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## Resource Module — Mute Module

- Type 4 safety product, when used in combination with a Type 4 safety light curtain
- Provides muting controls for up to two light curtains
- Diagnostic display
- Solid-state safety outputs
- 100 mm DIN box enclosure
- Removable terminal blocks
- DeviceNet option
- Compatible with MS4800, F3SJ, PA4600, OS3101 and OS32C
- A Rapid Delivery Product: Select models are available for shipment today or within 3 to 5 days

### Input Signals

- Input Power +24 VDC
- Two independent channels, each channel is comprised of one light curtain and up to four mute sensors
- Start
- EDM (MPCE monitoring)
- Mute enable

### Output Signals

- Two independent PNP safety outputs
- NPN & PNP auxiliary outputs
- Mute lamp drivers (2)
- Mute auxiliary (NPN)
- Mute armed (NPN)

### Indicators

- Diagnostic display
- Machine Run
- Machine Stop
- Interlock
- OSSD input active (light curtains)
- Sensor input active (sensors)
- Mute Enable active



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## Specifications

Performance	
Response Time:	1 ms
Electrical	
Outputs	
Safety Outputs:	Two independent 625 mA (max.) current sources (PNP), 24 VDC
Auxiliary Outputs:	Auxiliary NPN output: 100 mA (max.) current sink, 30 VDC max. Auxiliary PNP output: 500 mA (max.) current source, 24 VDC
Mute Lamp:	Two (NPN) output with 40-300 mA, 30 VDC max.*
Mute Auxiliary:	NPN output 100 mA (max.), 30 VDC max.
Mute-Armed:	NPN output, 100 mA (max.), 30 VDC max.
MPCE Monitor:	24 VDC, 50 mA (sourced by RM-3)
Inputs	
Input Power:	24 VDC $\pm 10\%$ , 50 W max.
Safety Devices:	PNP 24 VDC @ 50 mA machine run, 0 V machine stop
Mute Sensor:	PNP 24 VDC (20 mA consumption)**
Mute-Enable:	SPDT key-operated switch, maintained contacts
Start/Restart:	Either N.O. or N.C. momentary contact (10 mA consumption)
Environmental	
Enclosure Rating:	IP20 (Unit to be installed in enclosure with minimum IP54)
Operating Temperature:	0 to 55°C (32 to 131°F)
Storage Temperature:	-25 to 75°C (-13 to 167°F)
Humidity:	95% maximum, non-condensing
Conformity/Approvals	
Conformity to Standards:	Type 4 per IEC 61496-1. UL listed.
Vibration:	In accordance with IEC 68-2-6, 0.35 mm displacement, 10 to 55 Hz
Shock:	In accordance with IEC 68-2-29, 10 g, 16 msec. pulses, 1000/axis
Mechanical	
Enclosure:	IP20, polycarbonate DIN rail mount
Dimensions:	100 mm W x 75 mm H x 110 mm D (3.94 in. W x 2.95 in. H x 4.33 in. D)

Specifications are subject to change without notice.

## Description

The RM-3 Mute Module can control the muting functions of two light curtains. It is ideal for Entry/Exit applications. The RM-3 provides temporary, automatic suspension of the safety function(s).

\* The external lamp must provide a current load between 40 mA and 300 mA for the lamp monitoring circuit to sense proper operation of the mute lamp.

\*\* When photoelectric sensors are used, they need to alternate between "dark operate" and "light operate" configuration. That is to say that sensors S1A, S1C and S2A, S2C need to have "dark-operate" PNP type outputs. Sensors S1B, S1D and S2B, S2D must have "light-operate" outputs.



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## Description (continued)

### Muting

The term "Muting" is defined as bypassing the protective function of the safety light curtain and is only permitted by ANSI B11.19 during the non-hazardous portion of the machine cycle.

Machine controllers which initiate muting must be designed for control reliability. The ANSI B11.19-2010 standard explains the muting requirements:

"Muting of the device shall be permitted during the nonhazardous portion of the machine cycle. Muting of the device shall be accomplished in such a manner that no single component failure shall prevent the normal stop command and shall prevent subsequent machine cycles until the failure is corrected.

If the machine tool has reversing capability where a muting hazard is possible, the control [system] shall include an automatic means through which the muting is only permitted in the forward direction." [Section 4.2.3.3.7]

#### Using Muting

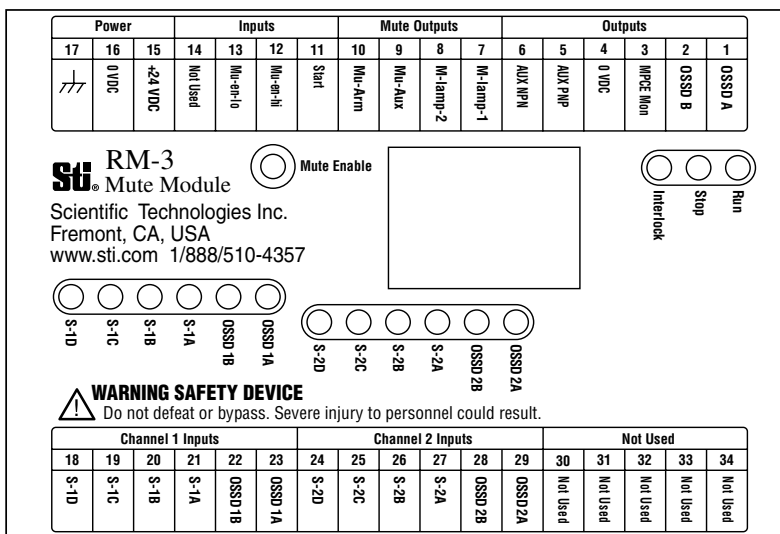
Use of a muting function requires special precautions by the safety system machine controller, installer, operator and employer. The proper installation, checkout, and operation of a machine and muting system is critical to the safe operation of the machine. The following is only a partial list of requirements when utilizing muting and is not intended to be a complete guide to muting standards. The employer must contact the local safety authority for specific

