

Muting Controller Box

Description

The Rockwell Automation Guardmaster muting controller box is a prewired enclosure using an MSR42 (440R-P226AGS-NNR) multi-function control module as the muting control module. This muting enclosure has prewired M12 quick-disconnect connectors to accommodate the connection of the Safe4, Micro 400, or GuardShield POC and PAC safety light curtains. It also has prewired quick-disconnect connectors to connect up to four Rockwell 42EF, 42JS, or other Rockwell sensors.



The Rockwell Automation muting control box is factory configured for two sensor T-configuration muting using a Safe 4 or GuardShield 440L safety light curtain. Other muting configurations or Micro 400 light curtains will require the reconfiguration of the MSR42 muting control module using the optical interface (445L-AF6150).

An active muting condition is indicated by the illumination of the white lamp on the front cover of the muting box or an external muting lamp may be connected to an M8 pico quick-disconnect connector located on the bottom of the muting box. For setting up a complete muting station, Rockwell Automation offers:

- A mounting stand including a base plate for floor mounting, and
- Cantilever arms.

Features

- Fully assembled muting control box (design based on MSR42 technology) with mounting accessories
- Integrated muting lamp
- Integrated override and reset function operated by key switch
- IP65
- Works with all GuardShield light curtains (Safe 4, Micro 400, or GuardShield 440L)
- Standard: two sensor, T-type muting with GuardShield 440L or GuardShield Safe4
- Other muting types and parameters are configurable with Optical Interface
- Standard M8- and M12-connectors
- Two times OSSD safety outputs

Applications

- Conveyors
- Automatic storage
- Palletizer

Specifications

Safety Ratings	
Standards	EN 954-1, IEC/EN 60204-1, IEC 61496-1
Safety Classification	Cat. 4 per EN 954-1 (ISO 13849-1), SIL CL3 per EN IEC 61508, PLe per ISO 13849-1
Functional Safety Data Note: For up-to-date information, visit http://www.ab.com/Safety/	PFH _D : < 9.00E-10 MTTFd: > 331 years For use in SIL3 systems (according to IEC 61508) depending on the architecture and application characteristics
Certifications	TÜV and CE Marked for all applicable directives
Power	
Power Supply	24V DC
Power Consumption	2.4 W (semi-conductor outputs unloaded, no sensors)
Inputs	
Input Type	Safety: 2 x OSSD (Micro 400 software selectable) Auxiliary: 2 x PNP for muting sensors; 2 x PNP for reset and EDM
Reset	Manual monitored (automatic software selectable)
Outputs	
Output Type	2 x safety: PNP, 400 mA each, short-circuit protected and with cross-fault detection; 2 x auxiliary: PNP, max. 100 mA
Operating Characteristics	
Output Function	2-sensor T-type muting for GuardShield 440L or Safe4
Response Time	≤ 17.3 ms (standard) determined by configuration
Indicator LEDs	Output-state, internal error, muting lamp
Environmental	
Enclosure Type Rating	IP65
Operating Temperature [C (F)]	0...+55° (32...131°)
Storage Temperature [C (F)]	-25...+70° (-13...158°)
Physical Characteristics	
Housing Material	Thermoplastic polyester blend, UL94 5VA (Cat. No. 598-DS885M)
Weight [kg (lb)]	1.7 (3.75)

Product Selection

Inputs	Safety Outputs	Auxiliary Outputs	Terminals	Reset Type	Power Supply	Cat. No.
GuardShield, Safe4 (Micro 400) muting sensors	2 PNP	2 PNP	M12/5-pin M12/8-pin	—	24V DC	445L-AMUTBOX1

