

# 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.

<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.
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<b>CHINESE: (Complex)</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> 請選擇出版物的語言,並在搜索欄輸入 "SensaGuard"
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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.

Adherence to the recommended maintenance instructions forms part of the warranty.

**This switch has an integrated latch and guard stop for use on lightweight guard doors.**

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.

## Technical Specification

### Safety Ratings

Standards	IEC60947-5-3, IEC61508, ISO 13849-1
Safety Classification	Cat. 4 Per ISO 13849-1, SIL CL3
Functional Safety Data	PFH <sub>D</sub> : 1.12 x 10 <sup>-9</sup> Dual channel interlock may be suitable for use in application up to PLe (according to ISO 13849-1) and for use up to SIL3 systems (according to IEC 62061) depending application characteristics.
Certifications	CE marked for all applicable directives, cULus (UL 508), and TÜV.

### Operating Characteristics

Sensing Distance, Assured ON	Actuator in contact with sensor
Sensing Distance, Assured OFF	32 mm
Maximum output current (all outputs)	200 mA
Input Current	50 mA (no load supply current)
Operational Current, Min.	< 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	0.25 Hz
Response Time (Off)	54 ms
Case Material	Grilamid
Actuator Material	Grilamid/PBT

### 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, IP66, IP67, IP69K
Shock & Vibration	IEC 60068-2-27 30 g, 11 ms IEC 60068-2-6 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.

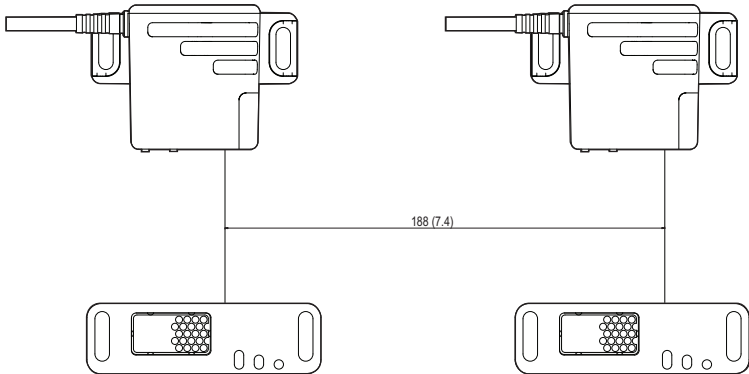
Mount the switch and actuator to removable guard, door or gate.

Recommended fastener size - M6

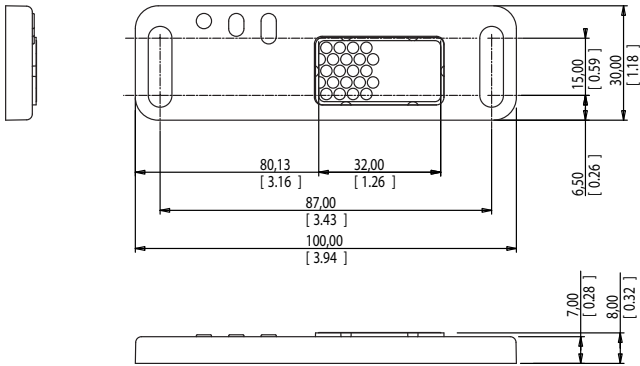
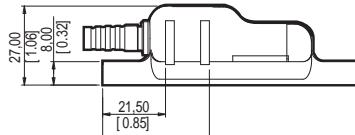
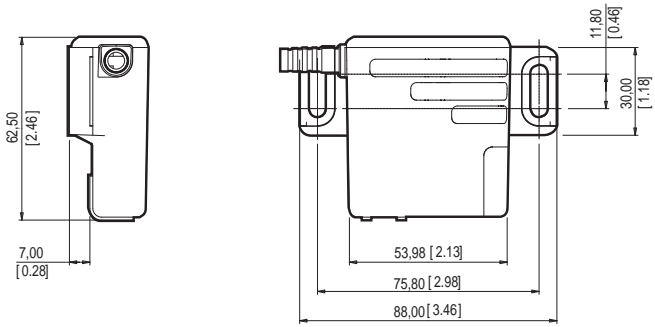
#### Nut Torque Specification

