foreseeable operational and environmental characteristics of the machine to which it is to be fitted. Refer to Technical Specifications for Certification information and ratings.

### ATTENTION:



The presence of spare actuators compromise the integrity of the safety systems. Personal injury or death, property damage or economic loss can result. Appropriate management controls, working procedures and alternative protective measures should be introduced to control their use and availability.

### WARNING:



Do not defeat, tamper, remove or bypass this unit. Severe injury to personnel could result. The sensor **MUST** be connected to a Class 2 SELV 24V DC, +10% / -15% power supply.

## Technical Specification

Safety Ratings	CAT4/SIL3
Safety Certifications	TUV, CE
Safety Standards	IEC60947-5-3, IEC61508, EN954
Certifications Standards	cULus UL 508
PFHd	$1.12 \times 10^{-9}$

## Operating Characteristics

Sensing Distance, Assured Make (mm)	10
Maximum output current (all outputs, mA)	200
Input Current	50 mA (no load supply current)
Operational Current, Min.	$\geq 1$ mA DC
Off-state Current	$< 0.5$ mA DC
Maximum # of switches, connected in series	Unlimited. See unit response time section
Operating Voltage	24V DC +10% / -15% Class 2 SELV power supply
Utilization category according to IEC 60947-5-2	DC-12 & DC-13
Ue	24V
Ie	200mA
Frequency of operating cycle	1 Hz
Response Time (Off)	54 ms
Case Material	PC/ABS
Actuator Material	PC/ABS
Magnetic Force (N)	Low $\approx 20$ N, Med $\approx 40$ N, High $\approx 60$ N

## Outputs (Guard door closed, Actuator in place)

Outputs	Description	Status
Safety	2 x PNP, 0.2 A max.	ON (+24vdc)
Auxiliary	1 x PNP, 0.2 A max.	OFF (0vdc)

## Environmental

Operating Temperature	-10...+55°C (+14...+131°F)
Operating Humidity	5% -95% relative
Washdown rating	NEMA 3, 4X, 12,13, IP 69K
Shock & Vibration	IEC68-2-27 30 g, 11 ms/IEC 68-2-6 10...55Hz
Radio Frequency	IEC 61000-4-3 IEC 61000-4-6

## 4 SensaGuard™ Installation Instructions

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### Protection

Short-Circuit Protection	Incorporated
Current limitation	Incorporated
Overload Protection	Incorporated
False Pulse Protection	Incorporated
Transient Noise Protection	Incorporated
Reverse Polarity Protection	Incorporated
Overvoltage protection	Incorporated
Thermal shutdown/restart	Incorporated
Electrical Life	10 x 10 <sup>6</sup>

### Mode of Operation

#### Status indicators:

- "Status/Diag" LED illuminates Green - *Door/Guard closed, safety outputs active.*
- "Status/Diag" LED illuminates Red: - *Door/Guard open, safety outputs off.*
- "Status/Diag" LED flashes Red or Green: - *Unit failure. See Diagnostic section below.*

### Mounting Information

Do not over torque the mounting hardware.

Position the switch and actuator so they are aligned with each other.

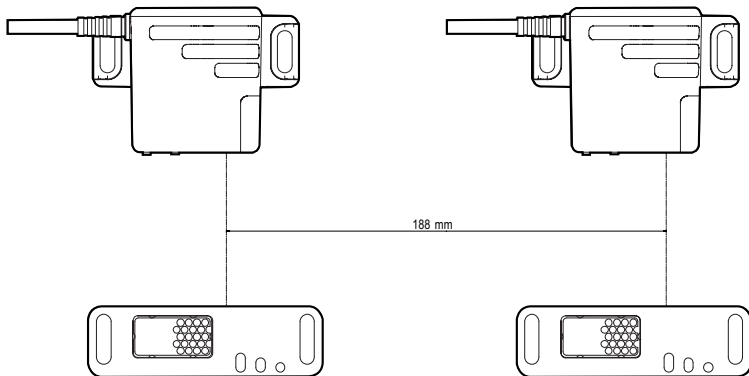
Mount the switch and actuator to removable guard, door or gate.

