

# MSR329P

## Description

The MSR329P is an input expansion module for the modular MSR300 family to monitor the function of connected muting lamps if the system is setup for a robot cell application. One muting lamp module can be used in each MSR300 system. To use the muting module there must be at least two MSR320P input modules. The muting lamp module can be connected anywhere in the string of input modules but the terminator must be located in the left most module. The connecting ribbon cable provides power to the MSR329P as well as a check on its status. The muting lamp module is used to drive and to monitor the muting lamps only. The MSR320 input module can operate a muted cell operation without the muting lamp module present.



The MSR329P can be used for robot cell applications when the application requires a portion(s) of the inputs devices to the cell to be temporarily disabled. If for example, parts needed to be added or removed from the machine. The light curtain may need to be muted during this time to prevent the machine from stopping during this condition. Interlock switches can be used to determine the position of the robot within the cell to initiate the muting function.

When using the muting module, group three MSR330P output modules are required for the robot control or power. Group outputs 1 and 2 will still change state normally when an input changes state such as a light curtain. Output groups 1 and 2 are not required for robot cell applications but can be used to remove hazardous local voltages such as an arc welder during a muting condition.

The muting module has two main lamp modules and two spare lamp modules. If the main lamp module fails, the spare lamp module will be used. The MSR329P muting module requires an incandescent bulb operating between 30...200 mA to accurately determine the bulb status. LEDs cannot be used. Two LEDs provide the status information on all four lamps. They indicate if the bulbs are okay or if any have failed.

## Lamp Outputs

- Two Main Lamps
- Two Auxiliary Lamps

## Features

- Category 4 per EN 954-1
- SIL3 IEC 61508
- 17.5 mm DIN Rail housing
- Two Diagnostic LEDs
- Removable terminals

## Specifications

Safety Ratings	
Standards	IEC/EN 60204-1, ISO TR 12100, EN 61508, ISO 13849-1 (EN 954-1)
Safety Classification	Cat. 4 per EN 954-1 (ISO 13849-1), SIL CL3 per EN IEC 62061, PLe per ISO 13849-1
Functional Safety Data * Note: For up-to-date information, visit <a href="http://www.ab.com/safety/">http://www.ab.com/safety/</a>	PFH <sub>D</sub> : < 3.8 x 10 <sup>-10</sup> MTTF <sub>d</sub> : > 662 years Suitable for performance levels PLe (according to ISO 13849-1:2006) and for use in SIL3 systems (according to IEC 62061) depending on the architecture and application characteristics
Certifications	CE Marked for all applicable directives, cULus, c-Tick, and TÜV
Power Supply	
Input Power Entry	24V DC from the base unit
Power Consumption	1 W
Inputs	
Safety Inputs	Monitoring of 2 muting lamps 24V DC current between 30....200 mA
Reset	Selected on base module
Outputs	
Safety Contacts	2 x muting lamps, 2 x reserve lamps
Status Indicator	Status of lamps
Environmental and Physical Characteristics	
Enclosure Type Rating/ Terminal Protection	IP40 (NEMA 1)/ IP20, DIN 0470
Operating Temperature [C (F)]	-5...+55 ° (23...131 °)
Vibration	10...55 Hz, 0.35 mm
Shock	10 g, 16 ms, 100 shocks
Mounting	35 mm DIN Rail
Weight [g (lb)]	110 (0.24)
Conductor Size, Max.	0.2...2.5 mm <sup>2</sup> (24...12 AWG)

\* Usable for ISO 13849-1:2006 and IEC 62061. Data is based on the following assumptions:

- Mission time/Proof test interval of 20 years
- Functional test at least once within six-month period

## Product Selection

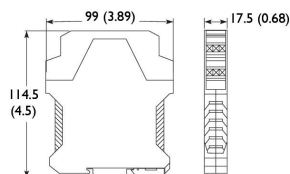
No. of Main Lamps	No. of Auxiliary Lamps	Current Range	Terminals	Reset Type	Power Supply	Cat. No.
2	2	30...200 mA	Removable	–	24V DC from the base unit	440R-W23217

## Accessories

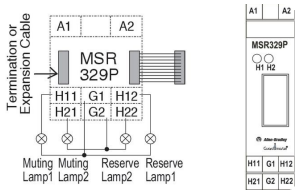
Description	Cat. No.
Bag of 4, 3-Pin Screw Terminal Blocks	440R-A23210
Bag of 4, 3-Pin Spring Clamp Terminal Blocks	440R-A23229

## Approximate Dimensions

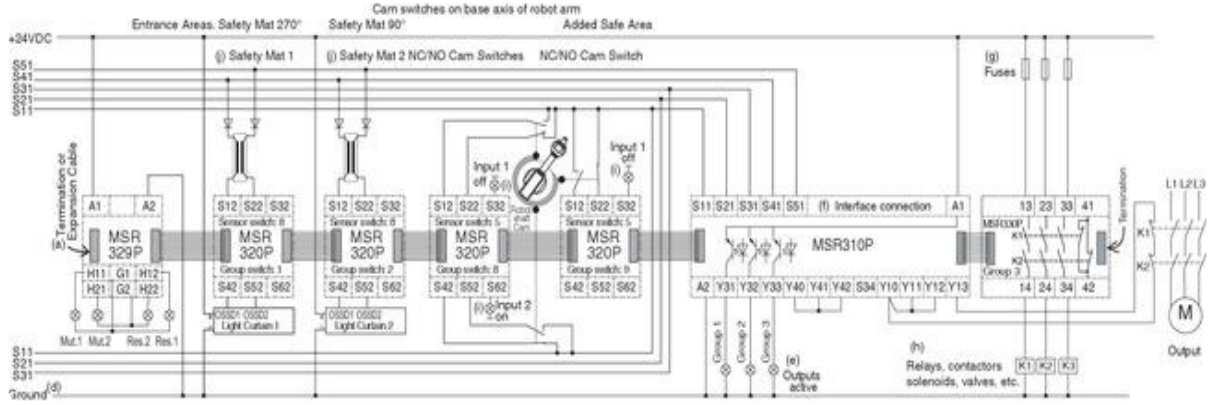
Dimensions are shown in mm (in.). Dimensions are not intended to be used for installation purposes.



## Block Diagram



## Typical Wiring Diagrams



MSR300 three-zone Robot Cell application allowing safe material flow in and out of the cell without process interruption as long as the robot arm is working in monitored safe zones.