requirements regarding the machine, machine controller and safety related control system. Omron provides the following information for users reference only and makes no claim regarding the accuracy, completeness or effectiveness for a specific application from any organization:

- Muting of the light curtain is only permitted during the nonhazardous portion of the machine cycle.
- If the machine tool has reversing capability where a muting hazard is possible, the control system shall include an automatic means through which muting is only permitted in the forward direction.
- A muting system must make use of two, three, or four PNP (24 VDC sourcing) sensors. A single sensor, either mechanical or photoelectric, cannot be used in place of the required multiple sensor system.
- The muting position (of the mute signal source) shall be secured against unauthorized adjustment by provision of special tools, key entry, electronics passwords and the positioning and the fixing of associated limit switches.

The above requirements were compiled from the following sources: ANSI B11.19-2010, prEN692-1994 and prEN50100-1-1993. Other standards may exist for your specific application. Contact your local safety authority and machine supplier for further information.

## Terminal Orientation Reference

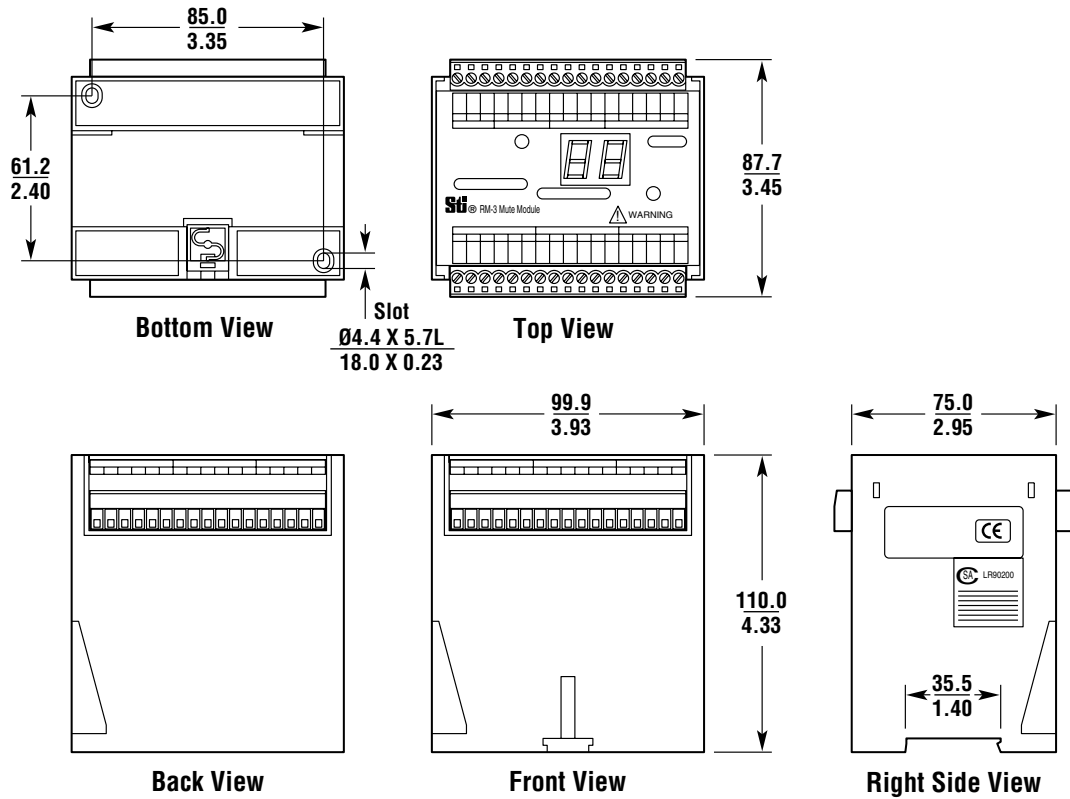


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## Dimensions

(mm/in.)



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## Ordering

Model No.	Description
RM-3	Resource module, 24 VDC, DIN-rail mount
RM-3-RV	Resource module, 24 VDC, DIN-rail mount with DeviceNet
MTLEDC-RM3	LED clear mute lamp kit
MTLEDA-RM3	LED amber mute lamp kit
MTINDC-RM3	Incandescent clear mute lamp kit



For information on the OS32C, see page B-6



For information on the PA4600, see page D-37



For information on the MS4800, see page D-46



For information on safety light curtain accessories, see page D-78

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