Recommended fastener size - M6

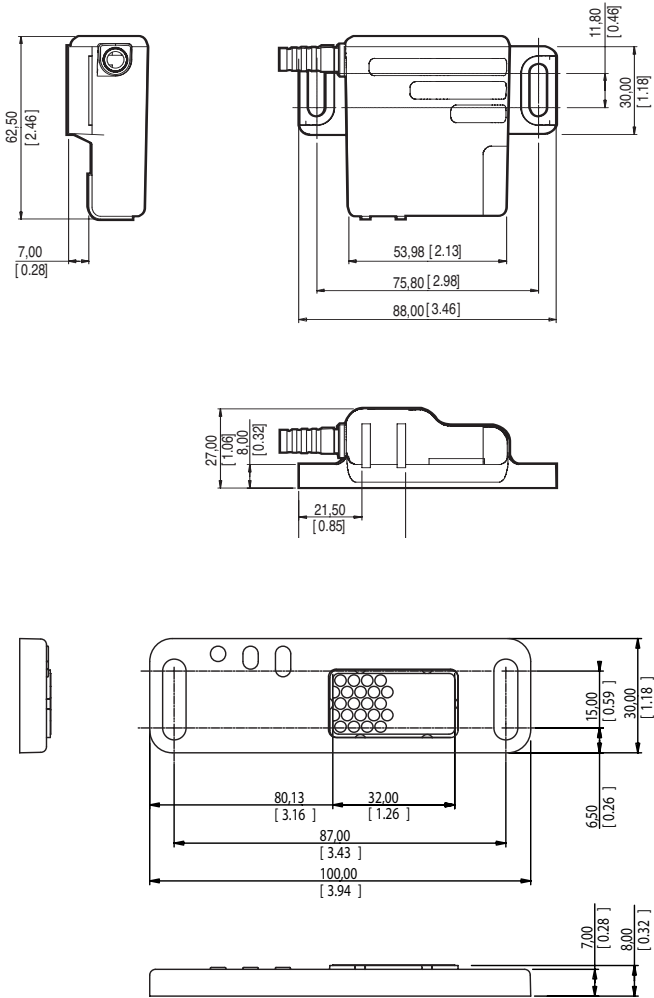
#### Nut Torque Specification

Switch/Actuator: 2.20 N•M (19.5 in•lbs)

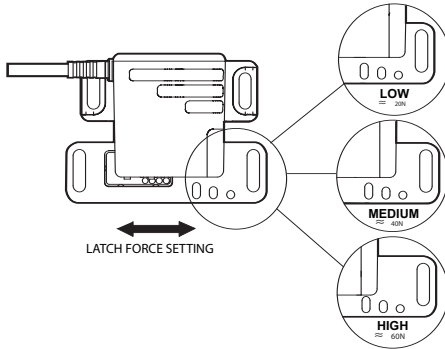
#### Minimum Distance Between Sensors



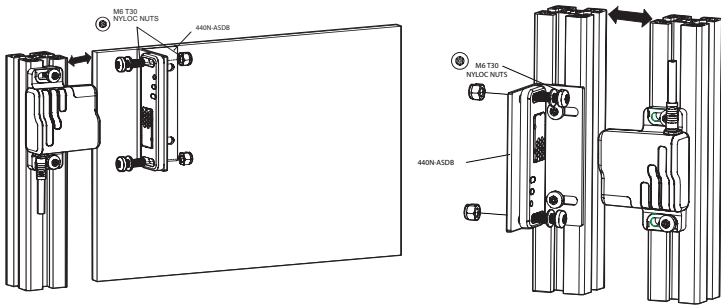
Dimensions - mm (inches)