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

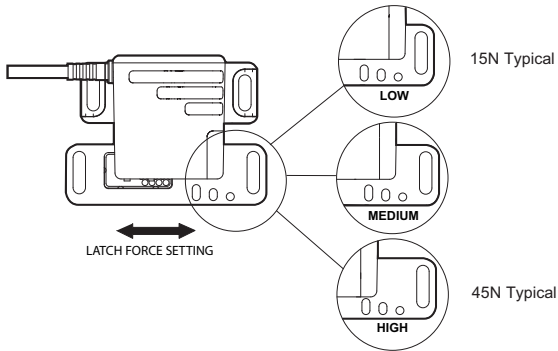
#### Minimum Distance Between Sensors [mm (in.)]



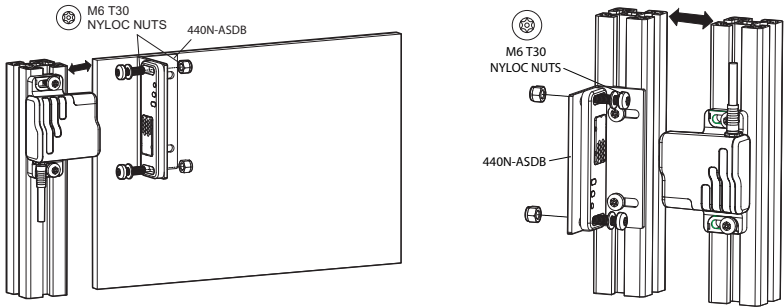
Dimensions - [mm (in.)]



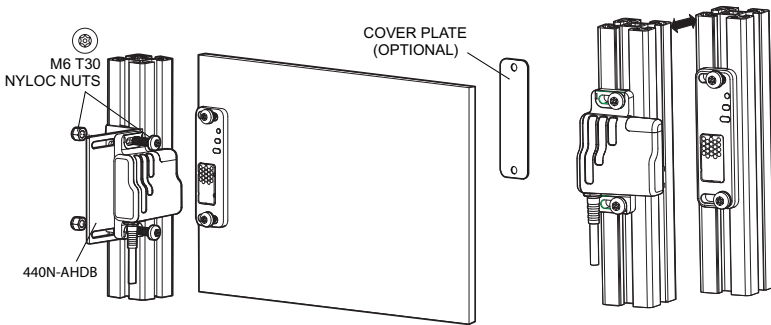
## Mounting Information



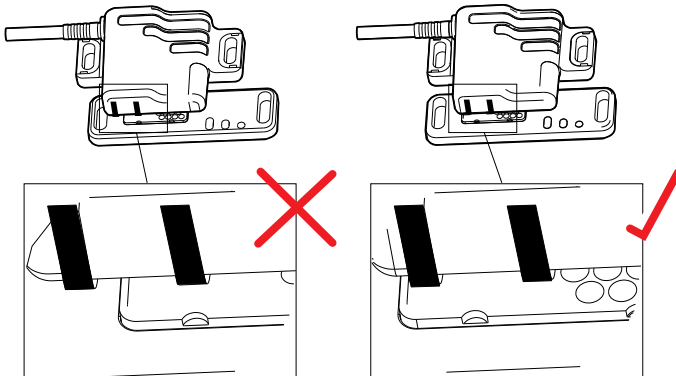
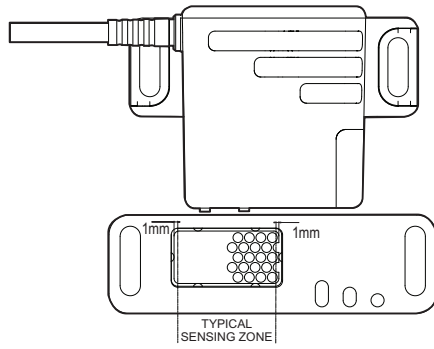
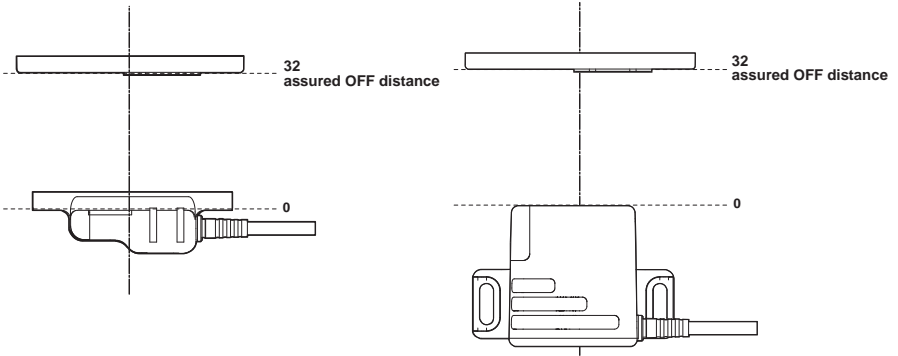
## Sliding Door