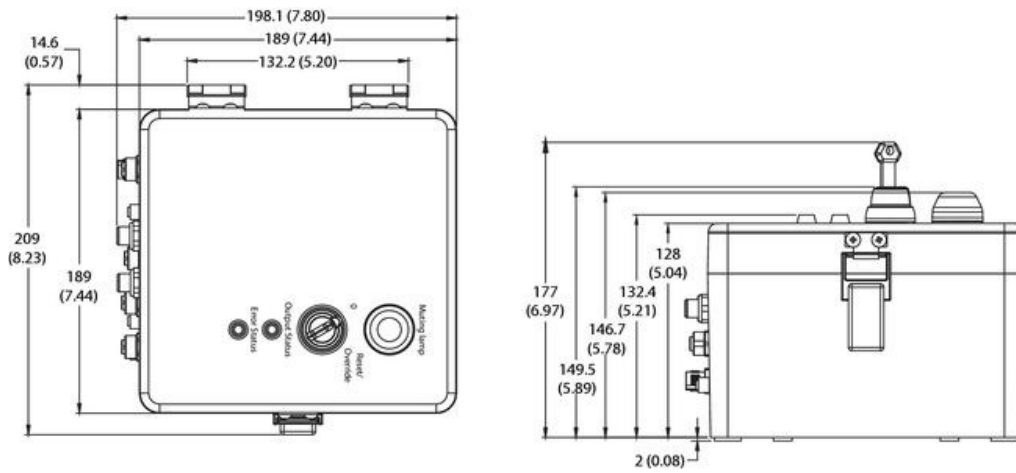
Recommended Logic Interfaces

Description	Safety Outputs	Auxiliary Outputs	Terminals	Reset Type	Power Supply	Cat. Page No.	Cat. No.
Single-Function Safety Relays for 2 N.C. Contact Switch							
MSR127TP	3 N.O.	1 N.C.	Removable (Screw)	Auto./Manual	24V AC/DC	MSR127RP/TP	440R-N23132
MSR126	2 N.O.	None	Fixed	Auto./Manual	24V AC/DC	MSR126R/T	440R-N23117
SI	2 N.O.	1 S.S.	Removable (Screw)	Auto./Manual	24V	MSR126R/T	440R-S12R2

Approximate Dimensions

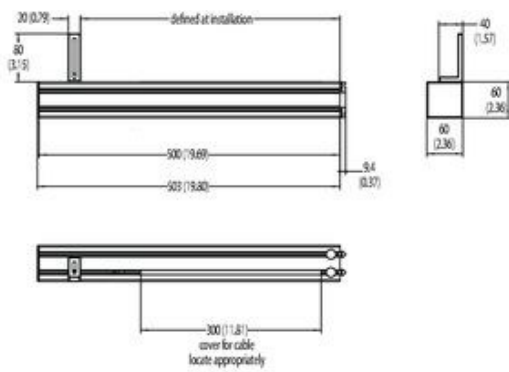
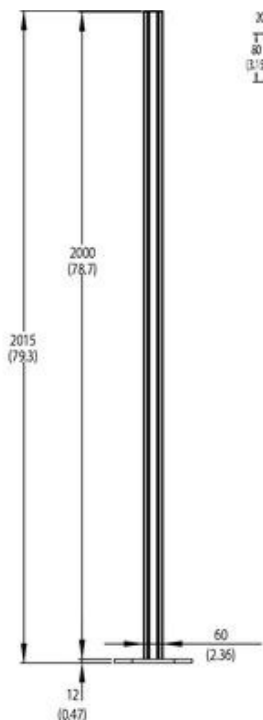
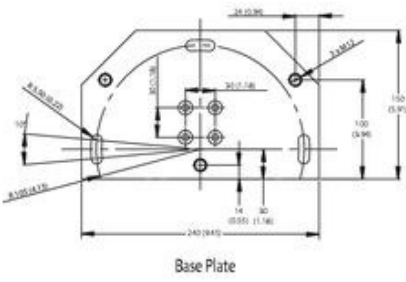
Dimensions are shown in mm (in.). Dimensions are not intended to be used for installation purposes.