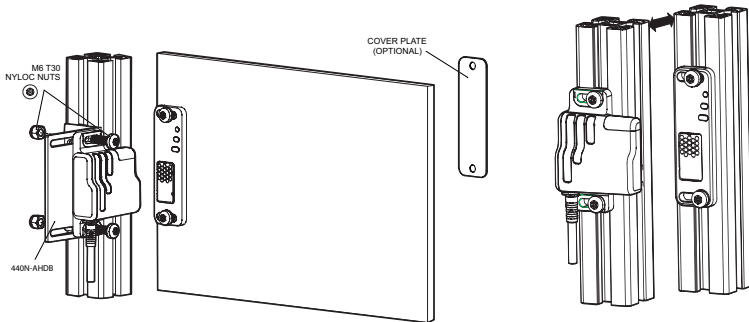
## Mounting Information



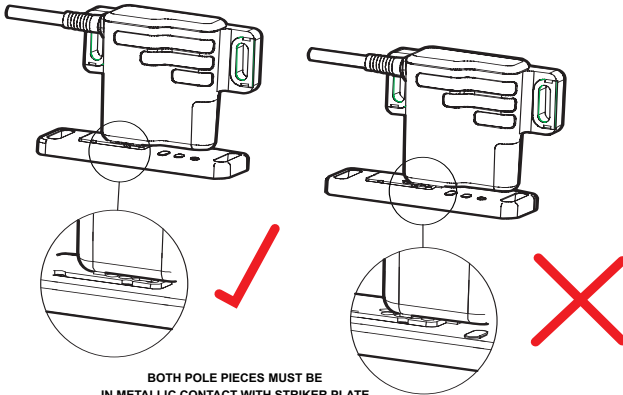
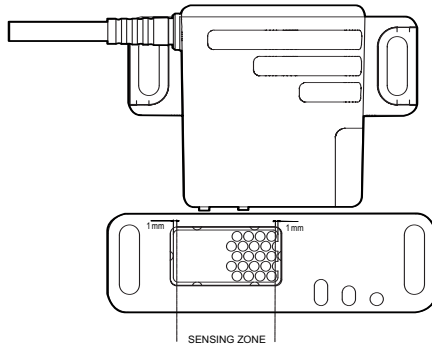
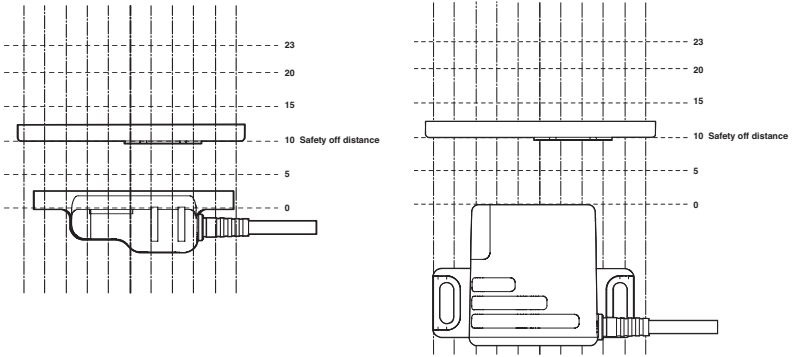
## Sliding Door



## Hinged Door



### Technical Data



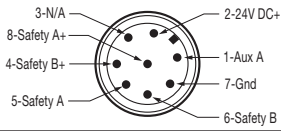
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### Diagnostic

#### Unit Indicators (per IEC 60073)

Status/Diag LED	State	Status	Troubleshooting
	Off	Not Powered	NA
	Red	Not Safe, OSSD not active	NA
	Green	Safe, OSSD active	NA
	Green flash	Power up test or OSSD inputs not valid	Check 24V DC or OSSD inputs (yellow and red wire)
	Red Flash	1 Hz Flash Recoverable Fault 4 Hz Flash Non-recoverable Fault	Recoverable fault —check OSSD outputs are not shorted to GND, 24V DC or each other. Cycle power.

### Typical Wiring Diagram

Description	Plastic	
8-Pin Micro (M12)		
8-Pin Cordset 889D-F8AB-* or cable version	Grey	Safety A
	Red	Safety A+
	Pink	Safety B
	Yellow	Safety B+
	White	Aux A
	Brown	24V DC+
	Blue	Gnd
Green	N/A	