## Hinged Door



## Technical Data



**BOTH POLE PIECES MUST BE  
IN CONTACT WITH STRIKER PLATE**

## 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 OSSD Fault 4 Hz Flash Recoverable / Non-recoverable Fault	OSSD 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	0V
Green	N/A	

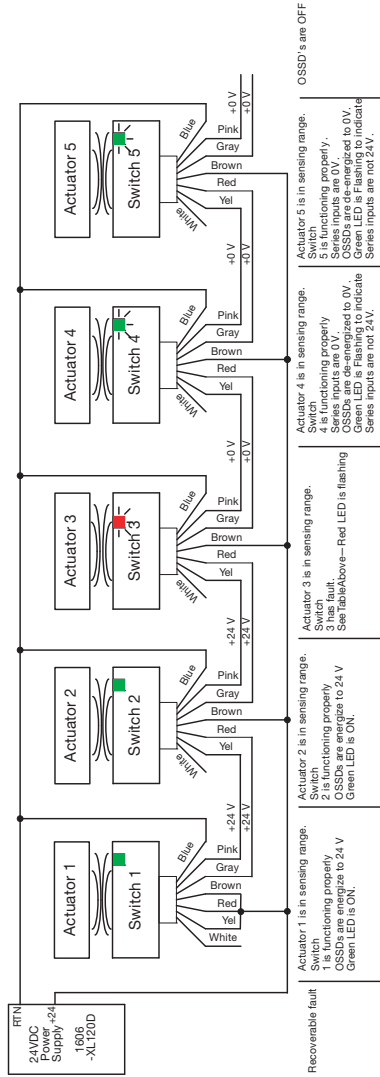
\* Replace symbol with 2 (2m), 5 (5m) or 10 (10m) for standard cable lengths.