Muting Box



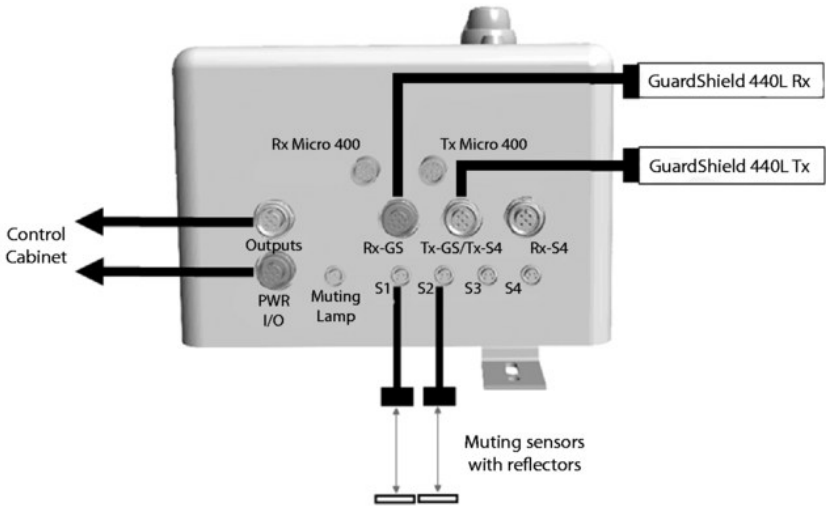
Mounting Stand and Cantilever

- Mounting stand**
 Cat. No. 445L-AMSTD2M
 Length 2000 mm
 Cross section 60 x 60 mm
 Material Anodized aluminum
 Base plate Anodized aluminum
 Size 240 x 150 mm
 Leveling 3 screws



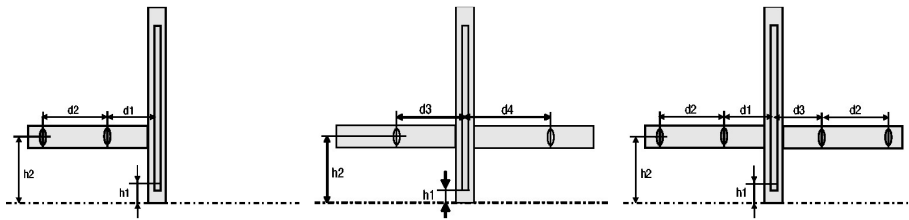
- Cantilever**
 Cat. No. 445L-AMSTMUT
 Length 500 mm
 Cross section 60 x 60 mm
 Material Anodized aluminum
 Included Mounting angle for reflector

Typical Wiring Diagrams



Note: This figure shows the principal wiring of a GuardShield light curtain for a two sensor T-type muting set up. See the MSR42 section of the *Safety Products* catalog for all possible muting modes attainable with this muting box.

Muting Applications



Two Sensor L-Type

Two Sensor T-Type

Four Sensor T-Type

	Muting Type				Safety Light Curtain				Muting Sensor			Comments
	2 Beam, T-type	2 Beam, L-type	4 Beam, T-type	2 Beam, T-type w/Enable	GS Safe2 or Safe4	GS Micro 400	GS (440L)	Other Safety Sensor	RightSight	VisiSight	Other	
Default	√				√		√	√	√	√	√	Default Setting
Selectable		√			√	√	√	√	√	√	√	Configurable with MSR42 safety software & download with optical interface
Selectable			√		□	√	□	□	√	√	√	
Selectable				√	□	√	□	□	√	√	√	

Two Sensor T-type Application



Accessories

Description		Cat. No.
Light curtain patchcords	5-pin and/or 8-pin M12 patchcord	Depends on safety light curtain
Muting sensor	RightSight, polarized retroreflective, red, DC; 2 complementary LO/DO outputs, (PNP), 4-pin pico QD on 152 mm (6 in.) pigtail	42EF-P2MPB-Y4
Muting sensor patchcord	4-pin M8 2 m (6.6 ft) patchcord (also available in 1, 3, or 5 m (3.3, 9.8, or 16 ft) lengths)	889P-F4ABPM-2
RightSight	Swivel/tilt bracket for RightSight sensors	60-2649
Muting sensor reflector	Reflector diameter 76 mm (3 in.) (bracket for reflector in cantilever)	92-39
Connection cable (PWR I/O)	8-pin M12 2 m (6.6 ft) cable (also available in 2...30 m (6.6...98 ft) lengths)	889D-F8AB-2
Connection cable (outputs)	5-pin M12 2 m (6.6 ft) cable (also available in 2...50 m (6.6...98 ft) lengths, cable only required when using EDM function)	889D-M5AC-2
Muting stand		445L-AMSTD2M
Muting cantilever		445L-AMSTDMUT
Muting lamp with bracket	Only required if internal lamp is not desired.	855E-24TL7 855E-BVMC
3-Pin Pico Style QD Cordset		889P-M4AB-5
USB optical interface software configuration tool used to configure the MSR42	Only required if a reconfiguration is desired.	445L-AF6150