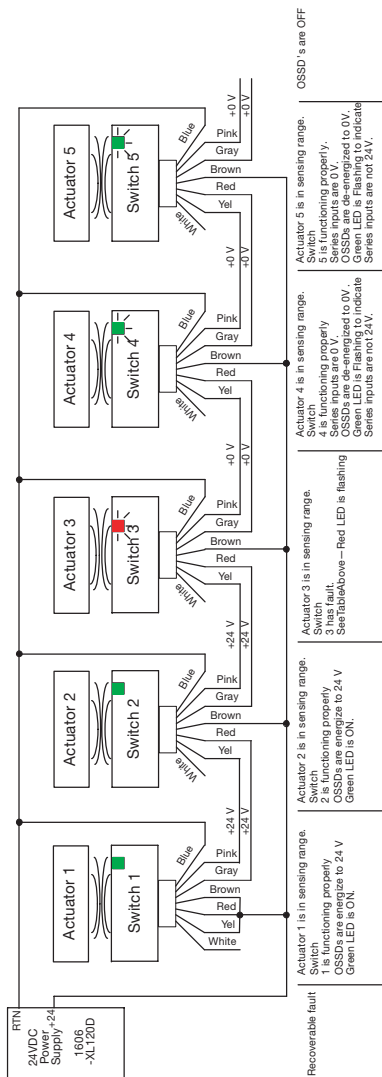
\* Replace symbol with 2 (2m), 5 (5m) or 10 (10m) for standard cable lengths.