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



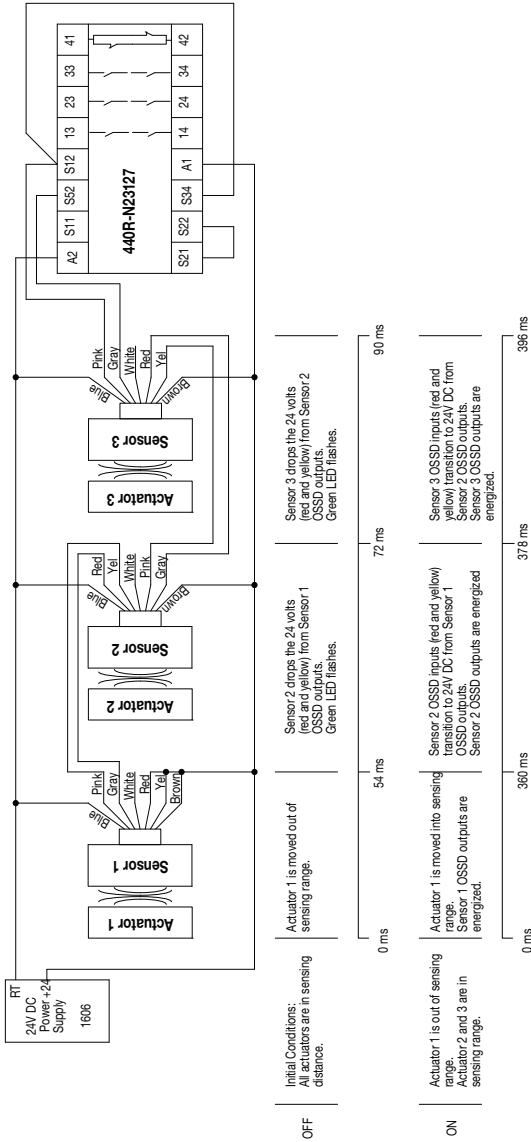
# Troubleshooting

## Series Circuit



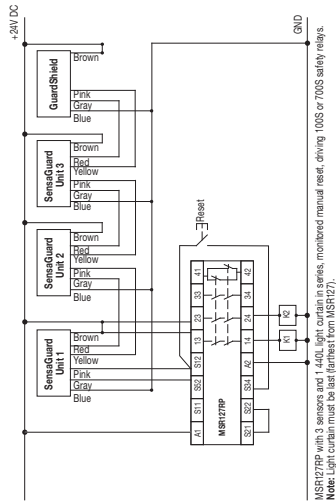
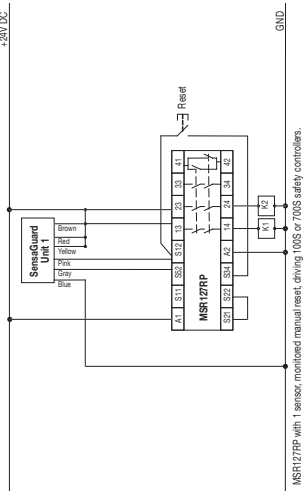
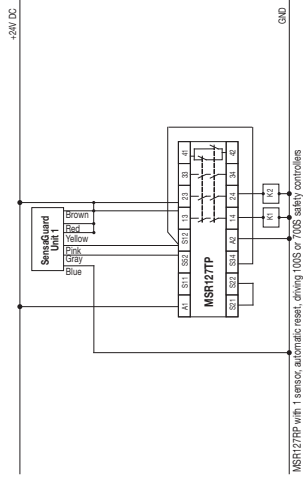
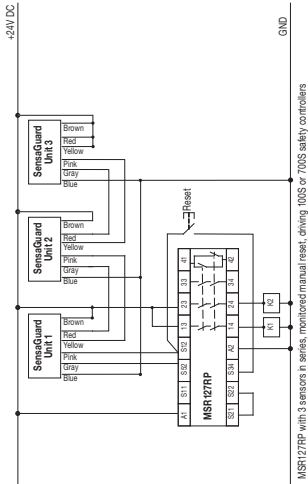
**Note:** Refer to Technical Specifications for Certification information and ratings.

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



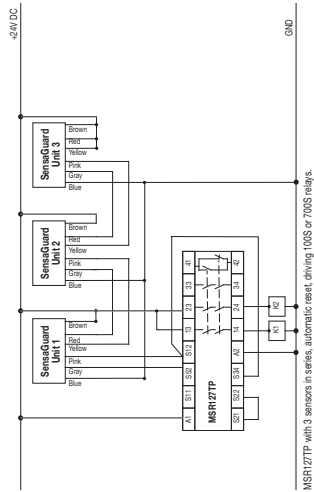
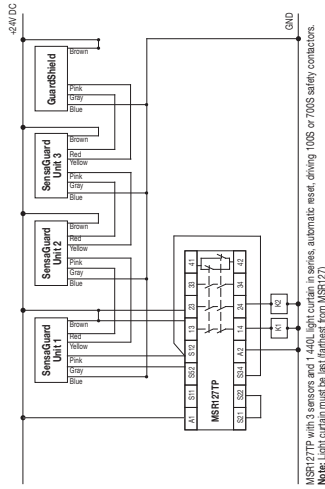
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# Application Wiring Examples



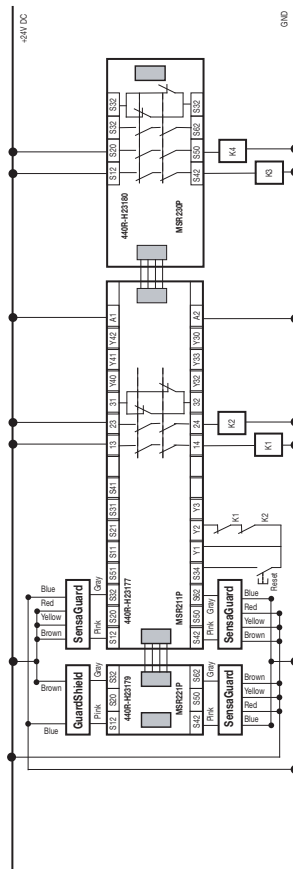
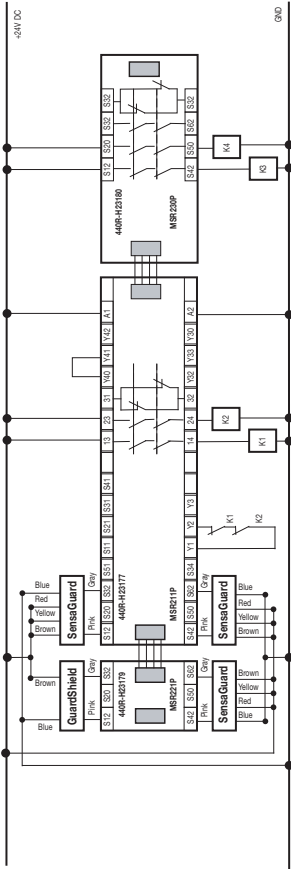
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## Application Wiring Examples



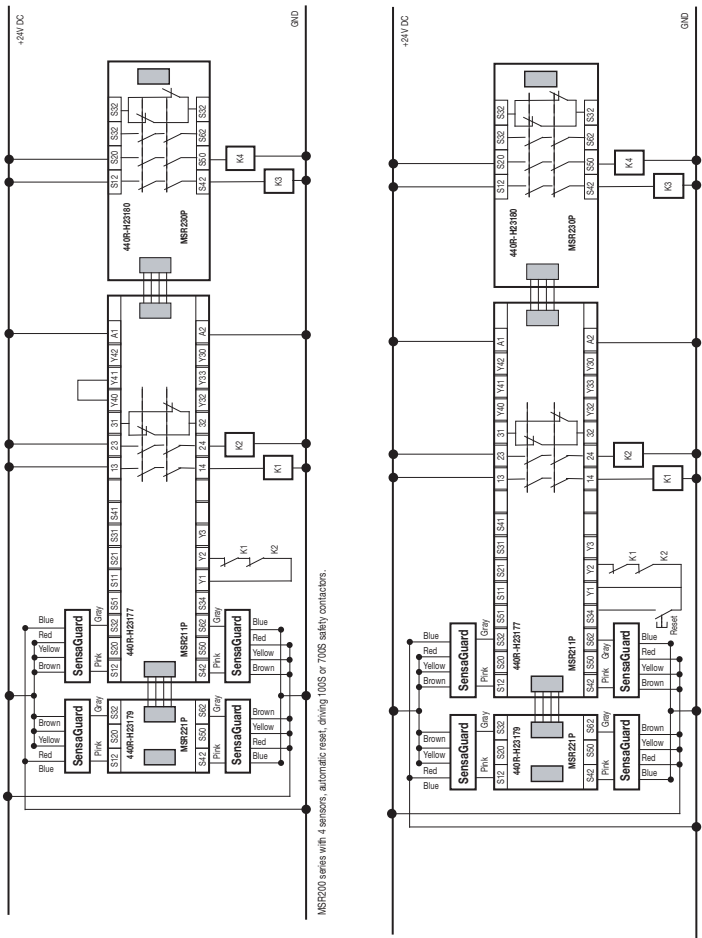
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# Application Wiring Examples



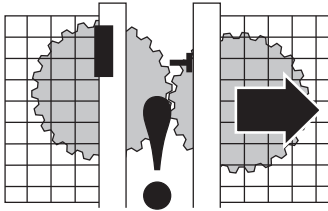
**Note:** Refer to Technical Specifications for Certification information and ratings.

**Notes**

## 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 month.

Check the correct operation of the switching circuit. Also check for signs of abuse or tampering. Inspect the switch casing for damage. Inspect the magnet poles and clean off any dirt or debris.

## 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 2006/42/EC. These products also conform to EN 60947-5-3, EN 1088, EN ISO 12100, EN 60204-1 and have Third Party Approval.

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



**Allen-Bradley**

Guardmaster®

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