**Note:** Refer to Technical Specifications for Certification information and ratings.



## Troubleshooting

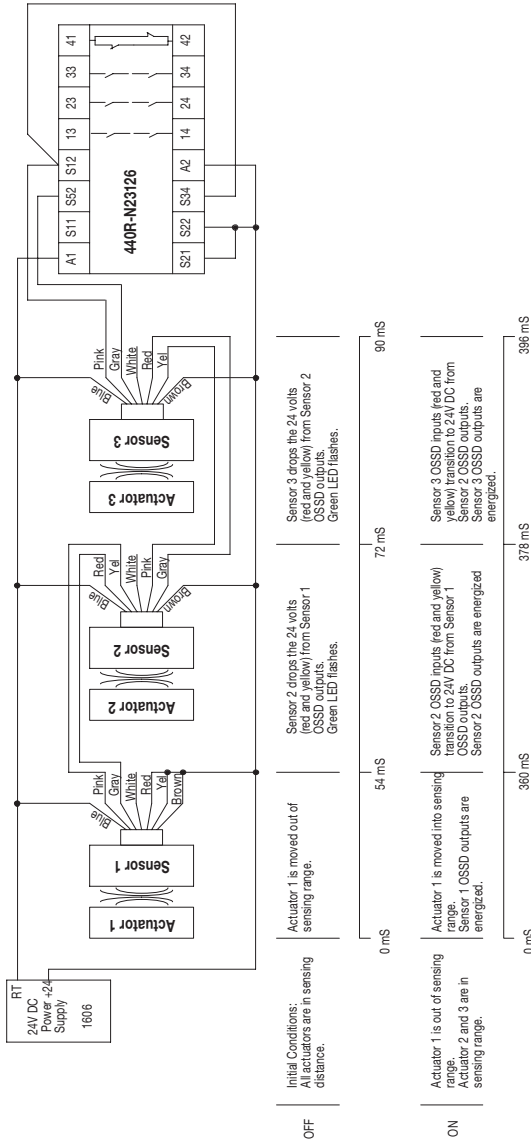
### Series Circuit



**Note:** Refer to Technical Specifications for Certification information and ratings.

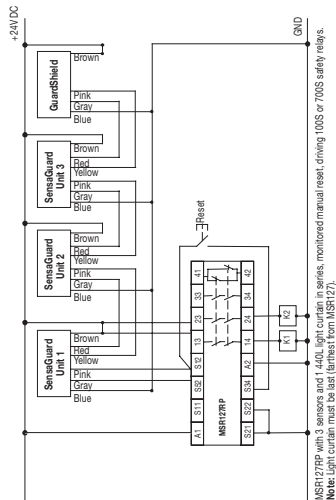
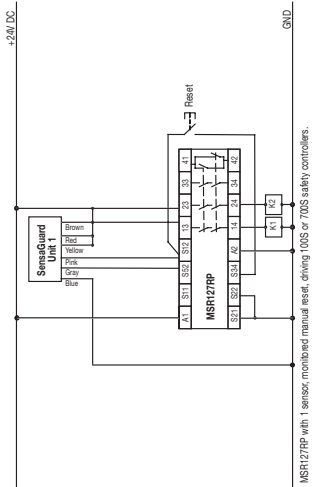
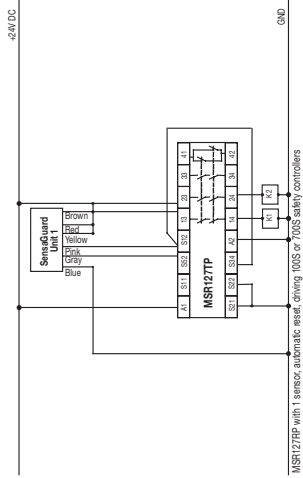
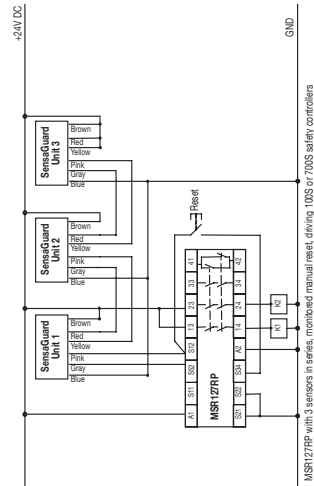
# 10 SensaGuard™ Installation Instructions

## Unit Response Time (does not include safety relay response time)



**Note:** Refer to Technical Specifications for Certification information and ratings.

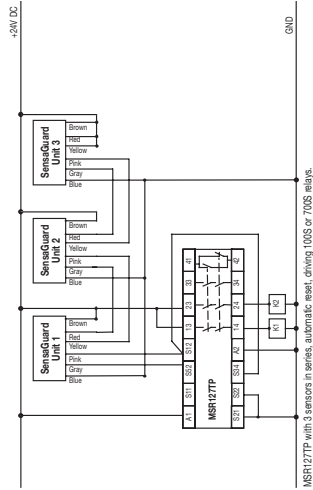
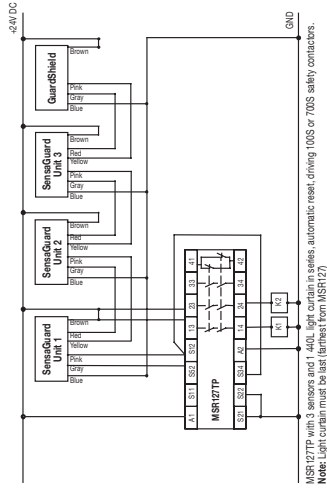
## Application Wiring Examples



**Note:** Refer to Technical Specifications for Certification information and ratings.

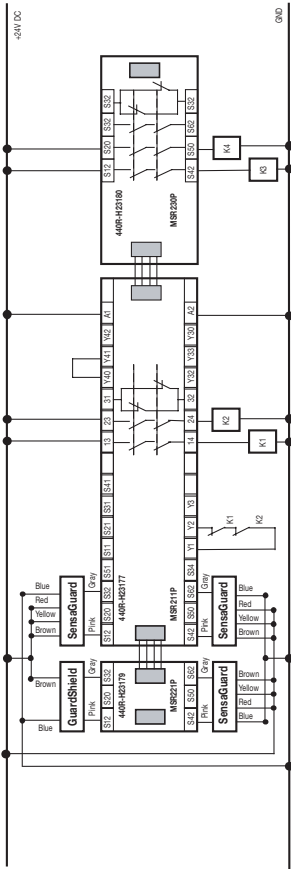
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### Application Wiring Examples

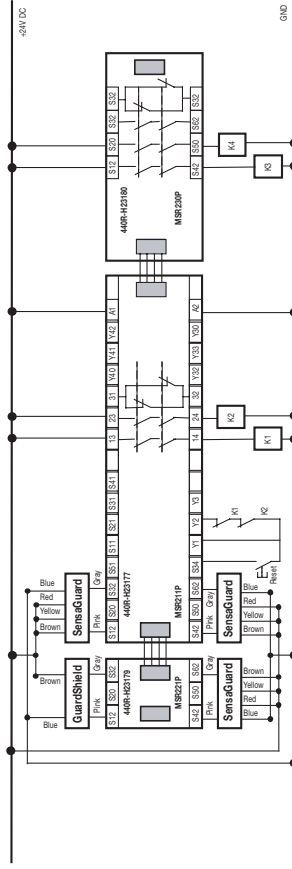


**Note:** Refer to Technical Specifications for Certification information and ratings.

## Application Wiring Examples



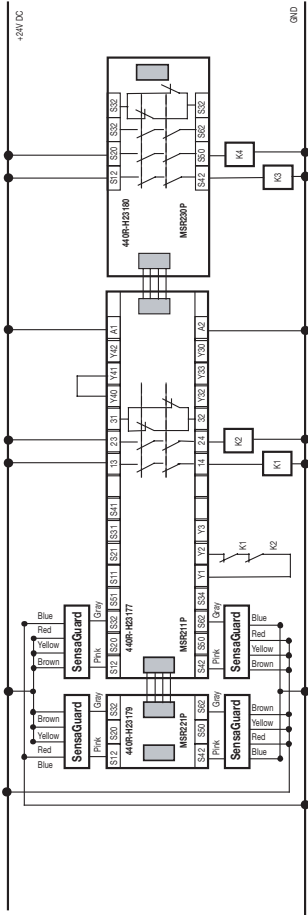
MSR200 series with 3 sensors and 1 440L light curtain, automatic reset, driving 100S or 700S safety contactors.  
Note: Light curtain can be attached to any input.



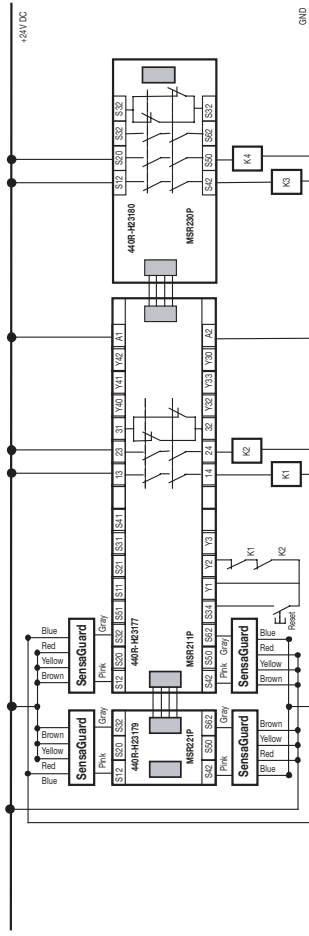
MSR200 series with 3 sensors and 1 440L light curtain, manual reset, driving 100S or 700S safety contactors.  
Note: Light curtain can be attached to any input.

**Note:** Refer to Technical Specifications for Certification information and ratings.

Application Wiring Examples



MSR200 series with 4 sensors, automatic reset, driving 100S or 700S safety contactors.



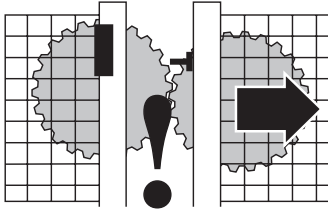
MSR200 series with 4 sensors, manual reset, driving 100S or 700S safety contactors.

**Note:** Refer to Technical Specifications for Certification information and ratings.

## List of recommended relays

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

Relay must have light curtain inputs.



Check the machine is isolated and stopped whenever the interlocked guard door is open.

**IMPORTANT:** After installation and commissioning, the actuator, switch and switch lid fixing screws should be coated with tamper evident varnish or similar compound.

## Maintenance

### Every week.

Check the correct operation of the switching circuit. Also check for signs of abuse or tampering. Inspect the switch casing for damage

## Repair

If there is any malfunction or damage, no attempts at repair should be made. The unit should be replaced before machine operation is allowed.

## Declaration of Conformity



This is to declare that the products shown on this document conforms with the Essential Health and Safety Requirements (EHSR's) of the European Machinery Directive (73/23/EEC as amended by 93/68/EEC). These products also conform to EN 60947-5-3, EN 1088, EN292, EN 60204-1 and have Third Party Approval.

For a comprehensive certificate please visit: [www.ab.com/safety](http://www.ab.com/safety).



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